

1st Quarter 2025 Town Administrator's Report





Safe Pathways for Paonia – 5th & Grand Realignment Water Capital Improvement Plan Phase I

Strategic Plan Beginning in FY-2025



5th & Grand Avenue Update – Safe Pathways for Paonia

Additional Funding, Obtaining Temporary Construction Easements, PS&E Approvals from CDOT, Publishing Bids

The **Safe Pathways for Paonia** project centers on the realignment and infrastructure improvement of 5th Street in the Town of Paonia. This effort aims to enhance safety for all users, support active transportation, and address critical utility relocations along the corridor. The project also emphasizes inclusive stakeholder engagement and community-driven planning.

This transformative project is made possible through multiple funding sources and strategic partnerships. The Town of Paonia has been awarded **\$1,010,592** from the **Colorado Department of Transportation (CDOT)** through its **Revitalizing Main Streets (RMS)** grant program. Additionally, CDOT's **Statewide Transportation Advisory Committee (STAC)** has recommended Paonia's **Safe Routes to School** (SRTS) initiative for an additional grant award of **\$872,825**, pending final approval by the CDOT Transportation Commission. The Town is also required to provide a **local cash match of \$30,000**, demonstrating its commitment to the project.

These awards are **reimbursable grants**, meaning the Town must submit detailed invoices and proof of payment for eligible project expenses. It should be noted that any costs exceeding the awarded amounts are the financial responsibility of the Town.

The project has been developed in collaboration with CDOT and in alignment with the objectives of the RMS and SRTS programs, which prioritize the creation of safer, more accessible routes for pedestrians and cyclists, particularly school-aged children.

To facilitate construction, **Temporary Construction Easements (TCEs)** have been secured for portions of private property adjacent to the project area. These easements, documented in **Exhibits A through G**, allow contractors to access necessary areas temporarily to complete improvements without permanently impacting property ownership or use. The Town worked closely with affected property owners to negotiate fair and equitable terms, ensuring transparency and cooperation throughout the process.

Together, these grants, local match funds, and community partnerships are enabling the Town of Paonia to move forward with a project that will deliver long-term safety, mobility, and livability benefits for residents and visitors alike.

Coordination Meetings: The Town of Paonia has held multiple coordination meetings with engineers, CDOT, utility companies, and affected property owners. The most recent meeting, held on July 2, 2024, involved direct stakeholders, including property owners impacted by the construction.

Next Steps:

- CDOT's specialty Units have reviewed the Plans, Specifications, and Estimates (PS&E) for the project and only one comment has been received that SGM plans to address.
- Continue coordinating with utility providers, contractors, and property owners.
- CDOT has given the approval for Right of Way packages.
- 2025 Budget includes: \$2,925,675 in funding for the project.
- Publish and RFP on Bidnet and through other means to begin getting interested contractors to bid on the project.

The project is progressing as planned, with necessary utilities, easements, and funding in place to move forward with construction.

The Town plans to break ground on the project in Spring of 2025. Once all granting agencies have determined the outcome of the Town's grant applications, the Town will solicit competitive bids from competent contractors.

Project Funding:

- \$1,010,592 CDOT's RMS Grant (Approved)
- \$872,825 CDOT's SRTS Grant (Awaiting Approval)
- Total Grant Funding: \$1,883,417
- \$111,000 from Water Utility Fund
- \$40,000 from Sidewalk Fund
 - Total Grants and Other Sources: **\$2,034,417** Estimated Project Cost: **\$2,925,675**
 - Total Sales Tax Capital Improvement Fund Balance & Other General Fund Sources: \$891,258

These estimates are intentionally higher than anticipated to allow for contingencies (unknown issues that may present during construction) and it is the Town's position that project cost proposals are lower than budgeted.



Water Capital Improvement Plan: Phase I

UPDATE: FULLY FUNDED, Construction Underway and RFPs to Publish

Project Update: Paonia Receives Approval for \$9.74 Million DWRF Loan for Infrastructure Improvements

The Town of Paonia is pleased to announce a significant milestone in its ongoing infrastructure improvement efforts. On **March 7, 2025**, the **Board of Directors of the Colorado Water Resources and Power Development Authority** formally approved the Town for a **Drinking Water Revolving Fund (DWRF) loan** totaling **\$9,744,000.00**.

This substantial funding package will support critical upgrades to the Town's drinking water system, including distribution system enhancements, water treatment improvements, and associated infrastructure modernization.

The total loan includes:

- **\$3,744,000.00** in **Leveraged Loan** funding (plus cost of issuance), which will receive a **subsidized market rate** following the Authority's bond sale;
- \$1,344,609.00 in Base Direct Loan funding at 1.50% interest over 20 years;
- \$1,655,391.00 in Bipartisan Infrastructure Law (BIL) General Supplemental Direct Loan funding, also at 1.50% interest over 20 years; and
- **\$3,000,000.00** in **BIL Principal Forgiveness (PF)**, reducing the Town's overall repayment obligation.

This financing structure allows Paonia to leverage low-interest borrowing and principal forgiveness opportunities, reducing the long-term burden on local ratepayers while advancing essential public health and infrastructure goals.

Loan Conditions and Next Steps

As a condition of the loan approval, the Town is required to ensure that utility user rates are set at levels sufficient to meet the Authority's **rate covenant** prior to the execution of the final loan agreement. The Town is actively evaluating its rate structure to ensure compliance with this requirement. During the April 8th, Board of Trustees meeting, the Town also plans to select a Bond Counsel which will help to ensure all the required documents are provided to the issuing authority and rate covenants are adequate to cover the loan.

It is important to note that portions of this funding—particularly the amounts allocated through BIL and Base programs—are **subject to adjustments** based on federal policies, procedures, and budgetary allocations. While unlikely, any significant change in available federal funding could require the loan package to be reconsidered by the Board. The loan agreement will include provisions that **hold the Authority harmless** for delays, cancellations, or changes due to federal funding shifts.

Impact and Strategic Value

This DWRF loan represents a strategic investment in the long-term resilience and reliability of Paonia's water infrastructure. It complements other ongoing efforts, including the **Safe Pathways for Paonia** project and associated grant-funded improvements, creating a coordinated approach to infrastructure development.

The Town is committed to maintaining transparent communication with residents and stakeholders as the project progresses. Regular updates will be provided as the Town moves toward final loan execution, begins design and construction, and



coordinates funding reimbursements. 2025 will prove to be the beginning of a period of investment in infrastructure and several capital improvement projects are scheduled to begin this year. To help Residents better track the progress of our ongoing projects, staff will begin creating a webpage on the Paonia website that will provide regular updates on all of the projects happening in our community. An updated Engineer's Preliminary Opinion of Cost for Phase 1 work is attached as **Attachment A – 333.23001_Water_CIP_Phase 1_Loan_App_Cost_Estimate.**

Status Update on the Water Capital Improvement Plan – Phase One, Two Million Gallon Tank Relining – Site Work

Project Overview: Phase I of the Water Capital Improvement Plan includes the remediation and relining of the interior walls of a two-million-gallon water tank. The project is critical for ensuring the continued functionality and safety of the Town's water infrastructure. The status of the project is described in detail in the Public Works Director's report on the project attached to this report.

Funding and Grants:

• **EIAF Grant:** The Town has received an Energy & Mineral Impact Assistance Program (EIAF) Tier II grant from the Department of Local Affairs (DOLA) in the amount of \$956,000. This grant will help fund the water tank relining project and is set to begin in April 2024 with an expiration date of October 31, 2025.

Disadvantaged Community Status: Based on the 2017-2021 ACS data, the Town of Paonia qualifies as a disadvantaged community. This designation allows the Town to potentially receive benefits such as reduced interest rates, a Design & Engineering Grant, and/or a portion of the loan as principal forgiveness, depending on funding availability.

Condensed Project Update: The 2MG Tank Relining Project – Site Work is nearing completion, with Earthworx approximately 98– 99% finished with their scope. Since mobilizing in January, the crew has made significant progress preparing the site for the temporary tank, navigating several unforeseen challenges.

- January 20–24, 2025: Earthworx mobilized, installed erosion control, removed fencing, and began excavation.
- January 25–February 7, 2025:
 - Crews encountered an unrecorded concrete structure, previously believed to have been removed per as-builts.
 - Change Order #1 was issued for demolition and haul-off of the sructure.

- Change Order #2 extended the raw waterline by 62 feet and added materials for the valve tie-in.
- An 8" hot tap was completed on the existing tank feed line.
- <u>February 7–24, 2025</u>:
 - A second contractor assisted with delivery line tie-in.
 - Change Order #3 addressed a misidentified steel line (originally marked as ductile iron).
 - Change Order #4 provided for a permanent repair on a leaking tank tap.
 - A break at the existing 1MG tank created urgency; the team quickly restored service using a Hymax swivel fitting, saving critical time.
- Change Order #5 includes construction of a new road/access to the temporary tank pad.

Remaining tasks include dirt removal, reseeding, and fence re-installation. Earthworx also continued hauling materials throughout for pad construction. Change Orders and the full Public Works update can be found attached to this report as **Attachment B – Tank Relining Change Orders 1-5 & PW Update**.

<u>Next Steps</u>:

- 1. Earthworx to finalize the site work with dirt removal, reseeding and fence re-installation.
- 2. Complete a competitive bidding process for the twomillion-gallon tank rehabilitation and relining project.
- 3. Finalize CWRDPA Loan and award the project to the lowest most responsive and responsible bidder.



Water Capital Improvement Plan: Phase I

Construction and Improvements Breaking Ground in 2025

Continued

Status Update on the Water Capital Improvement Plan – Phase One, Western Loop Replacement Project Report

Project Overview: The Town of Paonia is seeking approval to replace a critical section of its water distribution system, specifically the western loop waterline. The project aims to replace approximately 10,500 linear feet (LF) of steel pipe with more durable materials, including 12-inch PVC and 16-inch HDPE pipelines. The primary objectives include reducing nonrevenue water, enhancing operational efficiency, and rerouting the pipeline to primarily follow the right-of-way (ROW) for better management. This replacement is a key component of the Water Capital Improvement Plan (CIP), Phase One, and will help to inform the next phase(s) of the Water Capital Improvement Plan.

Project Update: Paonia West Waterline Replacement - 95% Design Phase

The Town of Paonia, in collaboration with RESPEC Engineering, continues to make steady progress on the West Waterline Loop Replacement Project, currently at the 90% design phase. A project coordination meeting was held on February 19, 2025, with key representatives from the Town and RESPEC in attendance.

Design Standards:

Final edits to the Water and Wastewater Standards are in progress. The Town Board will complete its review by March 11, 2025.

Survey & Easements:

Easement acquisition is nearly complete. Two properties remain: Kirby's property and an adjacent parcel. Surveying is expected to be completed within the week, after which contracts will be forwarded to the Town Attorney for review.

Geotechnical Work:

Geotechnical staking was scheduled for February 20, and bore sampling is confirmed for February 27, 2025. The Town will provide traffic control support.

Subsurface Utility Engineering (SUE):

Potholing is anticipated to begin in early March, and ongoing through April, including an additional pothole at PRV 9 where the PVC transitions to steel.

Hydraulic & Design Adjustments:

The Town is working to collect pressure data along O Road. RESPEC is actively updating the piping design near PRV 9 based on field conditions and SUE feedback.

Water Company Coordination:

A Roundtable meeting with consecutive system water companies is targeted for completion by the end of May 2025.

PRV Site Readiness:

The PRV 8 site appears acceptable pending final property owner confirmation. PRV repairs are scheduled by the end of March.

Ongoing Coordination:

Drawings have been delivered to previous Public Works' employee for assistance with utility coordination. Easement discussions with property owners are ongoing, with conceptual agreements nearly finalized.

Funding Details: The Town of Paonia was awarded a \$1,000,000 Energy and Mineral Impact Assistance Fund (EIAF) Tier II Grant to support the project. The total *estimated* project cost is \$5,152,828, with \$4,152,828 coming from a State Revolving Fund (SRF) loan through the Drinking Water Revolving Fund (DWRF) program.

Paonia West Waterline Replacement – To-Do List

Town of Paonia (Cory):

- Send pressure data from 0 Rd houses (test hydrant if needed)
- Get updates from Travis on SUE results (PRVs 8 & 9, clock, 0.5MG)
- Schedule potholing for early March
- Support easement agreements (2 properties remaining)
- Coordinate easement contracts with Town Attorney



Town of Paonia (Derek):

• Send meter pit info for 41169 Lamborn Dr. to RESPEC

Town of Paonia (Stefen & Cory):

 Finalize review/approval of Water & Wastewater Standards (by 3/11)

Town of Paonia (Stefen):

Host Water Company Roundtable (by 6/16)

Town of Paonia (General):

• Conduct PRV repairs (by 3/31)

RESPEC:

- Confirm geotech boring schedule (set for 2/27)
- Update piping design around PRV 9

Water Capital Improvement Plan: Phase I

Construction and Improvements Breaking Ground in 2025

Continued

Status Report: Water Capital Improvement Plan Phase One – Raw Water Metering Project – 60% Drawings

Project Overview: The Raw Water Metering Project is part of the Town of Paonia's Phase One of the Water Capital Improvement Plan. The project involves the installation of new monitoring systems to measure the flow and temperature of the Town's raw water sources. The system will enhance water management by providing real-time data for better flow delineation and identification of water loss due to pipe breaks.

Awaiting a Notice to Proceed from US Bureau of Reclamation for a \$250,000 WaterSMART Grant.

Estimated Costs:

• Raw Water Metering Improvements: \$584,200

Next Steps:

• Notice of Award has been given to Hemlock Consulting as the lowest, most responsive and responsible bidder to complete brush clearing for the Hydrogeological Study and subsequent Phase One – Raw Water Metering Project. We are awaiting a Notice to Proceed from the USBR in order to move forward with the project.

2025 ¹	Water Base Rate Residential	Water Base Rate Commercial	Water Usage C Ga	Charges per 1,000 Illons
Paonia In - Town	\$ 44.00	\$ 54.00		
Out of Town	\$ 54.75	\$ 71.50		
In-Town Population	n: 1,447 approx.			
Out of Town Popul	ation Served: 1,482	2 approx.		
Water Companies	Served: 23		Water is charge	d on a sliding scale
Out of Town Services: 632			the more volume	each customer uses,
Total Population Served: 2,929 approx.		κ.	the greater the co	ost to the customer.
	F C	'hase I - Dutcomes	Secure Store Deliver	
	P V	'hase II/III – Vater Smart Gran	A Sustainable † Water Future	



Wastewater Project Needs Assessment, Aeration In-Kind Replacement, and CDPHE Update on General Permits

Project Update: Wastewater Project Needs Assessment (PNA)

The Town of Paonia continues advancing efforts to update its Wastewater Project Needs Assessment (PNA) for submission to the Water Pollution Control Revolving Fund (WPCRF) program. A recent coordination meeting with project engineers reaffirmed the importance of performing a comprehensive condition assessment of the entire sewer system.

Key Recommendations & Next Steps:

Systemwide Condition Assessment:

It was recommended that the Town contract with Sewer AI to assess the entire sewer system. This updated data will directly support both the PNA and long-term capital improvement planning.

GIS Mapping Support:

Updated sewer system maps created from the Town's GIS database have been provided to support PNA development. Any corrections or updates should be sent to the engineering team promptly.

Requested Documentation:

To complete the PNA, the following items are being assembled by staff:

- A Written Delegation of Operator Duties
- A **20-year Cash Flow Projection** for the wastewater utility *This is identical to the cashflow analysis completed for water, but specific to wastewater. Once projects are identified, and estimates provided, a cashflow analysis can be completed.*
- Supporting documents, including:
 - CCTV inspection results (existing or to be collected) *This still needs to be collected and completed.*
 - Wastewater and water flow data *This data has been provided, but will need to be collected and reported to RESPEC as months progress.*
 - Sewer billing records *This data has been provided, but will need to be collected and reported to RESPEC as months progress.*
 - Any documentation of system deterioration (e.g., clay pipe fragments at the WWTP, I&I testing results if available)



Wastewater Treatment Facility (WWTF) – In-Kind Replacement Project

The Town is moving forward with an **in-kind replacement** project at the Wastewater Treatment Facility (WWTF) to address ongoing equipment failures in **Lagoon 1**.

Background

- The Paonia WWTF, originally approved in 2005 with a capacity expansion in 2007, has the following design capacities:
 - Hydraulic Capacity: 0.495 MGD (maximum monthly average)
 - Organic Capacity: 560 lbs. BOD₅/day
- The facility currently discharges to the **North Fork of the Gunnison River**, under an active discharge permit.

Current Challenge

- **Aeration equipment** in Lagoon 1 has experienced repeated failures, with only two of four surface aerators functional due to equipment age and long replacement lead times.
- Maintaining **adequate dissolved oxygen (DO)** levels and mixing is critical for the biological treatment process and regulatory compliance.

Project Scope

- The Town will replace the **four aging Aeromix surface aerators** in Lagoon 1 with **four new Aquaturbo AER-AS Floating Aerators**:
 - Two 20 HP units (Lagoon 1, Cell 1)
 - **Two 15 HP units** (Lagoon 1, Cell 2)
 - \circ Installation is scheduled for April 2025

Expected Outcomes

- Improved oxygen transfer efficiency:
 - **Existing aerators**: ~ 1241 lbs O_2 /day
 - New aerators: $\sim 2081 \text{ lbs } O_2/\text{day}$
- Maintains the same **mixing power**: 70 HP per lagoon
- Enhanced performance in **BOD and nitrogen removal**, better supporting compliance with existing design and permit requirements.

Financial & Operational Benefits

- Replacing the aging aerators reduces 0&M costs and minimizes operational disruptions due to equipment failure.
- The upgraded system is expected to provide more reliable treatment performance and energy efficiency. This project reflects the Town's continued investment in maintaining core utility infrastructure and ensuring regulatory compliance.

The full site location report and application to CDPHE is attached to this report as: **Attachment C 22.12 Site Location Report_Town of Paonia & Application.**



CDPHE Enforcement Discretion for COG591000 Permits

The Town of Paonia has received a memorandum from the Colorado Department of Public Health and Environment (CDPHE) regarding a temporary pause on enforcement for certain provisions of the COG591000 general permit, which governs domestic wastewater discharges to sensitive receiving waters.

- Enforcement Discretion Granted:
 - CDPHE will not initiate enforcement actions for the following permit provisions for COG591000-certified facilities until further notice:
- Effluent Limits and Monitoring Requirements:
 - No enforcement for exceeding effluent limits currently in the COG591000 certification.
 - o No enforcement for failure to monitor or report on Whole Effluent Toxicity (WET) testing.
 - However, facilities must continue monitoring and reporting parameters listed in prior permits (e.g., BOD₅, TSS, chlorine, pH, oil & grease).
- <u>Compliance Schedules and Special Studies</u>:
 - No enforcement for missed compliance schedule milestones (e.g., meeting ammonia or nitrogen standards).
 - No enforcement for failure to complete special studies related to groundwater protection or inflow and infiltration.
 - Note: Report-only requirements (e.g., outfall coordinates) must still be met.
- <u>Operational Requirements Remain in Effect</u>:
 - Permittees, including the Town of Paonia, are expected to continue properly operating and maintaining wastewater facilities and remain compliant with key discharge standards under Regulation 62, specifically:
 - BOD₅
 - Total Suspended Solids (TSS)
 - Total Residual Chlorine (where applicable)
 - pH
 - Oil and Grease
- <u>Exclusions & Limitations</u>:
 - This temporary discretion does not apply to permittees currently under formal enforcement actions (e.g., Notice of Violation or Clean-Up Order).
 - CDPHE retains the right to revise or withdraw this policy at any time and reserves the right to pursue enforcement where necessary.

Next Steps:

CDPHE is working toward a more permanent solution and plans to engage directly with permittees. Staff will continue monitoring correspondence from CDPHE and coordinate as needed to ensure Paonia remains in good standing.

The full memorandum from CDPHE is attached to this report as: Attachment D WQCD Notification - Temporary Discretion for COG591.

EXHIBIT "A"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel of land being described in that Warranty Deed recorded as Reception No. 737068, herein after referred to as the 'Jacobson Parcel', County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence N. 89°31'54" W. a distance of 523.51 feet to the Northeast corner of said Jacobson Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 89°12'00" W. a distance of 11.50 feet along the Northern line of said Jacobson Parcel;
- 2. Thence S. 00°42'00" W. a distance of 33.00 feet;
- 3. Thence S. 89°12'00" E. a distance of 11.50 feet to a point on the Eastern Line of said Jacobson Parcel;
- 4. Thence N. 00°42'00" E., along the Eastern line of said Jacobson Parcel, a distance of 33.00 feet to the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 380 sq. ft. (0.009 acres), more or less.

For and on Behalf of SGM, Inc.





	Job No.	2013-471.014	
Temporary Construction Easement Paonia, Colorado	Drawn by:	MH	Exhibit A
	Date:	12/05/2024	
	Approved:	JLW	
	File:	ExCon-Easement	



Page No.

1

of 2



EXHIBIT "B"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel described in that Warranty Deed recorded as Reception No. 688758, herein referred to as the 'Jacobson Parcel', County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 77°34'20" W. a distance of 537.66 feet to the Southeast corner of said Jacobson Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 00°48'00" E., along the Eastern line of said Jacobson Parcel, a distance of 59.00 feet ;
- 2. Thence N. 89°12'00" W. a distance of 11.00 feet;
- 3. Thence S. 00°48'00" W. a distance of 59.00 feet to a point on the Southern Line of said Jacobson Parcel;
- 4. Thence S. 89°12'00" E., along the Southern line of said Parcel, a distance of 11.00 feet to the Southeast corner of said Jacobson Parcel, the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 649 sq. ft. (0.015 acres), more or less.

For and on Behalf of SGM, Inc.





Temporary Construction Easement Paonia, Colorado	Job No.	2013-471.014
	Drawn by:	MH
	Date:	12/05/2024
	Approved:	JLW
	File:	ExCon-Easement

	Page No
Exhibit B	1
	Of 2



EXHIBIT "C"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel of land being described in that Warranty Deed recorded as Reception No. 682718, herein after referred to as the 'Briggs Parcel', in the County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 77°34'20" W. a distance of 537.66 feet to the Northeast Corner of said Briggs Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 89°12'00" W., along the Northern line of said Briggs Parcel, a distance of 11.00 feet;
- 2. Thence S. 00°48'00" W. a distance of 35.00 feet;
- 3. Thence S. 89°12'00" E. a distance of 11.00 feet to a point on the Eastern Line of said Briggs Parcel;
- 4. Thence N. 00°48'00" E., along the Eastern line of said Briggs Parcel, a distance of 35.00 feet to the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 385 sq. ft. (0.009 acres), more or less.

For and on Behalf of SGM, Inc.





Temporary Construction Easement Paonia, Colorado	Job No.	2013-471.014
	Drawn by:	MH
	Date:	12/05/2024
	Approved:	JLW
	File:	ExCon-Easement

	Page No.
Exhibit C	1
	Of 2



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EXHIBIT "D"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel of land being described in the Quit Claim Deed recorded as Reception No. 603191, herein after referred to as the 'Wesley Parcel', in the County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 66°31'18" W. a distance of 574.17 feet to a point on the Eastern line of said Wesley Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 00°48'00" E., along the Eastern line of said Wesley Parcel, a distance of 25.00 feet;
- 2. Thence N. 89°12'00" W. a distance of 11.00 feet;
- 3. Thence S. 00°48'00" W. a distance of 25.00 feet;
- 4. Thence S. 89°12'00" E. a distance of 11.00 feet to the Eastern line of said Wesley Parcel, the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 275 sq. ft. (0.006 acres), more or less.

For and on Behalf of SGM, Inc.





	Temporary Construction Easement Paonia, Colorado	Job No.	2013-471.014
		Drawn by:	MH
		Date:	12/05/2024
		Approved:	JLW
		File:	ExCon-Easement

	Page No.
Exhibit D	1
	Of 2



EXHIBIT "E"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel being described in that Warranty Deed recorded as Reception No. 579182, herein referred to as the 'Wilmore Parcel', in the County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 54°09'35" W. a distance of 652.31 feet to a point on the Eastern line of said Wilmore Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 00°48'00" E., along the Eastern line of said Wilmore Parcel, a distance of 30.00 feet;
- 2. Thence N. 89°12'00" W. a distance of 11.00 feet;
- 3. Thence S. 00°48'00" W. a distance of 30.00 feet:
- 4. Thence S. 89°12'00" E. a distance of 11.00 feet to the Eastern line of said Wilmore Parcel, the TRUE POINT OF **BEGINNING:**

The above described Temporary Construction Easement contains 330 sq. ft. (0.007 acres), more or less.

For and on Behalf of SGM, Inc.





Temporary Construction Easement Paonia, Colorado	Job No.	2013-471.014	Г
	Drawn by:	MH	
	Date:	12/05/2024	
	Approved:	JLW	
	File:	ExCon-Easement	

	Page No.
Exhibit E	1
	of 2

2

Town of Paonia/014 - 5thStGrandAve/H-Dwgs/Surv/Dwgs/BaseMaps/ExCon-Easement.dwg \2013\2013-471



EXHIBIT "F"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, being situated in that parcel being described in that Warranty Deed recorded as Reception No. 602931, herein after referred to as the 'Parena Parcel', in the County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 49°28'02" W. a distance of 697.07 feet to a point on the East line of said Parena Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence N. 89°12'00" W. a distance of 12.00 feet;
- 2. Thence S. 00°48'00" W. a distance of 4.88 feet to the South line of said Parena Parcel;
- 3. Thence S. 88°46'33" E. along the South Line of said Parena Parcel a distance of 12.00 feet to the Southeast corner of said Parena Parcel;
- 4. Thence N. 00°48'00" E. along the East line of said Parena Parcel a distance of 4.97 feet to the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 59 sq. ft. (0.001 acres), more or less.

For and on Behalf of SGM, Inc.





Temporary Construction Easement Paonia, Colorado	Job No.	2013-471.014
	Drawn by:	MH
	Date:	12/05/2024
	Approved:	JLW
	File:	ExCon-Easement

	Page No.
Exhibit F	1
	Of 2



EXHIBIT "G"

PROJECT NUMBER: RMS M035-003 PROJECT CODE: 25364 DATE: December 5, 2024

Description of Temporary Construction Easement

A Temporary Construction Easement lying within the NE1/4 of Section 6, Township 14 South, Range 91 West of the 6th Principal Meridian, and being situated in that parcel being described in the Warranty Deed recorded at Reception No. 752177 and herein after referred to as the 'GBD Solutions LLC Parcel', the County of Delta, State of Colorado, said Temporary Construction Easement being more particularly described as follows:

COMMENCING at the E 1/16 Corner common to Section 6, Township 14 South, Range 91 West and Section 31, Township 13 South, Range 91 West, a found Rebar and 2 1/2" Brass Cap marked "KING, E 1/16, 31-6, PLS 1456", from whence the Northeast Corner of said Section 6, a found Rebar and 2 1/2" USGLO Brass Cap marked "S31, S32, T13S, R91W, S6, S5, T14S, R91W, 1908", bears S. 89°05'26" E. (Basis of Bearings) a distance of 1234.66 feet, thence S. 72°19'33" W. a distance of 425.28 feet to a point on the Southeast line of said GBD Solutions LLC Parcel, the TRUE POINT OF BEGINNING;

- 1. Thence S. 47°52'20" W., along the Southeastern line of said GBD Solutions LLC Parcel, a distance of 30.30 feet;
- 2. Thence N. $50^{\circ}12'46''$ W. a distance of 3.91 feet;
- 3. Thence N. 39°47'14" E. a distance of 30.00 feet;
- 4. Thence S. 50°12'38" E. a distance of 8.17 feet to a point on the Southeastern line of said GBD Solutions LLC Parcel, the TRUE POINT OF BEGINNING;

The above described Temporary Construction Easement contains 182 sq. ft. (0.004 acres), more or less.

For and on Behalf of SGM, Inc.





		Job No.	2013-471.014
	Temporary Construction Easement Paonia, Colorado	Drawn by:	MH
		Date:	12/05/2024
		Approved:	JLW
		File:	ExCon-Easement

	Page No.
Exhibit G	1
	Of 2



Engineer's Town of Paol W0333.230 Note: Engine 4	s Preliminary Opinion of Cost nia CIP Phase I Water System Improvements - Summary 07 eer's Opinion of Probably Construction Cost for 2-MG Tank Relining provided b	by SGM and qualified as AACE Class
ltem #	Item Description	CIP Phase I Cost Estimate - 03/25/2025
1	Raw Water Metering Improvements	\$541,497
2	2-MG Tank Relining	\$2,149,500
3	West Loop Waterline Replacement	\$5,152,828
	Construction Sub Total	\$7,843,825
	10-20% Contingency	\$1,568,765
	Construction Total	\$9,412,590
	Design Engineering and Permitting	\$700,000
	Construction Engineering and Inspections, CA/CM	\$400,000
	Total Project Cost	\$10,512,590

Since the Engineer has no control over the cost of labor, materials or equipment, or over the Contractor's method of determining prices, or over competitive bidding or market conditions, their opinions of probable construction cost provided for herein are made on the basis of their experience and qualifications. These opinions represent their best judgement as a design professional familiar with the construction industry. However, the Engineer cannot and does not guarantee that proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

SECTION 00 69 50 CHANGE ORDER

Date of Issuance: 01/29/2025	Effective Da	te: 01/29/2025	
Project: 2MG Tank Rehabilitation, Owner: Tov Site Civil	vn of Paonia	Owner's Contract No.:	
Contract:		Date of Contract:	
Contractor: Earthworx Excavation		Engineer's Project No.:2013-471.013	
The Contract Documents are modified as follo	ws upon execution o	of this Change Order:	
Description: Demolition and haul off of old concrete backwash	tank. As-builts indicat	ed backwash tank had been removed.	
Attachments (list documents supporting chan See attached documents from Earthworx Excavat	ge): tion.		
CHANGE IN CONTRACT PRICE:		CHANGE IN CONTRACT TIMES:	
Original Contract Price: \$	Original Contract Substantial cor Ready for final	Times: Working days Calendar days npletion (days or date): <u>April 15, 2025</u> payment (days or date): <u>May 1, 2025</u>	
[Increase] [Decrease] from previously approved Change Orders No to No:	[Increase] [Decrease] from previously approved Change Orders No to No:		
	Substantial con	npletion (days):	
\$0.00	Ready for final	payment (days):	
Contract Price prior to this Change Order:	Contract Times p Substantial cor	rior to this Change Order: npletion (days or date): <u>April 15, 2025</u>	
\$ <u>336,278.15</u>	Ready for final	payment (days or date): <u>May 1, 2025</u>	
[Increase] [Decrease] of this Change Order:	[Increase] [Decre Substantial cor	ease] of this Change Order: npletion (days or date):	
\$12,205.00	Ready for final	payment (days or date):	
Contract Price incorporating this Change Order:	Contract Times w Substantial cor	vith all approved Change Orders: npletion (days or date): <u> </u>	
\$348,483.15	Ready for final	payment (days or date): <u>May 1, 2025</u>	
RECOMMENDED: ACC By:By:	Owner (Authorized Si	ACCEPTED: By: Ganature) Contractor (Authorized	

_	· · · · · · · · · · · · · · · · · · ·
	Contractor (Authorized
_	Date:

Date:

Date: _____

Date: 01/29/2025

Approved by Funding Agency (if applicable):

Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute.

00 69 50-1

No. <u>1</u>

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Earthworx Excavation 68204 Kinikin Road Montrose, CO 81403 US +19709750234 mike.earthworx@outlook.com



Estimate

ADDRESS Cory Heiniger Town of Paonia

ESTIMATE # 1487 DATE 01/27/2025 EXPIRATION DATE 02/10/2025

PROJECT ADDRESS 2 MG tank civil site	CUSTOMER JOB # Town of Paonia		COMPLETION DATE 2-3 days	
ACTIVITY		QTY	RATE	AMOUNT
Earthworx Excavation:Change Order Remove and haul off unforeseen con structure (15'x25'x 5') 1' thick floor. Jack hammer structure and truck to T Paonia yard All labor and trucking included	crete ⁻ own of	1	12,205.00	12,205.00
Thank You For Giving Us The Opportunity To E A Great Day!	Bid Your Project. Have	TOTAL		\$12,205.00

Accepted By

Accepted Date

SECTION 00 69 50 CHANGE ORDER

No. <u>2</u>

Date of Issuance:	02/06/2025	Effective Date:	02/06/2025
Project: 2MG Tank Site Civil	Rehabilitation,	Owner: Town of Paonia	Owner's Contract No.:
Contract:			Date of Contract:
Contractor: Earthwo	orx Excavation		Engineer's Project No.:2013-471.013
The Contract Doc	uments are mod	lified as follows upon execution of t	his Change Order:

Owner requested change order to install additional pipe and fittings on existing spring (raw) water line. Pipe to be removed was old SDR piping and was replaced with C900 PVC. This eliminates potential maintenance issues in the future.

Attachments (list documents supporting change):

See attached documents from Earthworx Excavation.

CHANGE IN CONTRACT PRIC	CHANGE IN CONTRACT TIMES:
Original Contract Price:	Original Contract Times: 🛛 🗌 Working days 🛛 Calendar days
	Substantial completion (days or date): <u>April 15, 2025</u>
\$ <u>336,278.15</u>	Ready for final payment (days or date): <u>May 1, 2025</u>
[Increase] [$\frac{1}{2}$ [$\frac{1}{2}$ [$\frac{1}{2}$ [$\frac{1}{2}$] from previously approximate of the previously approximate of the previous of the prev	roved [Increase] [Decrease] from previously approved Change Orders No to No:
	Substantial completion (days):
\$12,205.00	Ready for final payment (days):
Contract Price prior to this Change Order	Contract Times prior to this Change Order:
	Substantial completion (days or date): <u>April 15, 2025</u>
\$ <u>348,483.15</u>	Ready for final payment (days or date): <u>May 1, 2025</u>
[Increase] [Decrease] of this Change Ord	r: [Increase] [Decrease] of this Change Order:
	Substantial completion (days or date):
\$11,784.00	Ready for final payment (days or date):
Contract Price incorporating this Change	Order: Contract Times with all approved Change Orders:
	Substantial completion (days or date): <u>April, 15, 2025</u>
\$ <u>360,267.15</u>	Ready for final payment (days or date): <u>May 1, 2025</u>
RECOMMENDED	ACCEPTED: ACCEPTED:
By:	Ву: Ву:
Engineer (Authorized Signature)	Owner (Authorized Signature) Contractor (Authorized
Date: 02/06/2025	Date: Date:
Approved by Funding Agency (if applicab	ə):
	Date:

A. GENERAL INFORMATION

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Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Earthworx Excavation 68204 Kinikin Road Montrose, CO 81403 US +19709750234 mike.earthworx@outlook.com



Estimate

ADDRESS

Cory Heiniger Town of Paonia

ESTIMATE # 1489 DATE 01/31/2025

PROJECT ADDRESS 2MG Tank	CUSTOME Town of Pa	R JOB # onia	
ACTIVITY	QTY	RATE	AMOUNT
Earthworx Excavation:Change Order Excavate and install 8" C900 an additional 62' to new tie in point	62	143.33	8,886.46
Invoiced at same LF price as original contract			
All labor and material included			
Earthworx Excavation:Change Order Additional 8" fittings for angle alignment at tie in.	1	2,897.54	2,897.54
Thank You For Giving Us The Opportunity To Bid Your Project. Have A Great Day!	TOTAL	\$	11,784.00

Accepted By

Accepted Date

SECTION 00 69 50 CHANGE ORDER

Date of Issuance: 02/21/2025	Effective Date: 02/21/2025		
Project: 2MG Tank Rehabilitation, Site Civil	Owner: Town of Paonia	Owner's Contract No.:	
Contract:		Date of Contract:	
Contractor: Earthworx Excavation		Engineer's Project No.:2013-471.013	
The Contract Documents are more Description:	dified as follows upon execution of	this Change Order:	
Deduct of bid item #3 insertion valv	e Changed to cut in valve due to as-t	uilts being wrong on nine material. DIP vs steel	

Deduct of bid item #3 insertion valve. Changed to cut in valve due to as-builts being wrong on pipe material, DIP vs steel. Change order also includes 2-inch bypass to keep water flowing from tank while cut in valve is being installed.

Attachments (list documents supporting change):

See attached documents from Earthworx Excavation.

CHANGE IN CONTRACT PR	CHANGE IN CONTRACT TIMES:			
Original Contract Price:		Original Contract Times:	Working day	/s 🛛 Calendar days
		Substantial completion (c	days or date):	April 15, 2025
\$ <u>336,278.15</u>		Ready for final payment	(days or date):	May 1, 2025
[Increase] [Decrease] from previously a Change Orders No. <u>1</u> to No. <u>2</u> :	approved	[Increase] [Decrease] from No:	n previously approv	ved Change Orders
		Substantial completion (c	lays):	
\$23,989.00		Ready for final payment ((days):	
Contract Price prior to this Change Orc	ler:	Contract Times prior to this	Change Order:	
		Substantial completion (c	days or date):	April 15, 2025
\$ <u>360,267.15</u>		Ready for final payment	(days or date):	<u>May 1, 2025</u>
[Increase] [Decrease] of this Change C)rder:	[Increase] [Decrease] of thi	s Change Order:	
		Substantial completion (c	days or date):	
\$ <u>7,631.13</u>		Ready for final payment	(days or date):	
Contract Price incorporating this Chang	ge Order:	Contract Times with all approved Change Orders:		
		Substantial completion (c	days or date):	<u>April, 15, 2025</u>
\$367,898.28		Ready for final payment	(days or date):	<u>May 1, 2025</u>
	ACCE	PTED:	ACCEPTE	D:
By:	By:	ASW	Ву:	
Engineer (Authorized Signature)	Ow	her (Authorized Signature)	Contra	actor (Authorized
Date: 02/21/2025	_ Date: 0	2/24/2025	Date:	
Approved by Funding Agency (if applic	able):			
			Date:	

No. <u>3</u>

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Earthworx Excavation 68204 Kinikin Road Montrose, CO 81403 US +19709750234 mike.earthworx@outlook.com



ESTIMATE # 1496

EXPIRATION DATE 03/06/2025

DATE 02/20/2025

Estimate

ADDRESS

Cory Heiniger Town of Paonia

PROJECT ADDRESS

Paonia 2MG Tank

CUSTOMER JOB

Tank of Paonia

I ANK OF FAUNIA

ACTIVITY	QTY	RATE	AMOUNT
Earthworx Excavation:Change Order Install 8" line from tank to new11.5 fitting as discussed	1	44,390.00	44,390.00
Weld flange on existing steel pipe, install 8" Kennedy gate valve, install C900 to new 11.5 fitting			
Tap existing steel pipe twice to install 2" pure core by pass line with 2 corp stops			
Additional 20' each for 8" and 12" C900 for risers at new pad elevation			
All labor and material included			
Earthworx Excavation:Change Order Line Item #3 of original bid, 8" Insertion valve	1	-36,758.87	-36,758.87
Solid rock will be negotiated if encountered at time of occurrence	TOTAL		\$7,631.13
50% deposit required for materials and scheduling.			
Thank You For Giving Us The Opportunity To Bid Your Project. Have A Great Day!	•		

Accepted By

Accepted Date

SECTION 00 69 50 CHANGE ORDER

		No. 4	
Date of Issuance: 02/21/2025	Effective Da	ate: 02/21/2025	
Project: 2MG Tank Rehabilitation, Owner: To Site Civil	own of Paonia	Owner's Contract No.:	
Contract:		Date of Contract:	
Contractor: Earthworx Excavation		Engineer's Project No.:2013-471.013	
The Contract Documents are modified as foll	ows upon execution	of this Change Order:	
Description:			
Owner directed change order. Contractor to we	d shut sample tap on s	ide of existing storage tank while installing cut in	
valve.			
Attachments (list documents supporting cha See attached documents from Earthworx Excav	nge): ation.		
CHANGE IN CONTRACT PRICE:		CHANGE IN CONTRACT TIMES:	
Original Contract Price:	Original Contract Substantial cor	t Times: Working days Calendar days mpletion (days or date): April 15, 2025	
\$ <u>336,278.15</u>	Ready for final	payment (days or date): <u>May 1, 2025</u>	
[Increase] [$\frac{Decrease}{1}$ from previously approved Change Orders No. <u>1</u> to No. <u>3</u> :	[Increase] [Decre No to No.	ease] from previously approved Change Orders	
	Substantial cor	npletion (days):	
\$31,620.13	Ready for final	payment (days):	
Contract Price prior to this Change Order:	Contract Times p	prior to this Change Order:	
\$367,898.28	Substantial cor Ready for final	mpletion (days or date): <u>April 15, 2025</u> payment (days or date): <u>May 1, 2025</u>	

[Increase] [Decrease] of this Change Order:

\$_____1,000.00

Contract Price incorporating this Change Order:

\$	368,898,28	Substantial completion (days or date): <u>April, 15, 2025</u> Ready for final payment (days or date): May 1, 2025		
RECOMMENDED: By: Engineer (Aut Date:02/21/20	horized Signature)	ACCEPTED: By: Owner (Authorized Signature) Date: 02/24/2025	ACCEPTED: By: Contractor (Authorized	
Approved by Fundi	ng Agency (if applicable):	Date:	

[Increase] [Decrease] of this Change Order:

Contract Times with all approved Change Orders:

Substantial completion (days or date):

Ready for final payment (days or date):

Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute.

00 69 50-1

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Earthworx Excavation 68204 Kinikin Road Montrose, CO 81403 US +19709750234 mike.earthworx@outlook.com



Estimate

ADDRESS

Cory Heiniger Town of Paonia

ESTIMATE # 1497 DATE 02/20/2025 EXPIRATION DATE 03/06/2025

PROJECT ADDRESS

Paonia 2MG Tank

CUSTOMER JOB # Tank of Paonia Change Order #4

ACTIVITY	QTY	RATE	AMOUNT
Earthworx Excavation:Change Order Includes Tap Master to repair and abandon 2- 1.5 valves currently leaking (per Cory)	1	1,000.00	1,000.00
Solid rock will be negotiated if encountered at time of occurrence	TOTAL		\$1,000.00
50% deposit required for materials and scheduling.			
Thank You For Giving Us The Opportunity To Bid Your Project. Hav A Great Day!	e		

Accepted By

Accepted Date
SECTION 00 69 50 CHANGE ORDER

Date of Issuance: 03/12/2025		Effective Date:	03/12/2025		
Project: 2MG Tank Rehabilitation, Site Civil	Owner: Town o	of Paonia	Owner's Contract No.:		
Contract:			Date of Contract:		
Contractor: Earthworx Excavation		-	Engineer's Project No.:2013-471.013		
The Contract Documents are modi Description:	fied as follows	upon execution of t	his Change Order:		
Construct new road/access to new ta	nk pad.				
Attachments (list documents supp See attached documents from Earthy	orting change) vorx Excavation	:			
CHANGE IN CONTRACT P	RICE:	CI	HANGE IN CONTRACT TIMES:		
Original Contract Price:		Original Contract Tir Substantial compl	nes: Working days Calendar days etion (days or date):April 15, 2025		
\$336,278.15	5	Ready for final payment (days or date): <u>May 1, 2025</u>			
[Increase] [Decrease] from previously Change Orders No. <u>1</u> to No. <u>4</u> :	approved	[Increase] [Decrease] No to No	e] from previously approved Change Orders :		
		Substantial comple	etion (days):		
\$32,620.13	<u>3</u>	Ready for final pay	yment (days):		
Contract Price prior to this Change O	rder:	Contract Times prior Substantial completion	r to this Change Order: etion (days or date): April 15, 2025		
\$368,898.28	3	Ready for final page	yment (days or date): <u>May 1, 2025</u>		
[Increase] [Decrease] of this Change	Order:	[Increase] [Decrease	e] of this Change Order:		
0 ())))))))))))))))))		Substantial compl	etion (days or date):		
\$4,000.00	<u>)</u>	Ready for final pay	yment (days or date):		
Contract Price incorporating this Cha	nge Order:	Contract Times with Substantial compl	all approved Change Orders: etion (davs or date): April. 15, 2025		
\$372,898.28	3	Ready for final pay	yment (days or date): <u>May 1, 2025</u>		
RECOMMENDED: By: Engineer (Authorized Signature)	AC <u>CE</u> By: Ow	TED:	ACCEPTED: By: Attractor (Authorized		
Date: 03/12/2025	Date: _	3/14/2025	Date: 3-12-25		
Approved by Funding Agency (if appl	icable):		Date:		

EJCDC C-695 Change Order Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute. 00 69 50-1

Temporary Tank Pad Project Update

Date Range: January 20, 2025 - February 24, 2025

Work Summary:

January 20-24, 2025:

Earthworx mobilized on-site and began initial work on the temporary tank pad. During this period, they installed erosion control measures, removed the necessary fencing, and began excavation activities.

January 25-February 7, 2025:

While excavating, Earthworx encountered an unrecorded concrete structure that, according to the Town's as-builts, was previously removed. In reality, it had been abandoned in place with partially collapsed walls (see attached photo). During this time, Change Order #2 was issued to account for a 62-foot extension of the raw waterline and additional materials required to tie into the valve, including materials for additional thrust blocks. The crew also exposed the feed line to the existing tank and completed an 8" hot tap (photo attached).





February 7-24, 2025:

A second contractor joined the site to assist with the delivery line tie-in. Due to inaccuracies in the as-builts, another change order was necessary after discovering that a line marked as ductile iron was actually steel. This crew also performed a more permanent repair on the existing tank tap leak (Change Order #4 - see photo). With materials for Change Order #3 now on-site, Earthworx installed

1-million-gallon tank (photo attached). This emergency created a more urgent schedule, as the 2" bypass could not keep up with system demand in addition to the new break.





Earthworx, the hot tap crew, and Public Works staff worked quickly to repair the break and complete the valve tie-in (photos of welding work attached). Fortunately, the Town had a Hymax swivel joint fitting available, which allowed us to reduce welding time by approximately six hours and save an additional hour in final connections (photo of Hymax fitting included). This pivot in approach significantly minimized downtime.







Earthworx has also installed additional line from the new valves to the pad area. Public Works will handle the final extension to the precise location during the next phase of the project.

Current Project Status: Earthworx is approximately 98-99% complete with the scope of work.

Remaining tasks include:

- Final dirt removal from the adjacent field
- Reseeding disturbed areas
- Fence re-installation

Throughout all date ranges, Earthworx also continued hauling material for the pad construction.

Acknowledgments:

Public Works would like to extend our appreciation to the Paonia Police Department for capturing and sharing overhead drone footage of the site.







TOWN OF PAONIA

WASTEWATER TREATMENT FACILITY LAGOON #1 AERATOR REPLACEMENT

SITE LOCATION APPLICATION REPORT Section 22.12 IN-KIND REPLACEMENT



PREPARED BY James Starnes, PE Peter Clarkson, El

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PREPARED FOR Town of Paonia PO Box 460 Paonia, CO 81428

APRIL 2025

i. RSI-W0333.25009



TABLE OF CONTENTS

1.0	EXISTI	NG WASTEWATER TREATMENT INFORMATION	. 1
	1.1	Design Approval Capacities	1
	1.2	Existing Treatment Process	1
2.0	IN-KI	ND REPLACEMENT DETAILS	. 1
	2.1	Project Description	1
	2.2	Aeration/Mixing Equipment	2

LIST OF FIGURES

FIGURE	PAGE
Figure 2-1.Left: Schematic of Motor and Blower. Right: Image of Aeromix Systems Aerator Deployed in Water.	2
Figure 2-2. Left: Schematic of AER-AS Floating Aerator. Right: Floating Aerator Deployed in Water.	3
Figure 2-3. Schematic AER-AS Floating Aerator Mixing/Aeration Mechanism	3

LIST OF APPENDICES

Appendix A – Site Location Application Form Appendix B – Town of Paonia discharge permit Appendix C – Equipment Specifications

ii.



1.1 DESIGN APPROVAL CAPACITIES

The existing site location application for the Town of Paonia Wastewater Treatment Facility (No. 4781) was approved on April 7, 2005. A request to extend the approval period for the site location application was approved on May 5, 2006. A site location amendment (No. 4781) was approved on August 20, 2007, to increase the hydraulic capacity of the WWTF. Current design approval capacities:

- Hydraulic Design Capacity 0.495 MGD (maximum monthly average)
- Organic Design Capacity 560 lbs. BOD₅/day

The WWTF discharges to the North Fork of the Gunnison River, refer to the Town of Paonia's discharge permit in **Appendix B** for more information.

1.2 EXISTING TREATMENT PROCESS

The WWTF processes include:

- / Headworks with manual cleaned bar screen and ultrasonic flow meter/totalizer
- I Two aerated lagoons operating in parallel, each lagoon separated in the middle by a baffle curtain and aerated by floating surface aerators – two (2) aerators per cell, four (4) aerators per lagoon.
- / Polishing Pond
- / Disinfection via chlorination followed by dechlorination

In-Kind Replacement Equipment: The equipment replaced by this in-kind site location application are the four (4) floating surface aerators in the first lagoon. The surface aerators function to increase dissolved oxygen concentrations in the water to promote biological treatment and to mix the water.

2.0 IN-KIND REPLACEMENT DETAILS.

2.1 PROJECT DESCRIPTION

The Town employs surface aerators on both lagoons to mix and aerate for treatment. The existing model of surface aerator is an Aeromix System Aerator from Aeromix Systems Inc. Aeromix Systems' aeration and mixing assets were later acquired by Newterra and the Aeromix System Aerator was renamed the Tornado Aspirator. Existing aeration equipment fails due to wear and tear at a frequency that is financial and operationally burdensome. Only two surface aerators were operational at the time of this report due to lead times associated with existing equipment and O&M requirements. Existing aeration equipment in Lagoon 1 will be replaced as soon as possible with proposed new surface aerators called Aquaturbo AER-AS Floating Aerators.



1



With the existing aerators in Lagoon 1 failing, it is difficult to maintain sufficient mixing and a sufficient concentration of dissolved oxygen (DO) in the lagoons, which is critical for biological aerobic treatment of wastewater. The replacement of the failing aerators will promote adequate levels of DO and mixing so that the plant can continue to treat for the removal of BOD and nitrogen, and maintain compliance with the applicable site location, design, and permit. The Town of Paonia will purchase four new AER-AS Floating Aerators to replace all dysfunctional existing aeration equipment in Lagoon 1. The town will purchase two 20 HP aerators (Lagoon 1, Cell 1) and two 15 HP aerators (Lagoon 1, Cell 2). The date of deployment for the new aerators will be April 2025.

The existing aerators in Lagoon 2 will continue to be utilized.

2.2 AERATION/MIXING EQUIPMENT

Existing Equipment: The existing Aeromix System Aerator includes a motor mounted on a blower tube. The system floats on a pontoon structure. The size of the motor tapers through the process. Refer to **figure 2-1** and relevant equipment specifications below:

- / Size: 72 in L x 70 in W
- / Power: 15-20HP (70hp Total)
- / Aeration Capacity: SOTE of 1.6 lbs. O₂/hp-hr with alpha factor of 0.85



Figure 2-1. Left: Schematic of Motor and Blower. Right: Image of Aeromix Systems Aerator Deployed in Water.

New Equipment: The proposed Aquaturbo AER-AS Floating Aerator includes a motor mounted on a screwpeller. The motor and screwpeller are attached to a circular float structure to keep above the water surface and attached at the bottom end to a cross-shaped intake. The size of the motor will taper through the process similar to the existing equipment. Refer to **Figure 2-2** and **Figure 2-3**, and relevant equipment specifications below:





Proposed AER-AS Floating Aerator specifications:

- / Size: 79 in diameter
- / Power: 15-20HP
- / Aeration Capacity: SOTE of 2.4 lbs. O₂/HP with alpha factor of 0.95



Figure 2-2. Left: Schematic of AER-AS Floating Aerator. Right: Floating Aerator Deployed in Water.



Figure 2-3. Schematic AER-AS Floating Aerator Mixing/Aeration Mechanism.

The existing equipment currently provides 70 HP of mixing per lagoon. The proposed equipment will also provide 70 HP of mixing per lagoon. Mixing between the original equipment and the replacement equipment is expected to be comparable and likely improved by the new equipment. The aeration assumptions for the existing equipment are not available, there was no access to the PDR for the

3



WWTF. The aeration calculations for the proposed equipment reported a SOTE of 2.4 lbs. O_2 /HP with alpha factor of 0.95, which provides more than enough oxygen when compared to the design loading. The proposed equipment is suspected to be an improvement to the treatment process and complies with the design criteria for lagoon wastewater treatment.

A summary comparison of the existing and proposed aeration equipment is provided in the following table.

	Existing Equipment Aeromix System Aerator renamed the Tornado Aspirator	Aeration Equipment Aquaturbo AER-AS Floating Aerator
Aeration @ 20C	1241 lbs O ₂ /day	2081 lbs O ₂ /day
Mixing Energy	70 HP	70 HP

Where: AOTE = SOTE x (β^*C_s - $C_{L)}/C_{c,20}^*1.024^{T-20}$ x α

Where: AOTE: Actual oxygen transfer efficiency

- SOTE: Standard oxygen transfer efficiency
- β: Salinity surface tension correction factor
- α: OTE Correction factor
- CL: Desired O₂ residual per CDPHE
- $Cs_{20:}$ O_2 saturation at 20°C
- T: Water temperature, C

RSI-W0333.25009 TOWN OF PAONIA WWTF IN-KIND REPLACEMENT

4



APPENDIX A Site location application form







COLORADO Department of Public Health & Environment

Water Quality Control Division Engineering Section

4300 Cherry Creek Drive South, B2 Denver, Colorado 80246-1530 <u>CDPHE.WQEngReview@state.co.us</u> 303-692-6298

Regulation 22: Site Location Application Form Section 22.12 - In-Kind Replacement

In accordance with Regulation 22, Section 22.12, the owner of a domestic wastewater treatment works (or its designee) that installs structures or equipment that meets the definition of in-kind replacement shall submit written notice of the nature and extent of such replacement to the Division <u>no later than fifteen (15) working days</u> after the replacement work has been put into service. Notice for in-kind replacement shall be made to the Division on the proper form. The notification may include multiple, independent pieces of equipment or structures that qualify for in-kind replacement within a single written notice of in-kind replacement. Unless waived by the Division, a site location and design review application is required for replacement of equipment outside of the property approved under the latest site application.

The Division will act expeditiously on all complete applications that have been submitted for review. For in-kind replacement site location applications, the Division has a goal to complete its final review in a total of thirty (30) days from the date of receipt of the application. In the event the work does not meet the definition of in-kind replacement, the Division shall notify the owner that the work does not meet the definition of in-kind replacement and that an application for amendment of an approved site location is required.

"IN-KIND REPLACEMENT" means replacement of any process treatment component or hydraulic conveyance component at an existing, approved domestic wastewater treatment works with a similar (i.e., not exactly alike or identical) component as part of normal or emergency replacements to assure continued compliance with applicable site location, design, and permit conditions, including effluent limitations. Replacement or technology upgrades that do not change the original intent of the equipment or structure being renovated, do not impact the design capacity, and do not require the application of alternate design criteria (e.g., change from chemical to ultraviolet light disinfection) qualify as in-kind replacement. In-kind replacement does not include operations and maintenance activities or identical replacements of any process treatment component or hydraulic conveyance component at an existing approved domestic wastewater treatment works; these activities may proceed without Division notification or site location approval.

A. Project and System Information							
System Name	Town of Paonia	Town of Paonia					
Project Title	Lagoon 1 Aeration Replace	ment					
County	Delta						
CDPS Permit No.	CO0047431						
Original Site Location Approval No.	4781 Date of Site Location Approval August 20, 2007						
Design Company Name	RESPEC Company, LLC						
Design Engineer	James Starnes CO License Number 0052530						
Addross	5540 Tech Center Drive						
Address	Colorado Springs, CO 80919						
Email	james.starnes@respec.co m	Phone	719.227.0072				
Applicant/Entity	Town of Paonia						
Representative Name	Cory Heiniger						
Address	PO Box 460						
Address	Paonia, CO 81428						
Email	coryheiniger_PW@towno fpaonia.com	Phone	970.527.4101				

B. Site Location Decision Process	
The engineering report submitted with the application shall meet all requirements of Section 22.4, including containing all information pursuant to Sections 22.3 and 22.5.	Refer to Report

C. Existing Domestic Wastewater Treatment Works Information	n
Identify all site location and amendment approval numbers and stipulated design approval capacities (flow and load).	Hydraulic capacity: 0.495 MGD Organic capacity: 560 lbs. BOD5/day Refer to report section 1.1
Identify the name of the treatment works, whether it is a treatment plant, lift station, or interceptor.	Town of Paonia Wastewater Treatment Facility
Provide a process description of the existing treatment works, including the original design intent of the existing equipment, structure, or component to be replaced.	Refer to report section 1.2
D. In-Kind Replacement Details	
Provide a description of the project including a discussion of how the in-kind replacement is required to ensure continued compliance with applicable site location, design, and permit conditions.	Replace existing floating surface aerators with new floating surface aerators to increase concentration of dissolved oxygen and promote mixing. DO conc. affect treatment of BOD and nitrogen. Refer to report section 2.1
Date of installation of original equipment and installation date for in-kind replacement or anticipated date of construction or need.	Original equipment deployed in 2007, proposed equipment to be deployed April 2025. Refer to report section 2.1
Description of the existing and proposed equipment, structure, or component to be replaced including physical sizes, power, capacities, compliance with the design criteria, etc. The applicant shall provide the information critical to demonstrating that the proposed change meets the definition of in-kind replacement, which may include the submittal of calculations and supporting data.	Aeration and mixing assumptions unavailable for existing equipment. Proposed equipment will comply with design criteria and provide adequate aeration and mixing. Refer to report section 2.2
Discuss the reason for the in-kind replacement, which could include such reasons as service life or equipment failure. For service life, the applicant should provide the original installation date and expected design life of the equipment.	Equipment failure of existing equipment. Refer to report section 2.1
Discuss whether the existing equipment, structure, or component received a variance, site-specific deviation, or alternative technology acceptance as part the original site location or design approval process, and if so, describe the specifics of the conditional approval.	N/A
Identify the discharge permit number for the treatment plant or the treatment plant receiving the flow, if the application is for a lift station or interceptor sewer.	N/A

I hereby certify that the information presented above is accurate and complete.							
Applicant Legal Representative or Authorized Representative							
Position/Title	Typed Name	Signature	M/		Date		
Town Administrator	Stefen Wynn	XYA	pry		4/1/2025		
Email	Phone	0					
stefenw@townofpaonia.com		970.527.410	01				



APPENDIX B DISCHARGE PERMIT





AUTHORIZATION TO DISCHARGE UNDER THE

COLORADO DISCHARGE PERMIT SYSTEM

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended), for both discharges to surface and ground waters, and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), for discharges to surface waters only, the

Town of Paonia

is authorized to discharge from the facility's wastewater treatment plant located in the NW¹/4 of the NW¹/4 of S12, plus SW¹/4 of the SW¹/4 of S1, the S¹/2 of the SE¹/4 of S2, and the NE¹/4 of S11, T14S, R92W; at 38976 Highway 133, in Paonia, CO; 38°51'20'' latitude North and 107°37'30'' longitude West.

to the North Fork of the Gunnison River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) calendar days of the date of issuance of the final permit determination, per the Colorado State Discharge Permit System Regulation 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS 1973 and the Colorado State Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the applicant.

This permit and the authorization to discharge shall expire at midnight, July 31, 2018

Issued and Signed this 1st day of July, 2013

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Chand Kieler

Janet Kieler, Permits Section Manager Water Quality Control Division

SIGNED AND ISSUED JULY 1, 2013 EFFECTIVE AUGUST 1, 2013

TABLE OF CONTENTS

PART 1	[3
A.	EF	FLUENT LIMITATIONS AND MONITORING REQUIREMENTS	3
	1.	Permitted Feature(s)	3
	2.	Limitations, Monitoring Frequencies and Sample Types for Effluent Parameters	3
	3.	Monitoring Frequency and Sample Type Influent Parameters	7
	4.	Salinity Parameters	7
	5.	Special Monitoring	7
B.	TE	ERMS AND CONDITIONS	8
	1.	Service Area	
	2.	Design Capacity	
	3.	Expansion Requirements	
	4.	Facilities Operation and Maintenance	
	5.	Compliance Schedule(s)	9
	6.	Pretreatment Program - Industrial Waste Management	9
С	DF	EFINITION OF TERMS	11
D.	Ge	eneral Monitoring SAmpling and renorting requirements	
р.	1.	Routine Reporting of Data	17
	2	Annual Biosolids Report	18
	3	Representative Sampling	
	4	Influent and Effluent Sampling Points	
	5	Analytical and Sampling Methods for Monitoring and Reporting	10
	6	Records	
	7	Flow Measuring Devices	
	8	Signatory Requirements	
PART	п.	Signatory Requirements	
Δ	NC	TIFICATION REQUIREMENTS	
л.	1	Notification to Parties	
	2	Change in Discharge	
	2. 3	Nancompliance Natification	23
	J. Л	Transfer of Ownership or Control	
		Other Notification Requirements	
	5. 6	Rynass Natification	2+ 25
	U. 7	Bypass Notification	23
	2 2	Dypass Uncote	23
	0. 0	Opseis	25 26
D). DF	Submission of incorrect of incomplete information	
Б,	1 1	Deduction Loss or Failure of Treatment Facility	
	1. 2	Increations and Dight to Entry	
	4. 2	Inspections and Night to Entry	20 77
	э. 1	Availability of Deports	
	4. 5	Availability of Reports	
	э. 6	And Hogordovs Substance Lightlity	
	0. 7	State Leave	
	/. 0	State Laws	
	0. 0	I CI IIII VIVIAUVIIS	
	у. 10	Suveranning	
	10.	. Соппаенианцу	
	11.	Drugetion of Doumit	
	12.	. Duration of Permit	
	13.	Effect of Dennit Learning	
ידית	14. 	. Effect of Perinit Issuance	
PARI	ш		

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. <u>Permitted Feature(s)</u>

Beginning no later than the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from, and self monitoring samples taken in accordance with the monitoring requirements shall be obtained from permitted feature(s):

001A, 001B, 001C following treatment and prior to mixing with the North Fork of the Gunnison River. $38^{\circ}51'20"$ N, $107^{\circ}37'30"$ W

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), 5 C.C.R. 1002-61, the permitted discharge shall not contain effluent parameter concentrations which exceed the following limitations specified below or exceed the specified flow limitation.

2. Limitations, Monitoring Frequencies and Sample Types for Effluent Parameters

In order to obtain an indication of the probable compliance or noncompliance with the effluent limitations specified in Part I.A, the permittee shall monitor all effluent parameters at the frequencies and sample types specified below. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.D.)

Self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements specified in this permit, shall be performed at the location(s) noted in Part I.A.1 above. If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

<u>Percentage Removal Requirements (BOD₅ and TSS Limitations)</u> – The percent removal requirements have been waived for this facility due to extensive documented Infiltration and Inflow (I/I) issues.

<u>Oil and Grease Monitoring</u>: For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected and analyzed for oil and grease, and reported on the appropriate DMR under parameter 03582. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

Total Residual Chlorine: Monitoring for TRC is required only when chlorine is in use.

<u>Metals:</u> Metals concentrations measured in compliance with the effluent monitoring requirements listed in Part I.A of this permit may be used to satisfy any pretreatment or industrial waste management metals monitoring requirements listed in Part I.B.8, if the metals are in the same form (i.e. total). The special sampling procedures (e.g. 24-hour composite samples) specified in Part I.B.8 must be followed.

Permitted Feature/Limit Set 001C

ICIS	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
Code		<u>30-Day</u> <u>Average</u>	<u>7-Day</u> <u>Average</u>	<u>Daily</u> <u>Maximum</u>	<u>2-Year</u> <u>Average</u>	<u>Frequency</u>	<u>Sample Type</u>
50050	Effluent Flow (MGD)	0.495		Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) April-Oct			Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) Nov-March			Report		3 Days/Week	Recorder
00010	Temp MWAT (°C) April-Oct		Report			3 Days/Week	Recorder
00010	Temp MWAT (°C) Nov-March		Report			3 Days/Week	Recorder
00400	pH (su)			6.5-9.0		Weekly	Grab
51040	<i>E. coli</i> (#/100 ml) Oct - Mar	1736	3852			Quarterly	Grab
51040	<i>E. coli</i> (#/100 ml) Apr - Sep	1043	2086			Quarterly	Grab
50060	TRC (mg/l)	0.015		0.14		Weekly	Grab
00620	Nitrate as N (mg/l)	NA		Report		Monthly	Grab
00615	Nitrite as N (mg/l)	NA		Report		Monthly	Grab
00640	Total Inorganic Nitrogen (mg/l)						
	Until September 30, 2018			Report		Monthly	Grab
	Starting October 1, 2018			73		Monthly	Grab
00610	Total Ammonia as N (mg/l)						
	January	26		40		Monthly	Grab
	February	26		40		Monthly	Grab
	March	23		40		Monthly	Grab
	April	35		40		Monthly	Grab
	May	19		35		Monthly	Grab
	June	15		30		Monthly	Grab
	July	13		33	9.5	Monthly	Grab
	August	14		34	9.5	Monthly	Grab
	September	14		32	9.5	Monthly	Grab
	October	16		28	9.5	Monthly	Grab
	November	25		40		Monthly	Grab
	December	26		38		Monthly	Grab
00310	BOD5, effluent (mg/l)	30	45			Monthly	Grab
00310	BOD5, effluent (lbs/day)	124	186			Monthly	Calculated
00530	TSS, effluent (mg/l)	75	110			Monthly	Grab
00530	TSS, effluent (lbs/day)	310	454			Monthly	Calculated
84066	Oil and Grease (visual)			Report		Weekly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l) PWS intake (mg/l)	Report		Report		Quarterly	Grab
	WWTF effluent (mg/l)	Report		Report		Quarterly	Grab
01323	Se, PD (µg/l) Until Sept. 30, 2018	Report		NA		Monthly	Grab
	Starting October 1, 2018	42		NA		Monthly	Grab

Permitted Feature/Limit Set 001B

ICIS	Effluent Deservator	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
Code		<u>30-Day</u> <u>Average</u>	<u>7-Day</u> <u>Average</u>	<u>Daily</u> <u>Maximum</u>	<u>2-Year</u> <u>Average</u>	<u>Frequency</u>	<u>Sample Type</u>
50050	Effluent Flow (MGD)	0.3		Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) April-Oct			Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) Nov-March			Report		3 Days/Week	Recorder
00010	Temp MWAT (°C) April-Oct		Report			3 Days/Week	Recorder
00010	Temp MWAT (°C) Nov-March		Report			3 Days/Week	Recorder
00400	pH (su)			6.5-9		Weekly	Grab
51040	<i>E. coli</i> (#/100 ml) Oct - Mar	2000	4000			Quarterly	Grab
51040	<i>E. coli</i> (#/100 ml) Apr - Sep	1639	3278			Quarterly	Grab
50060	TRC (mg/l)	0.024		0.22		Weekly	Grab
00620	Nitrate as N (mg/l)	NA		Report		Monthly	Grab
00615	Nitrite as N (mg/l)	NA		Report		Monthly	Grab
00640	Total Inorganic Nitrogen (mg/l)						
	Until September 30, 2018			Report		Monthly	Grab
	Starting October 1, 2018			114		Monthly	Grab
00610	Total Ammonia as N (mg/l)						
	January	40		90		Monthly	Grab
	February	40		75		Monthly	Grab
	March	40		90		Monthly	Grab
	April	59		175		Monthly	Grab
	May	32		55		Monthly	Grab
	June	30		55		Monthly	Grab
	July	27		45	9.5	Monthly	Grab
	August	30		50	9.5	Monthly	Grab
	September	21		50	9.5	Monthly	Grab
	October	33		50	9.5	Monthly	Grab
	November	40		95		Monthly	Grab
	December	40		60		Monthly	Grab
00310	BOD5, effluent (mg/l)	30	45			Monthly	Grab
00310	BOD5, effluent (lbs/day)	124	186			Monthly	Calculated
00530	TSS, effluent (mg/l)	75	110			Monthly	Grab
00530	TSS, effluent (lbs/day)	310	454			Monthly	Calculated
84066	Oil and Grease (visual)			Report		Weekly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l) PWS intake (mg/l)	Report		Report		Quarterly	Grab
	WWTF effluent (mg/l)	Report		Report		Quarterly	Grab
01323	Se, PD (µg/l) Until Sept. 30, 2018	Report		NA		Monthly	Grab
	Starting October 1, 2018	42		NA		Monthly	Grab

<u> Permitted Feature/Limit Set 001A</u>

ICIS	Effluent Devenueter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
<u>Code</u>		<u>30-Day</u> <u>Average</u>	<u>7-Day</u> <u>Average</u>	<u>Daily</u> <u>Maximum</u>	<u>2-Year</u> <u>Average</u>	<u>Frequency</u>	Sample Type
50050	Effluent Flow (MGD)	0.2		Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) April-Oct			Report		3 Days/Week	Recorder
00010	Temp Daily Max (°C) Nov-March			Report		3 Days/Week	Recorder
00010	Temp MWAT (°C) April-Oct		Report			3 Days/Week	Recorder
00010	Temp MWAT (°C) Nov-March		Report			3 Days/Week	Recorder
00400	pH (su)			6.5-9		Weekly	Grab
51040	<i>E. coli</i> (#/100 ml) Oct - Mar	2000	4000			Quarterly	Grab
	<i>E. coli</i> (#/100 ml) Apr - Sep	2000	4000			Quarterly	Grab
50060	TRC (mg/l)	0.036		0.32		Weekly	Grab
00620	Nitrate as N (mg/l)	NA		Report		Monthly	Grab
00615	Nitrite as N (mg/l)	NA		Report		Monthly	Grab
00640	Total Inorganic Nitrogen (mg/l)						
	Until September 30, 2018			Report		Monthly	Grab
	Starting October 1, 2018			166		Monthly	Grab
00610	Total Ammonia as N (mg/l)						
	January	60		130		Monthly	Grab
	February	60		115		Monthly	Grab
	March	55		130		Monthly	Grab
	April	88		265		Monthly	Grab
	May	45		80		Monthly	Grab
	June	40		80		Monthly	Grab
	July	35		65	9.5	Monthly	Grab
	August	40		65	9.5	Monthly	Grab
	September	29		65	9.5	Monthly	Grab
	October	45		80	9.5	Monthly	Grab
	November	60		145		Monthly	Grab
	December	65		90		Monthly	Grab
00310	BOD5, effluent (mg/l)	30	45			Monthly	Grab
00310	BOD5, effluent (lbs/day)	124	186			Monthly	Calculated
00530	TSS, effluent (mg/l)	75	110			Monthly	Grab
00530	TSS, effluent (lbs/day)	310	454			Monthly	Calculated
84066	Oil and Grease (visual)			Report		Weekly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l) PWS intake (mg/l)	Report		Report		Quarterly	Grab
	WWTF effluent (mg/l)	Report		Report		Quarterly	Grab
01323	Se, PD (µg/l) Until Sept. 30, 2018	Report		NA		Monthly	Grab
	Starting October 1, 2018	42		NA		Monthly	Grab

3. Monitoring Frequency and Sample Type Influent Parameters

Regardless of whether or not an effluent discharge occurs and in order to obtain an indication of the current influent loading as compared to the approved capacity specified in Part I.A.3 and Part I.B.2; the permittee shall monitor influent parameters at the following required frequencies, the results to be reported on the Discharge Monitoring Report (See Part I.D):

If the permittee monitors any parameter more frequently than required by the permit, using an approved test procedure or as specified in the permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division.

Self-monitoring samples taken in compliance with the monitoring requirements specified below shall be taken at the following location(s): **Outfall 300I, at a representative point prior to biological treatment.**

ICIS	Denometer	Disc Maxin	harge Limita 1um Concent	tions trations	Monitoring	Sample Type	
Code	rarameter	30-Day Average	7-Day Average	Daily Max.	Frequency		
50050 G	Flow, mgd	Report		Report	Continuous ¹	Recorder ¹	
00180 G	Plant Capacity (% of Capacity - Hydraulic) ²	Report			Monthly	Calculated ²	
00310 G	BOD ₅ , mg/l	Report	Report		Monthly	Composite	
00310 G	BOD ₅ , lbs/day	Report	Report		Monthly	Calculated	
00180 G	Plant Capacity (% of Capacity - Organic) ²	Report			Monthly	Calculated ²	
00530 G	Total Suspended Solids, mg/l	Report	Report		Monthly	Composite	
70295 G	Total Dissolved Solids *	Report			Quarterly	Composite	

Permitted Feature 300I

* The % capacity is to be reported against the listed capacities of 0.495 for the hydraulic capacity and 560 for the organic capacities as noted in Site Approval 4781. The percentage should be calculated using the 30-day average values divided by the corresponding capacity, times 100.

4. <u>Salinity Parameters</u>

In order to obtain an indication of the increase in salinity due to the treatment and use of water within this service area, the permittee shall monitor the raw water source and the wastewater effluent at the following required frequencies, the results to be reported on the Discharge Monitoring Report (See Part I, Section D.2.): 300I and Outfall 001A, B and C quarterly.

Self-monitoring samples taken in compliance with the monitoring requirements specified above shall be taken prior to treatment of the raw drinking water source (with a composite sample proportioned to flow prepared from individual grab samples if more than one source is being utilized), and at the established wastewater treatment facility effluent sampling point identified above in Part I, Section B.2.

As summarized in the fact sheet, the total salinity loading from this facility exceeds that allowable in Section 61.8(2)(l) of the <u>Colorado Discharge Permit System Regulations</u> (Regulation No. 61). The regulations specify that in such cases, the permittee must submit a report addressing salinity. Because there is no record that the permittee has previously submitted this report, the performance of the study is due by **March 1, 2018.**

5. Special Monitoring

Not applicable. Reserved.

B. TERMS AND CONDITIONS

1. Service Area

All wastewater flows contributed in the service area may be accepted by the Town of Paonia for treatment at the permittee's wastewater treatment plant provided that such acceptance does not cause or contribute to an exceedance of the throughput or design capacity of the treatment works or the effluent limitations in Part I.A, or constitute a substantial impact to the functioning of the treatment works, degrade the quality of the receiving waters, or harm human health, or the environment.

In addition, the permittee shall enter into and maintain service agreements with any municipalities that discharge into the wastewater treatment facility. The service agreements shall contain all provisions necessary to protect the financial, physical, and operational integrity of the wastewater treatment works.

2. Design Capacity

Based on Site Approval **4781**, the design capacity of this domestic wastewater treatment works is **0.495 million gallons per day** (MGD) for hydraulic flow (30-day average) and **560 lbs. BOD₅ per day** for organic loading (30-day average).

3. Expansion Requirements

Pursuant to Colorado Law, C.R.S. 25-8-501 (5 d & e), the permittee is required to initiate engineering and financial planning for expansion of the domestic wastewater treatment works whenever throughput reaches eighty (80) percent of the treatment capacity. Such planning may be deemed unnecessary upon a showing that the area served by the domestic wastewater treatment works has a stable or declining population; but this provision shall not be construed as preventing periodic review by the Division should it be felt that growth is occurring or will occur in the area.

The permittee shall commence construction of such domestic wastewater treatment works expansion whenever throughput reaches ninety-five (95) percent of the treatment capacity or, in the case of a municipality, either commence construction or cease issuance of building permits within such municipality until such construction is commenced; except that building permits may continue to be issued for any construction which would not have the effect of increasing the input of wastewater to the sewage treatment works of the municipality involved.

Where unusual circumstances result in throughput exceeding 80% of treatment capacity, the permittee may, in lieu of initiating planning for expansion, submit a report to the Division that demonstrates that it is unlikely that the event will reoccur, or even if it were to reoccur, that 95% of the treatment capacity would not be exceeded.

Where unusual circumstances result in throughput exceeding 95% of the treatment capacity, the permittee may, in lieu of initiating construction of the expansion, submit a report to the Division that demonstrates that the domestic wastewater treatment works was in compliance at all times during the events and that it is extremely unlikely that the event will reoccur.

Where the permittee submits a report pursuant to unusual circumstances, and the Division, upon review of such report, determines in writing to the permittee that the report does not support the required findings, the permittee shall initiate planning and/or construction of the domestic wastewater treatment works as appropriate.

4. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including all portions of the collection system and lift stations owned by the permittee (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

5. <u>Compliance Schedule(s)</u>

All information and written reports required by the following compliance schedules should be directed to the Permits Section for final review unless otherwise stated.

a. <u>Installation of Temperature Monitoring Equipment</u> - The following compliance schedule is included to give the facility time to install temperature monitoring equipment for the effluent.

Code	Event	Description	Due Date
04301	Install Temperature Meters	The permittee is to submit a document certifying that continuous temperature and flow monitoring equipment has been installed and is operational.	February 1, 2014

b. <u>Activities to Meet Total Inorganic Nitrogen Dissolved Selenium Final Limits</u> – In order to meet T.I.N. and Potentially Dissolved Selenium final limitations, the following schedule is included:

Code	Event	Description	Due Date
CS010	Status/ Progress Report	Submit a progress report summarizing the data collected to date for these parameters.	12/31/2013
CS011	Plan Report or Scope of Work	If the limitation cannot be met, submit a report that identifies strategies to meet these limitations, including the selected strategy	10/01/2014
CS010	Status/ Progress Report	Submit a progress report summarizing the progress in implementing the strategies such that compliance with these limitations may be attained.	10/01/2015
CS010	Status/ Progress Report	Submit a progress report summarizing the progress in implementing the strategies such that compliance with these limitations may be attained.	10/01/2016
CS010	Status/ Progress Report	Submit a progress report summarizing the progress in implementing the strategies such that compliance with these limitations may be attained.	10/01/2017
50008	Study Results	Submit study results that show compliance has been attained with the final limitations	10/01/2018

Regulation 61.8(3)(n)(i) states that a report should be submitted to the Division no later than 14 calendar days following each date identified in the schedule of compliance. The 14 days have already been incorporated into the above dates and therefore all reports are due on or before the date listed in the table.

6. <u>Pretreatment Program - Industrial Waste Management</u>

The Town of Paonia currently does not have a pretreatment program.

- a. The Permittee has the responsibility to protect the Domestic Wastewater Treatment Works (DWTW), as defined at section 25.8.103(5) of the Colorado Water Quality Control Act, or the Publicly-Owned Treatment Works (POTW), as defined at 40 CFR section 403.3(q) of the federal pretreatment regulations, from pollutants which would cause pass through or interference, as defined at 40 CFR 403.3(p) and (k), or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.
- b. Pretreatment Standards (40 CFR Section 403.5) developed pursuant to Section 307 of the Federal Clean Water Act (the Act) require that the Permittee shall not allow, under any circumstances, the introduction of the following pollutants to the DWTW from any source of non-domestic discharge:
 - i. Pollutants which create a fire or explosion hazard in the DWTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

- ii. Pollutants which will cause corrosive structural damage to the DWTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;
- iii. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the DWTW, or otherwise interfere with the operation of the DWTW;
- iv. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with any treatment process at the DWTW;
- v. Heat in amounts which will inhibit biological activity in the DWTW resulting in Interference, but in no case heat in such quantities that the temperature at the DWTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the DWTW, approves alternate temperature limits;
- vi. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;
- vii. Pollutants which result in the presence of toxic gases, vapors, or fumes within the DWTW in a quantity that may cause acute worker health and safety problems;
- viii. Any trucked or hauled pollutants, except at discharge points designated by the DWTW; and
- ix. Any specific pollutant that exceeds a local limitation established by the Permittee in accordance with the requirements of 40 CFR Section 403.5(c) and (d).
- x. Any other pollutant which may cause Pass Through or Interference.
- c. EPA shall be the Approval Authority and the mailing address for all reporting and notifications to the Approval Authority shall be: USEPA 1595 Wynkoop St. 8ENF-W-NP, Denver, CO 80202-1129. Should the State be delegated authority to implement and enforce the Pretreatment Program in the future, the Permittee shall be notified of the delegation and the state permitting authority shall become the Approval Authority.
- d. In addition to the general limitations expressed above, more specific Pretreatment Standards have been and will be promulgated for specific industrial categories under Section 307 of the Act (40 CFR Part 405 et. seq.).
- e. The Permittee must notify the state permitting authority and the Approval Authority, of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user within sixty (60) calendar days following the introduction or change. Such notice must identify:
 - i. Any new introduction of pollutants into the DWTW from an industrial user which would be subject to Sections 301, 306, or 307 of the Act if it were directly discharging those pollutants; or
 - ii. Any substantial change in the volume or character of pollutants being introduced into the DWTW by any industrial user;
 - iii. For the purposes of this section, adequate notice shall include information on:
 - (A) The identity of the industrial user;
 - (B) The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the DWTW; and
 - (C) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids or sludge produced at such DWTW.

- iv. For the purposes of this section, an industrial user shall include:
 - (A) Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I and subchapter N;
 - (B) Any discharger which has a process wastewater flow of 25,000 gallons or more per day;
 - (C) Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the DWTW treatment plant;
 - (D) Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the DWTWs operation or for violating any Pretreatment Standard or requirements;
- f. At such time as a specific Pretreatment Standard or requirement becomes applicable to an industrial user of the Permittee, the state permitting authority and/or Approval Authority may, as appropriate:
 - i. Amend the Permittee's CDPS discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national Pretreatment Standards;
 - ii. Require the Permittee to specify, by ordinance, order, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the Permittee's DWTW for treatment. Such requirement shall be imposed in a manner consistent with the program development requirements of the General Pretreatment Regulations at 40 CFR Part 403; and/or,
 - iii. Require the Permittee to monitor its discharge for any pollutant which may likely be discharged from the Permittee's DWTW, should the industrial user fail to properly pretreat its waste.

The state permitting authority and the Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the Permittee, for violations of a permit, order or similar enforceable mechanism issued by the Permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a CDPS permit violation has occurred because of the failure of the Permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the DWTW, the state permitting authority and/or Approval Authority shall hold the Permittee and/or industrial user responsible and may take legal action against the Permittee as well as the Industrial user(s) contributing to the permit violation.

C. DEFINITION OF TERMS

- 1. "Acute Toxicity" The acute toxicity limitation is exceeded if the LC50 is at any effluent concentration less than or equal to the IWC indicated in this permit.
- 2. "Antidegradation limits" See "Two (2) Year Rolling Average".
- 3. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.
- 4. "Composite" sample is a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow. For a SBR type treatment system, a composite sample is defined as sampling equal aliquots during the beginning, middle and end of a decant period, for two consecutive periods during a day (if possible).
- 5. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.
- 6. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample.

For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit. For temperature, see Daily Maximum Temperature.

7. "Daily Maximum Temperature (DM)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2 hour maximum can be determined on every data point after the initial 2 hours of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

For example data points collected at:

08:15, 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, would be averaged for a single 2 hour average data point 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, would be averaged for a single 2 hour average data point 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, 10:30, would be averaged for a single 2 hour average data point

This would continue throughout the course of a calendar day. The highest of these 2 hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum. Data from 11 pm to 12:59 am, would fall in the previous month. Data collected from 11:01 pm to 1:00 am would fall in the new month.

- 8. "Dissolved (D) metals fraction" is defined in the <u>Basic Standards and Methodologies for Surface Water</u> 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.
- "Geometric mean" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

Method 1:

Geometric Mean = (a*b*c*d*...) "*" - means multiply

Method 2:

Geometric Mean = antilog ([log(a)+log(b)+log(c)+log(d)+...]/n)

Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

- i. A minimum of two samples shall be collected for coliform analysis within the next sampling period.
- ii. <u>If the sampling frequency is monthly or less frequent:</u> For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting coliform results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

<u>If the sampling frequency is more frequent than monthly:</u> Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

- 10. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.
- 11. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.
- 12. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.
- 13. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.
- 14. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.
- 15. "Maximum Weekly Average Temperature (MWAT)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8th day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

- Day 1: Average of all temperature data collected during the calendar day.
- Day 2: Average of all temperature data collected during the calendar day.
- Day 3: Average of all temperature data collected during the calendar day.
- Day 4: Average of all temperature data collected during the calendar day.
- Day 5: Average of all temperature data collected during the calendar day.
- Day 6: Average of all temperature data collected during the calendar day.
- Day 7: Average of all temperature data collected during the calendar day.

1st MWAT Calculation as average of previous 7 days

Day 8: Average of all temperature data collected during the calendar day. 2nd MWAT Calculation as average of previous 7 days Day 9: Average of all temperature data collected during the calendar day.

3rd MWAT Calculation as average of previous 7 days

- 16. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.
- 17. "Potentially dissolved (PD) metals fraction" is defined in the <u>Basic Standards and Methodologies for Surface Water</u> 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.

- 18. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.D of this permit or the PQLs of an individual laboratory.
- 19. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.
- 20. "Recorder" requires the continuous operation of a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)
- 21. SAR and Adjusted SAR The equation for calculation of SAR-adj is:

$$SAR-adj = \frac{Na^+}{\sqrt{\frac{Ca_x + Mg^{++}}{2}}}$$

Where:

Na+= Sodium in the effluent reported in meq/l Mg++ = Magnesium in the effluent reported in meq/l Cax = calcium (in meq/l) in the effluent modified due to the ratio of bicarbonate to calcium

The values for sodium (Na+), calcium (Ca++), bicarbonate (HCO3-) and magnesium (Mg++) in this equation are expressed in units of milliequivalents per liter (meq/l). Generally, data for these parameters are reported in terms of mg/l, which must then be converted to calculate the SAR. The conversions are:

 $meq/l = \frac{Concentration in mg/l}{Equivalent weight in mg/meq}$

Where the equivalent weights are determined based on the atomic weight of the element divided by the ion's charge:

Na+ = 23.0 mg/meq (atomic weight of 23, charge of 1) Ca++ = 20.0 mg/meq (atomic weight of 40.078, charge of 2) Mg++ = 12.15 mg/meq (atomic weight of 24.3, charge of 2) HCO3- = 61 mg/mep (atomic weight of 61, charge of 1)

The EC and the HCO3 -/Ca++ ratio in the effluent (calculated by dividing the HCO3 - in meq/l by the Ca++ in meq/l) are used to determine the Cax using the following table.

HCO3/Ca Ratio And EC 1, 2, 3													
Salinity of Effluent (EC)(dS/m)													
		0.1	0.2	0.3	0.5	0.7	1.0	1.5	2.0	3.0	4.0	6.0	8.0
	.05	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
	.10	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56
	.15	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
	.20	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
	.25	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
	.30	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
	.35	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
	.40	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
	.45	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61
	.50	2.84	2.93	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
	.75	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
	1.00	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
Datia of	1.25	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
HCO3/Ca	1.50	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
11000/04	1.75	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
	2.00	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
	2.25	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
	2.50	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
	3.00	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30
	3.50	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
	4.00	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
	4.50	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
	5.00	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93
	7.00	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
	10.00	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
	20.00	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37
	30.00	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28
1	Adapte	d from Si	19rez (10	81)									

Madified Colours Determination for Adjusted Sedium Advantion Datis T-1-1-

Adapted from Suarez (1981).

2 Assumes a soil source of calcium from lime (CaCO3) or silicates; no precipitation of magnesium, and partial pressure of CO2 near the soil surface (PCO2) is 0.0007 atmospheres.

3 Cax, HCO3, Ca are reported in meq/l; EC is in dS/m (deciSiemens per meter).

Because values will not always be quantified at the exact EC or HCO3-/Ca++ ratio in the table, the resulting Cax must be determined based on the closest value to the calculated value. For example, for a calculated EC of 2.45 dS/m, the column for the EC of 2.0 would be used. However, for a calculated EC of 5.1, the corresponding column for the EC of 6.0 would be used. Similarly, for a HCO3-/Ca++ ratio of 25.1, the row for the 30 ratio would be used.

The Division acknowledges that some effluents may have electrical conductivity levels that fall outside of this table, and others have bicarbonate to calcium ratios that fall outside this table. For example, some data reflect HCO3-/Ca++ ratios greater than 30 due to bicarbonate concentrations reported greater than 1000 mg/l versus calcium concentrations generally less than 10 mg/l (i.e., corresponding to HCO3-/Ca++ ratios greater than 100). Despite these high values exceeding the chart's boundaries, it is noted that the higher the HCO3-/Ca++ ratio, the greater the SAR-adj. Thus, using the Cax values corresponding to the final row containing bicarbonate/calcium ratios of 30, the permittee will actually calculate an SAR-adj that is less than the value calculated if additional rows reflecting HCO3-/Ca++ ratios of greater than 100 were added.

22. "Seven (7) day average" means, with the exception of fecal coliform or E. coli bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period.

Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. (See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).

- 23. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period, which represents a calendar month. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. (See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).
- 24. Toxicity Identification Evaluation (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.
- 25. "Total Inorganic Nitrogen (T.I.N.)" is an aggregate parameter determined based on ammonia, nitrate and nitrite concentrations. To determine T.I.N. concentrations, the facility must monitor for total ammonia and total nitrate plus nitrite (or nitrate and nitrite individually) on the same days. The calculated T.I.N. concentrations in mg/L shall then be determined as the sum of the analytical results of same-day sampling for total ammonia (as N) in mg/L, and total nitrate plus nitrite (as N) in mg/L (or nitrate as N and nitrite as N individually). From these calculated T.I.N. concentrations, the daily maximum and thirty (30) day average concentrations for T.I.N. shall be determined in the same manner as set out in the definitions for the daily maximum and thirty (30) day average. (See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).
- 26. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in <u>Manual of Methods for Chemical Analysis of Water and Wastes</u>, U.S. Environmental Protection Agency, March 1979, or its equivalent.
- 27. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in <u>Methods for Chemical Analysis of Water and Wastes</u>, U.S. Environmental Protection Agency, March 1979 or its equivalent.
- 28. Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.
- 29. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty-four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
- 30. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.
- 31. "Two (2) -Year Rolling Average" Antidegradation limits apply as the average of all data collected in a two (2) year (24month) period. These limits become effective upon the effective date of the permit, but are not reportable on a DMR until two years (typically 24 months) of data have been collected. After data has been collected for 24 months, the 30-day averages for each month are then averaged together to determine the two-year rolling average (using data from month 1 to month 24, then month 2 to month 25, month 3 to month 26, etc).

For ammonia, two-year rolling averages may be set up for individual months, or may be grouped together for several months. For individual months (every month has a different two-year rolling average limit) the two-year average is reportable after two months of data are collected.

Example: Permit is effective Jan 2010 and there is a two-year rolling average limit specific to the month of January.

Jan 2010 DMR – Nothing to Report Jan 2011 DMR – 2-Year Average of Jan 2010 and Jan 2011 Jan 2012 DMR – 2-Year Average of Jan 2011 and Jan 2012, etc.

Where several months have the same two-year average limit, it is reportable on the DMR after two months of data have been collected for every month in the group.

Example: Permit is effective Jan 2010 and there is a two-year rolling average limit specific to the months of Jan, Feb, June.

 1^{st} Reportable DMR – June 2011 - 2-Year Average Jan 2010 Feb 2010 June 2010 Jan 2011 Feb 2011 June 2011 2^{nd} Reportable DMR – Jan 2012 - 2-Year Average Feb 2010 June 2010 Jan 2011 Feb 2011 June 2011 Jan 2012 3^{rd} Reportable DMR – Feb 2012 - 2-Year Average June 2010 Jan 2011 Feb 2011 June 2011 Jan 2012 Feb 2012, etc.

(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).

- 32. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.
- 33. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

D. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.A or Part I.B shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.D. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR service (when available). If mailed, one form shall be mailed to the Division, as indicated below, so that the DMR is received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment Water Quality Control Division WQCD-P-B2 4300 Cherry Creek Drive South Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.D.8.

2. Annual Biosolids Report

The permittee shall provide the results of all biosolids monitoring and information on management practices, land application sites, site restrictions and certifications. Such information shall be provided no later than **February 19th** of each year. Reports shall be submitted addressing all such activities that occurred in the previous calendar year. If no biosolids were applied to the land during the reporting period, "no biosolids applied" shall be reported. Until further notice, biosolids monitoring results shall be reported on forms, or copies of forms, provided by the Division. Annual Biosolids Reports required herein, shall be signed and certified in accordance with the Signatory Requirements, Part I.D.1, and submitted as follows:

The original copy of each form shall be submitted to the following address:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL DIVISION WQCD-PERMITS-B2 4300 CHERRY CREEK DRIVE SOUTH DENVER, COLORADO 80246-1530

A copy of each form shall be submitted to the following address:

WATER PROGRAM REGIONAL BIOSOLIDS PROGRAM UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION VIII, 1595 WYNKOOP STREET DENVER, CO 80202-2466

ATTENTION: BIOSOLIDS PROGRAM MANAGER

3. <u>Representative Sampling</u>

Samples and measurements taken for the respective identified monitoring points as required herein shall be representative of the volume and nature of: 1) all influent wastes received at the facility, including septage, biosolids, etc.; 2) the monitored effluent discharged from the facility; and 3) biosolids produced at the facility. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the influent, effluent, or biosolids wastestream joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and prior approval by the Division.

4. Influent and Effluent Sampling Points

Influent and effluent sampling points shall be so designed or modified so that: 1) a sample of the influent can be obtained after preliminary treatment and prior to primary or biological treatment and 2) a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters. The permittee shall provide access to the Division to sample at these points.

5. Analytical and Sampling Methods for Monitoring and Reporting

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.

Numeric Limits

If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL (the PQL achieved by the lab), the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the PQL obtained is lower or equal to the PQL in the table below.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Report Only Limits

If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the potential numeric effluent limit(s) (maximum allowable pollutant concentration as shown in the WQA or fact sheet). If all analytical methods and corresponding PQLs are greater than the potential numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Interim Report Only Followed By a Numeric Limit

If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit (s), then the analytical method with the lowest PQL shall be used.

While the report only limit is effective, the reporting requirements shall follow those under the Report Only Limits section. Once the numeric limit is effective, the reporting requirements shall follow the numeric limits reporting requirements.

<u>T.I.N.</u>

For parameters such as T.I.N., the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

Calculating Averages

In the calculation of average concentrations (i.e. daily average, 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

If <u>all individual analytical results are less than the PQL</u>, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

If <u>one or more individual results is greater than the PQL</u>, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, **it must be reported as a value**.

Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero.

The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

<u>PQLs</u>

The present lowest PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the table below. A listing of the PQLs for organic parameters that must meet the above requirement can be found in the Division's Practical Quantitation Limitation Guidance Document, July 2008. This document is available on the Division's website at <u>www.coloradowaterpermits.com</u>.

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Parameter	Practical	Parameter	Practical	
	Quantitation		Quantitation	
	Limits,		Limits, µg/l	
Aluminum	50 µg/l	Mercury	0.1 µg/l	
Ammonia	1 mg/l	Mercury (low-level)	0.003 µg/l	
Arsenic	1 µg/l	Nickel	50 µg/l	
Barium	5 µg/l	N-Ammonia	50 µg/l	
Beryllium	1 µg/l	N Nitrate/Nitrite	0.5 mg/l	
BOD / CBOD	1 mg/l	N-Nitrate	50 µg/l	
Boron	50 µg/l	N-Nitrite	10 µg/l	
Cadmium	1 µg/l	Total Nitrogen	0.5 mg/l	
Calcium	20 µg/l	Phenols	100 µg/l	
Chloride	2 mg/l	Phosphorus	10 µg/l	
Chlorine	0.1 mg/l	Radium 226	1 pCi/l	
Total Residual Chlorine		Radium 228	1 pCi/l	
DPD colorimetric	0.10 mg/l	Selenium	1 µg/l	
Amperometric titration	0.05 mg/l	Silver	0.5 µg/l	
Chromium	20 µg/l	Sodium	0.2 mg/l	
Chromium, Hexavalent	20 µg/l	Sulfate	5 mg/l	
Copper	5 µg/l	Sulfide	0.2 mg/l	
Cyanide (Direct / Distilled)	10 µg/l	Total Dissolved Solids	10 mg/l	
Cyanide, WAD+A47	10 µg/l	Total Suspended Solids	10 mg/l	
Fluoride	0.1 mg/l	Thallium	1 µg/l	
Iron	10 µg/l	Uranium	$1 \mu g/l$	
Lead	1 µg/l	Zinc	10 µg/l	
Magnesium	20 µg/l	Nonylphenol D7065	10 µg/l	
Manganese	2 µg/l	Nonylphenol D7485	0.33 µg/l	

6. <u>Records</u>

- a. The permittee shall establish and maintain records. Those records shall include, but not be limited to, the following:
 - i. The date, type, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) the analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - vii. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).
- b. The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.

7. Flow Measuring Devices

Unless exempted in Part I.A of this permit, flow metering at the headworks shall be provided to give representative values of throughput and treatment of the wastewater system. The metering device shall be equipped with a local flow indication instrument and a flow indication-recording-totalization device suitable for providing permanent flow records, which should be in the plant control building.

For mechanical facilities, where influent flow metering is not practical and the same results may be obtained from metering at the effluent end of the treatment facility, this type of flow metering arrangement will be considered, and if approved, noted in Part I.A of this permit. For lagoons, an instantaneous or continuous effluent flow measuring device shall be required in addition to the above described influent flow measuring device.

At the request of the Division, the permittee must be able to show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow being measured.

8. Signatory Requirements

- a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:
 - i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;
 - ii) In the case of a partnership, by a general partner;
 - iii) In the case of a sole proprietorship, by the proprietor;
 - iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;
 - v) By a duly authorized representative of a person described above, only if:
 - 1) The authorization is made in writing by a person described in i, ii, iii, or iv above;
- 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,
- 3) The written authorization is submitted to the Division.
- b. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PART II

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section - Domestic Compliance Program Water Quality Control Division Telephone: (303) 692-3500

b. <u>Written notification</u> shall be to:

Water Quality Protection Section - Domestic Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. Change in Discharge

The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;
- b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. Noncompliance Notification

The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

- a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division and EPA with the following information:
 - i) A description of the noncompliance and its cause;
 - ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and
 - iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.
- b. The permittee shall report the following circumstances <u>orally within twenty-four (24) hours</u> from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4 (a) <u>within five (5) working days</u> after becoming aware of the following circumstances:

- i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
- ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
- iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;
- iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
- c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

4. Transfer of Ownership or Control

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit.

- a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.
- b. A permit may be automatically transferred to a new permittee if:
 - i) The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and
 - ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and
 - iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.
 - iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i) One hundred micrograms per liter (100 μ g/l);
 - ii) Two hundred micrograms per liter (200 μ g/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μ g/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;
 - iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

- iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i) Five hundred micrograms per liter (500 μ g/l);
 - ii) One milligram per liter (1 mg/l) for antimony; and
 - iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.
 - iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. <u>Bypass Notification</u>

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. <u>Bypass</u>

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- b. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:
 - i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - iii) Proper notices were submitted in compliance with Part II.A.5.
- c. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- d. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.
- e. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

8. Upsets

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims

that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and
- ii) The permitted facility was at the time being properly operated and maintained; and
- iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and
- iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

d. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

9. <u>Submission of Incorrect or Incomplete Information</u>

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division, the permittee shall promptly submit such facts or information.

B. RESPONSIBILITIES

1. <u>Reduction, Loss, or Failure of Treatment Facility</u>

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

- a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and
- c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or

alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

3. Duty to Provide Information

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

4. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. <u>Modification, Suspension, Revocation, or Termination of Permits By the Division</u>

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

- a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:
 - i) Violation of any terms or conditions of the permit;
 - ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or
 - iii) Materially false or inaccurate statements or information in the permit application or the permit.
 - iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.
- b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:
 - i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.
 - ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

- iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:
 - (A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and
 - (B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and
 - (C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or
 - (D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) calendar days of judicial remand.
- iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.
- v) Where the Division has completed, and EPA approved, a total maximum daily load (TMDL) which includes a wasteload allocation for the discharge(s) authorized under the permit.
- vi) The permittee has received a variance.
- vii) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.
- viii) When required by the reopener conditions in the permit.
- ix) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.
- x) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.
- xi) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.
- xii) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.
- xiii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- xiv) When another State whose waters may be affected by the discharge has not been notified.
- xv) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.
- c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:
 - i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) calendar days of receipt of notification,

- ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;
- iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and
- iv) Requirements of public notice have been met.
- d. For permit modification, termination, or revocation and reissuance, the Division may request additional information from the permittee. In the case of a modified permit, the Division may require the submission of an updated application. In the case of revoked and reissued permit, the Division shall require the submission of a new application.
- e. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 calendar days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.
- f. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:
 - i) Correcting typographical errors; or
 - ii) Increasing the frequency of monitoring or reporting by the permittee; or
 - iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 calendar days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or
 - iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or
 - v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or
 - vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.
 - vii) Incorporating conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.
- g. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.
- h. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.
- i. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).
- j. If cause does not exist under this section, the Division shall not modify or revoke and reissue the permit.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. <u>Permit Violations</u>

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided elsewhere in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. <u>Severability</u>

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

10. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

11. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-60l et. seq., C.R.S. 1973 as amended.

12. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.4.

13. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

14. Effect of Permit Issuance

a. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

- b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
- c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.
- d. Compliance with a permit condition which implements a particular standard for biosolid use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for biosolid use or disposal.

PART III

CATEGORICAL INDUSTRIES

- Aluminum Forming Asbestos Manufacturing Battery Manufacturing Builders' Paper and Board Mills Canned & Preserved Fruits and Vegetables Processing Canned & Preserved Seafood Processing Carbon Black Manufacturing Cement Manufacturing Coal Mining Coil Coating Copper Forming Dairy Products Processing Electrical and Electronic Components Electroplating Explosives Manufacturing Feedlots Ferroalloy Manufacturing Fertilizer Manufacturing Glass Manufacturing Grain Mills Gum and Wood Chemicals Manufacturing Hospital Ink Formulation Inorganic Chemicals Manufacturing Iron and Steel Manufacturing Leather Tanning and Finishing
- Meat Products Metal Finishing Metal Molding and Casting (Foundries) Mineral Mining and Processing Nonferrous Metals Manufacturing Nonferrous Metals Forming and Metal Powders Oil and Gas Extraction Organic Chemicals, Plastics, and Synthetic Fibers Ore Mining and Dressing Paint Formulation Paving and Roofing Materials (Tars and Asphalt) Pesticide Chemicals Petroleum Refining Pharmaceutical Manufacturing Phosphate Manufacturing Photographic Plastics Molding and Forming Porcelain Enameling Pulp, Paper, and Paperboard Manufacturing Rubber Manufacturing Soap and Detergent Manufacturing Steam Electric Power Generating Sugar Processing Textile Mills Timber Products Processing

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles

acrolein acrylonitrile benzene bromoform carbon tetrachloride chlorobenzene chlorodibromomethane chloroethane 2-chloroethylvinyl ether chloroform dichlorobromomethane 1.1-dichlorethane 1,2-dichlorethane 1,1-dichlorethylene 1,2-dichlorpropane 1,3-dichlorpropylene ethylbenzene methyl bromide methyl chloride methylene chloride

acenaphthene acenaphthylene anthracene benzidine benzo(a)anthracene benzo(a)pvrene 3.4-benzofluoranthene benzo(ghi)perylene benzo(k)fluoranthene bis(2-chloroethoxy)methane bis(2-chloroethyl)ether bis(2-chloroisopropyl)ether bis(2-ethylhexyl)phthalate 4-bromophenyl phenyl ether butylbenzyl phthalate 2-chloronaphthalene 4-chlorophenyl phenyl ether chrysene dibenzo(a,h)anthracene 1,2-dichlorobenzene

Base/Neutral

Acid Compounds

2-chlorophenol 2,4-dichlorophenol 2,4,-dimethylphenol 4,6-dinitro-o-cresol 2,4-dinitrophenol 2-nitrophenol 4-nitrophenol p-chloro-m-cresol pentachlorophenol phenol 2,4,6-trichlorophenol

Pesticides

aldrin alpha-BHC beta-BHC gamma-BHC delta-BHC chlordane 4.4'-DDT 4,4'-DDE 4,4'-DDD dieldrin alpha-endosulfan beta-endosulfan endosulfan sulfate endrin endrin aldehyde heptachlor heptachlor epoxide PCB-1242 PCB-1254 PCB-1221

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles	Base/Neutral	Acid Compounds	Pesticides				
1,1,2,2-tetrachloroethane	1,3-dichlorobenzene		PCB-1232				
tetrachloroethylene	1,4-dichlorobenzene		PCB-1248				
toluene	3,3-dichlorobenzidine		PCB-1260				
1,2-trans-dichloroethylene	diethyl phthalate		PCB-1016				
1,1,1-trichloroethane	dimethyl phthalate		toxaphene				
1,1,2-trichloroethane	di-n-butyl phthalate						
trichloroethylene	2,4-dinitrotoluene						
vinyl chloride	2,6-dinitrotoluene						
	di-n-octyl phthalate						
	1,2-diphenylhydrazine (as azobenzene)						
	fluorene						
	fluoranthene						
	hexachlorobenzene						
	hexachlorobutadiene						
	hexachlorcyclopentadiene						
	hexachloroethane						
	indeno(1,2,3-cd)pyrene						
	isophorone						
	naphthalene						
	nitrobenzene						
	N-nitrosodimethylamine						
	N-nitrosodi-n-propylamine						
	N-nitrosodiphenylamine						
	phenanthrene						

OTHER TOXIC POLLUTANTS (AMMONIA, METALS AND CYANIDE) AND TOTAL PHENOLS

Antimony, Total Arsenic, Total Beryllium, Total Cadmium, Total Chromium, Total Copper, Total Lead, Total Mercury, Total Nickel, Total Selenium, Total Silver, Total Thallium, Total Zinc, Total Cyanide, Total Phenols, Total

pyrene

1,2,4-trichlorobenzene

Permit, **Part III** Page 34 of 34 Permit No. CO0047431

TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES

REQUIRED TO BE IDENTIFIED BY EXISTING DISCHARGERS IF EXPECTED TO BE PRESENT

Toxic Pollutants

Asbestos

Hazardous Substances

Acetaldehyde Allyl alcohol Allyl chloride Amyl acetate Aniline Benzonitrile Benzyl chloride Butyl acetate Butylamine Captan Carbarvl Carbofuran Carbon disulfide Chlorpyrifos Coumaphos Cresol Crotonaldehyde Cyclohexane 2,4-D(2,4-Dichlorophenoxy acetic acid) Diazinon Dicamba Dichlobenil Dichlone 2,2-Dichloropropionic acid Dichlorvos Diethyl amine Dimethyl amine Dinitrobenzene Diquat Disulfoton Diuron Epichlorohydrin Ethanolamine Ethion Ethylene diamine Ethylene dibromide Formaldehyde Furfural Guthion

Isoprene Isopropanolamine Keithane Kepone Malathion Mercaptodimethur Methoxychlor Methyl mercaptan Methyl methacrylate Methyl parathion Mexacarbate Monoethyl amine Monomethyl amine Naled Napthenic acid Nitrotoluene Parathion Phenolsulfanate Phosgene Propargite Propylene oxide Pyrethrins Ouinoline Resorcinol Strontium Strychnine Styrene TDE (Tetrachlorodiphenylethane) 2,4,5-T (2,4,5-Trichlorophenoxy acetic acid) 2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid] Trichlorofan Triethylamine Trimethylamine Uranium Vandium Vinyl Acetate Xvlene Xylenol Zirconium

APPENDIX C EQUIPMENT SPECIFICATIONS







Powerful and reliable, self-aspirating surface Tornado aerators are used to upgrade lagoon systems and expand the treatment capacity of mechanical wastewater treatment plants.

Tornado surface aspirating aerators improve aeration and mixing in a wide range of applications.

Tornado provides high oxygen transfer and intensive mixing capabilities in a wide range of applications. The Tornado aerator's turbulent directional mixing and jet propulsion discharge assures that oxygen is quickly blended with the wastewater for unmatched oxygen transfer. The intense action of the jet propulsion shears wastewater solids to increase treatment performance and provide better contact for the oxygen and wastewater bacteria.





Principle of Operation

The Tornado aerator mounts at an angle in the water with the motor and air intake above the surface and the propeller submerged below the water. The solid motor shaft spins a proprietary stainless steel propeller. Water moves at a high velocity through and near the propeller, creating a low pressure zone at the hub. The low pressure zone draws air in through the stationary intake and down the large diameter draft tube. The air exits into the water at the propeller hub. Turbulence and flow created by the propeller breaks up the air bubbles, mixes the basin, and disperses oxygen.

Air enters the Tornado through the opening in the draft tube



Rugged Construction

Harsh wastewater environments require tough, rugged materials designed for longevity and reliability in extreme environmental conditions. The Tornado's sealed, grease-lubricated bearings allow the aerators to be used in applications with high amounts of solids, grit, or sand and in leachate treatment. The two tapered roller

bearings securely support the aerator shaft, preventing vibration and taking up all propeller thrust loads. The roller bearings are designed for up to 100,000 hours of service life. The unique self-heating bearing design allows the system to be installed in cold climates and operate year-round.

Stainless Steel Components

Durable stainless steel floats are unmatched in the industry and ensure the aerator remains buoyant for its full life, even in the harshest of environments. Proprietary engineering

ensures that the aerator runs properly throughout its service life, without timeconsuming maintenance.

Reduced Energy Costs

Every Tornado aerator is equipped with a premium efficiency motor to reduce energy costs. Larger motors are designed to work with soft



start or Variable Frequency Drive (VFD) controllers to eliminate power surge penalties and reduce energy costs.

Key Technical Features

- Available horsepower range: 2-100 hp (1.5 kW-75 kW)
- Operational speed: 1800 rpm at 60 Hz (1500 rpm at 50 Hz)
- Premium efficiency (TEFC) motors
- 304 stainless steel (standard) or 316 stainless steel (optional) construction
- Grease-lubricated bearings and a solid shaft ensure a vibration-free design

Tornado[®] Specifications

hp	kW	60 Hz Motor rpm	Motor FLA 460V	50 Hz Motor rpm	Motor FLA 380 V	Ship Weight Ib (kg)	Pontoon System Available	Pontoon System	Length in (cm)	Width in (cm)
2	1.5	1730	3.1	1425	3.7	118 (54)	a, b	2-Float (a)	72 (183)	70 (177)
3	2	1745	4.0	1450	4.8	161 (73)	a, b	4-Float (b)	145 (368)	70 (177)
5	4	1750	6.5	1445	7.9	169 (76)	a, b	6-Float (c)	145 (368)	105 (267)
7.5	5.5	1750	9.4	1445	11.6	225 (102)	a, b	8-Float (d)	145 (368)	105 (267)
10	7.5	1750	12.4	1445	15	248 (113)	a, b			
15	11	1760	18.6	1450	22.6	407 (185)	b, c		1	
20	15	1760	23.5	1450	31.4	492 (223)	b ,c		SK.	
25	18.5	1770	29.6	1460	35.2	539 (244)	b, c		D	
30	22	1770	35.5	1460	42	541 (245)	b, c	width		/ length
40	30	1770	47.1	1460	55	730 (331)	b, c		÷	
50	37	1770	59.2	1460	68	914 (415)	c, d			
60	45	1775	69.4	1465	83	1146 (520)	c, d			
75	56	1775	86.2	1465	103.5	1219 (553)	d			
100	74.5	1780	114	1480	135	1353 (1353)	d			

Markets and Industries

- Municipal Wastewater Treatment
- Aquaculture
- Wineries & Breweries
- Chemical Processing
- Pulp & Paper Mills

- Textile
- Oil & Gas
- Mining
- Dairies
- Food & Beverage Processing

Suitable Applications

- Activated sludge basins
- Sludge holding tanks/digesters
- **Oxidation ditches**
- Lagoons
- Post Aeration
- Odor and algae control/air cap
- Ice control
- Leachate treatment



Available Accessories

- Anti-erosion shields to prevent erosion in shallow (clay or earthen) basins
- Anti-vortex shield if vortexing occurs or if an aerator is operated below the standard 45 degree angle of operation
- Low-level legs to prevent damage to basin or equipment when waterlevels drop below three feet
- Walls and bridge mounts for mounting flexibility

- Swing arms to accommodate up to 15 feet of fluctuations in water elevation
- Maintenance decks built on pontoon platforms for easy servicing access
- Automatic grease lubrication equipment to reduce maintenance
- Blower add-on kit accessory to convert to blower-assisted operation

Rental units also available



The Blower Assisted TORNADO Aerator is used for wastewater treatment applications that require a higher level of oxygenation. A blower is added to the self-aspirating aerator to force additional air down the inlet hole. The blower uses a small motor, typically from 2 to 10 HP (1.5kW to 7.5 kW), that inputs more oxygen as compared to a standard Tornado aerator. The Tornado Blower-assist aerator mounts at an angle on floats or can be wall-mounted. The motor and air intake is above the surface and the propeller is submerged beneath the water.



Fluence is Your EXPERT

With thousands of installed units around the world, Fluence is your expert provider for wastewater treatment solutions. We offer all major wastewater aeration technologies and the expertise to help you select and apply the equipment best suited for your application. Our technical experts are ready to assist you with the proper sizing, layout, and operation of your aeration system.





Value from Water



AERATOR + MIXING

AER-AS

AERATOR-MIXER





FLOATING SURFACE AERATOR





MAIN CHARACTERISTICS

Axial flow aerator with patented instantaneous radial discharge. World renowned for high aeration efficiency in field conditions due to maximum transfer of kinetic energy to water surface.

Installations range from small tanks to large lagoons due to high mixing and oxygen dispersion characteristic in the form of an apple shaped flow.



ADVANTAGES

EXCELLENT EFFICIENCY IN WASTEWATER

MAINTAINS THE SAME O, IN EFFICIENCY OVER TIME

EXCEPTIONAL MIXING AND OXYGEN DISPERSION

ADAPTABLE TO SUIT VARIED WATER LEVELS

WATER LEVEL DOES NOT AFFECT EFFICIENCY

SUITABLE FOR VARIOUS LAGOONS, TANKS, OR DITCHES; ANY SHAPE OR ANY SIZE

SUITABLE FOR FIXED AND VARIABLE SPEED FREQUENCY OPERATION

UNPARALLELED WATER-COOLING CAPABILITIES - ADJUSTABLE RATE

MINIMAL NOISE IN OPERATION

LOW-AEROSOL PRODUCTION AND LOW-ODOUR EMISSION

EASE OF INSTALLATION - EVEN WHILST THE PLANT REMAINS ONLINE

MINIMAL MAINTENANCE

SIMPLICITY OF DESIGN AND OPERATION

NO GEARBOX, NO SUBMERGED BEARINGS, NO MECHANICAL SEALS, NO BLOWERS, NO PIPEWORK, OR VALVES

LONG SERVICE LIFE - NO CONSUMABLE PARTS, NO MAJOR WEAR SURFACES

100% STAINLESS STEEL CONSTRUCTION

COMPONENTS

- High efficiency motor, mooring eyes
- Guiding tubes system
- Anti-vortex Vanes
- Cone-cross
- Soft-edge liner base
- Screwpeller®
- Large stabilisation cross
- 100% Stainless steel construction
- Anti-erosion plate

OPTIONS

- Alternate WEG paint plans and colours upon request
- WEG W3Seal* with brass labyrinth seal for ultimate ingress protection
- Tropicalised Windings -Internal paint system



CONSTRUCTION

- Reduce or extended draft suction cone cross-cone to suit water level
- 3 mooring eyes
- Alternate materials of construction
 AISI 316L stainless steel; duplex stainless steel upon request
- Special cone-cross options to suit application -e.g., flow through design for oxidation ditch with varying flows characteristics

VARIOUS DRAFTS OPTIONS FOR SUCTION CONES

MIN drafts - STD draft - MAX draft

Each Aquaturbo AER-AS surface aerator has a standard depth suction cone with an associated min and max water level range. The draft can be reduced or extended within the operational limits of each model. Optimum mixing and oxygen transfer is achieved when the correct draft is selected to suit the water level.

STANDARD CONFIGURATION



WORKING PRINCIPLE AER-AS

The Aquaturbo[®] functions as an open pump. The mixed liquor of wastewater and activated sludge is aspirated via the suction cone. The unique Aquaturbo[®] Screwpeller[®] pumps the liquid axially up through the cylindrical volute, bends the liquid flow from axial to radial, and ensures that maximum kinetic energy is transferred to the water surface.

Whilst transferring the maximum kinetic energy to the water, the Screwpeller[®] achieves a high performance in pumping and oxygen transfer. Due to the design of the Screwpeller[®], the forces on the bearings are very low, so standard bearings can be used.



MOTOR DETAILS

Multiple combinations are possible.

1 Motor with remote greasing & easy access greasing system

- 2 Motor with stainless steel raincover
- **3** Motor with smart monitoring



0









3

FLANGE SUPPORT DETAILS

Multiple combinations are possible.

- Flange support with anti ragging brackets
- 2 Flange support with deflector plate
- **3** 3-leg flange support
- 4-leg flange support
- **5** Flange support with lifting bracket





FLOAT DETAILS





CROSS DETAILS

Multiple combinations are possible.

2

5

7

0

6

8

- 1 Shortened cone cross
- 2 Standard cone cross
- **3** Extended cone cross
- 4 Cage cone cross
- **5** Cone cross with anti-erosion plate
- 6 Open cone cross
- **7** Cone crosswith liner protection

3

4

8 Cone cross with mixer unit



MOORING DETAILS

Multiple combinations are possible.





With double hinged arm



Mooring cables with springs and wall brackets



Mooring cable guide brackets





OTHER ACCESSOIRIES





Electrical cable floats



TECHNICAL DATA



				WATER				
			Min waterlevel at min draft*	Min waterlevel at standard draft*	Max waterlevel at standard draft	Max waterlevel at max draft		
Model	kW	rpm	m	m	m	m		
SERIES 24 4Pol 洋 1500 rpm								
AER-AS 0075-24	0.75	1455	0.63	0.98	1.80	2.80		
AER-AS 0110-24	1.1	1460	0.69	1.00	1.90	2.90		
AER-AS 0150-24	4.5	1455	0.71	1.05	2.05	3.05		
AER-AS 0220-24	2.2	1440	0.74	0.98	2.20	3.20		
AER-A \$0300-24	3	1440	0.74	1.06	2.40	3.40		
AER-AS 0400-24	4	1450	0.80	1.11	2.50	3.50		
AER-AS 0550-24	5.5	1465	0.85	1.26	2.60	3.60		
AER-AS 0750-24-24	7.5	1465	0.90	1.33	2.80	3.80		
AER-AS 1100-24	11	1470	1.00	1.46	3.00	4.00		
AER-AS 1500-24	15	1470	1.08	1.53	3.20	4.70		
AER-AS 1850-24	18.5	1470	1.10	1.73	3.30	4.80		
AER-AS 2200-24	22	1475	1.10	1.83	3.40	4.90		
AER-AS 3000-24	30	1480	1.20	2.14	3.60	5.10		
AER-AS 3700-24	37	1480	1.24	2.08	3.80	5.30		
AER-AS 4500-24	45	1480	1.26	2.16	3.90	5.40		
AER-AS 5500-24	55	1480	1.38	2.30	4.00	5.50		
SERIES 16 6Pol $$ \pm 1000 rpm								
AER-AS0750-16	7.5	975	1.00	1.45	2.90	3.90		
AER-AS1100-16	11	975	1.09	1.68	3.10	4.10		
AER-AS1500-16	15	975	1.10	1.75	3.30	4.80		
AER-AS1850-16	18.5	975	1.15	2.11	3.40	4.90		
AER-AS2200-16	22	980	1.20	2.13	3.55	5.05		
AER-AS3000-16	30	985	1.20	2.1/	3.80	5.30		
AER-A53/00-16	37 45	985	1.20	2.28	3.90 4.05	5.40		
AER-AS5500-16	55	990	1.49	2.47	4.20	5.95		
AER-AS7500-16	75	990	1.60	2.86	4.50	6.25		
AER-AS9000-16	90	990	1.60	3.05	4.65	6.40		
AER-AS1100-16	110	990	1.90	2.95	4.80	6.55		
AER-AS13200-16	132	990	1.90	2.93	5.00	6.75		
SERIES 12 8Pol $ imes$ 750 rpm								
AER-AS 3700-12	37	740	1.49	2.39	4.20	5.70		
AER-AS 4500-12	45	740	1.53	2.47	4.35	5.85		
AER-AS 5500-12	55	740	1.79	2.89	4.55	6.30		
AER-AS /500-12	/5	740	1.85	2.99	4.80	6.55		
AER-AS 9000-12 AFR-AS 11000-12	110	740	2.10	3.41	5.00	6.75		
AER-AS 13200-12	132	750	2.14	3.40	5.40	715		
AER-AS 16000-12	160	750	2.32	3.76	5.60	7.35		
AER-AS 20000-12	200	750	2.39	3.89	5.90	7.65		

Please note :

Final aerator selection and exact draft is dependent upon many factors including basin construction (concrete, earthen, membrane liner or other), water level fluctuation; nature and degree of settled deposits, process objectives (complete mix, partial mix, laminar mix or other) and whether the influent is screened. An Anti-erosion Plate is often specified for operation in shallow earthen or membrane lined basins and when settled deposits are present.

* Min water levels 1 and 2 are draft plus 0.1m

ZONE OF INFLUENCE							
A** Hight turbulance diameter	B complete mix diameter	C oxygen dispersion diameter					
m	m	m					
2.5	7	20					
3.5	8	20					
4.5	9	28					
5.5	12	45					
5.5 C E	12	45					
0.5	13	43					
0.5	14	47					
9.5 10	15	49					
10 5	19	52					
10.5	22	70					
11 5	24	75					
11.5	24	75					
12	25	80					
13	23.5	88					
14	20	90					
10	20.5	95					
10	27	100					
10.5	18	51					
11.5	20	63					
12	23	72					
12.5	25	78					
13	27	84					
14	31	95					
14.5	33 75	100					
15 5	40	116					
16.5	44	128					
17	46	137					
17.5	50	143					
18	52	145					
15	34	103					
15.5	36	110					
16	41	119					
17	48	128					
17.5	49	135					
18	53	144					
18 5	5/	150					
19	62	157					





Please note:

Zones A, B and C are averages values depending on basin dimensions, water levels, solid concentration, operational hours per day and reactor configuration.

RANGE

•1-200 HP

• 4,6 + 8-Pole Speeds, direct drive

• AISI 304/316 or special SS



APPLICATIONS

- Aerated lagoons + basins
- Activated -sludge processes
- Aerobic digestion processes
- MBR + SBR

Model AER-AS	НР	Total Standard Height (A)	Submerged Height (B)	Float Diameter (C)	Intake Cone Cross Heiight (D)	Weight (lbs)
SERIES 30 - 1800 RPM						
0075-30	1	51	34	39	24	240
0110-30	1,5	52	35	39	26	263
0150-30	2	55	39	39	28	298
0220-30	3	56	36	39	24	310
0400-30	5	62	39	49	28	410
0550-30	7,5	72	48	49	35	536
0750-30	10	76	51	59	38	586
1100-30	15	82	52	79	38	862
1500-30	20	87	56	79	41	990
1850-30	25	102	67	79	50	1140
2200-30	30	107	72	79	55	1184
3000-30	40	116	78	79	60	1481
3700-30	50	120	78	79	60	1563
4500-30	60	128	80	91	61	2021
5500-30	75	130	82	91	65	2403
SERIES 20 - 1200 RPM						
0750-20	10	87	59	59	40	838
1100-20	15	98	62	79	44	1146
1500-20	20	100	65	79	46	1216
1850-20	25	106	69	79	48	1543
2200-20	30	117	79	79	58	1631
3000-20	40	119	79	94	58	2026
3700-20	50	125	83	94	62	2088
4500-20	60	133	87	94	65	3053
5500-20	75	141	92	94	69	3209
7500-20	100	165	109	94	84	4233
9000-20	120	167	110	118	86	4367
11000-20	150	168	110	118	86	5406
SERIES 15-900RPM						
3700-15	50	139	93	94	65	3351
4500-15	60	145	97	94	68	3726
5500-15	75	165	109	118	81	4400
7500-15	100	168	111	118	82	4708
9000-15	125	184	126	118	96	4955
11000-15	150	185	129	118	98	5456
15000-15	200	199	139	138	106	8548

All dimensions are in inches. The above dimensions are approximate for Standard Aerators.

Please contact the factory for custom options and dimension

A STEP AHEAD IN WATER TECHNOLOGY

sfa-enviro.com





AER-AS High speed floating surface aerator



FEATURES

- High oxygen transfer & dispersion
- Excellent mixing
- Direct Drive, No gearbox = low maintenance
- Simple installation & removal AISI 304/316 SS construction



Archimedes type continuous 2 blade Screwpeller **design provides flat radial** discharge maximizing energy transfer and oxygen generation.

APPLICATIONS

- Aerated lagoons & basins
- Activated sludge processes
- Aerobic digestion processes
- MBR + SBR

RANGE

• 1-250 HP (0.75 - 200 kW)

CONFIGURATIONS

- Floating
- Vertical operation
- Fixed or variable water level



COLORADO Department of Public Health & Environment

Water Quality Control Division Engineering Section

4300 Cherry Creek Drive South, B2 Denver, Colorado 80246-1530 <u>CDPHE.WQEngReview@state.co.us</u> 303-692-6298

Regulation 22: Site Location Application Form Section 22.12 - In-Kind Replacement

In accordance with Regulation 22, Section 22.12, the owner of a domestic wastewater treatment works (or its designee) that installs structures or equipment that meets the definition of in-kind replacement shall submit written notice of the nature and extent of such replacement to the Division <u>no later than fifteen (15) working days</u> after the replacement work has been put into service. Notice for in-kind replacement shall be made to the Division on the proper form. The notification may include multiple, independent pieces of equipment or structures that qualify for in-kind replacement within a single written notice of in-kind replacement. Unless waived by the Division, a site location and design review application is required for replacement of equipment outside of the property approved under the latest site application.

The Division will act expeditiously on all complete applications that have been submitted for review. For in-kind replacement site location applications, the Division has a goal to complete its final review in a total of thirty (30) days from the date of receipt of the application. In the event the work does not meet the definition of in-kind replacement, the Division shall notify the owner that the work does not meet the definition of in-kind replacement and that an application for amendment of an approved site location is required.

"IN-KIND REPLACEMENT" means replacement of any process treatment component or hydraulic conveyance component at an existing, approved domestic wastewater treatment works with a similar (i.e., not exactly alike or identical) component as part of normal or emergency replacements to assure continued compliance with applicable site location, design, and permit conditions, including effluent limitations. Replacement or technology upgrades that do not change the original intent of the equipment or structure being renovated, do not impact the design capacity, and do not require the application of alternate design criteria (e.g., change from chemical to ultraviolet light disinfection) qualify as in-kind replacement. In-kind replacement does not include operations and maintenance activities or identical replacements of any process treatment component or hydraulic conveyance component at an existing approved domestic wastewater treatment works; these activities may proceed without Division notification or site location approval.

A. Project and System Information						
System Name	Town of Paonia					
Project Title	Lagoon 1 Aeration Replace	ment				
County	Delta					
CDPS Permit No.	CO0047431					
Original Site Location Approval No.	4781 Date of Site Location Approval August 20, 2007					
Design Company Name	RESPEC Company, LLC					
Design Engineer	James Starnes	0052530				
Address	5540 Tech Center Drive					
Address	Colorado Springs, CO 80919					
Email	james.starnes@respec.co m	Phone	719.227.0072			
Applicant/Entity	Town of Paonia					
Representative Name	Cory Heiniger					
Address	PO Box 460					
Address	Paonia, CO 81428					
Email	coryheiniger_PW@towno fpaonia.com Phone 970.527.4101					

B. Site Location Decision Process					
The engineering report submitted with the application shall meet all requirements of Section 22.4, including containing all information pursuant to Sections 22.3 and 22.5.	Refer to Report				

C. Existing Domestic Wastewater Treatment Works Information	n
Identify all site location and amendment approval numbers and stipulated design approval capacities (flow and load).	Hydraulic capacity: 0.495 MGD Organic capacity: 560 lbs. BOD5/day Refer to report section 1.1
Identify the name of the treatment works, whether it is a treatment plant, lift station, or interceptor.	Town of Paonia Wastewater Treatment Facility
Provide a process description of the existing treatment works, including the original design intent of the existing equipment, structure, or component to be replaced.	Refer to report section 1.2
D. In-Kind Replacement Details	
Provide a description of the project including a discussion of how the in-kind replacement is required to ensure continued compliance with applicable site location, design, and permit conditions.	Replace existing floating surface aerators with new floating surface aerators to increase concentration of dissolved oxygen and promote mixing. DO conc. affect treatment of BOD and nitrogen. Refer to report section 2.1
Date of installation of original equipment and installation date for in-kind replacement or anticipated date of construction or need.	Original equipment deployed in 2007, proposed equipment to be deployed April 2025. Refer to report section 2.1
Description of the existing and proposed equipment, structure, or component to be replaced including physical sizes, power, capacities, compliance with the design criteria, etc. The applicant shall provide the information critical to demonstrating that the proposed change meets the definition of in-kind replacement, which may include the submittal of calculations and supporting data.	Aeration and mixing assumptions unavailable for existing equipment. Proposed equipment will comply with design criteria and provide adequate aeration and mixing. Refer to report section 2.2
Discuss the reason for the in-kind replacement, which could include such reasons as service life or equipment failure. For service life, the applicant should provide the original installation date and expected design life of the equipment.	Equipment failure of existing equipment. Refer to report section 2.1
Discuss whether the existing equipment, structure, or component received a variance, site-specific deviation, or alternative technology acceptance as part the original site location or design approval process, and if so, describe the specifics of the conditional approval.	N/A
Identify the discharge permit number for the treatment plant or the treatment plant receiving the flow, if the application is for a lift station or interceptor sewer.	N/A

I hereby certify that the information presented above is accurate and complete.						
Applicant Legal Representative or Authorized Representative						
Position/Title	Typed Name	Signatur	Lang /			Date
Town Administrator	Stefen Wynn	X.	APP'V'	$\chi \sim$		4/1/2025
Email	Phone) ()			
stefenw@townofpaonia.com	stefenw@townofpaonia.com 970.527.4101					




DATE:March 24, 2025FROM:Colorado Water Quality Control DivisionRE:Temporary Discretion for COG591000 Certifications

The Water Quality Control Division acknowledges that certain terms and conditions incorporated into newly issued certifications under the COG591000 permit (domestic wastewater treatment plants that discharge to receiving waters that are unclassified; use protected; reviewable; or are designated threatened and endangered species habitat) issued by the division for discharging wastewater from your treatment system may present compliance challenges for certain facilities authorized to discharge under the permit. Through this communication, the division will pause on initiating enforcement actions for entities certified under the COG591000 permit, as set forth below.

Until further notice, the division will exercise enforcement discretion on the following terms and conditions of certifications issued under the COG591000 permit for all certified facilities:

- Effluent limitations and monitoring.
 - The division will <u>not</u> take enforcement action for exceedances of effluent limitations contained in the certification.
 - The division will <u>not</u> take enforcement action for failure to monitor or report for Whole effluent toxicity (WET) requirements.
 - However, Permittees are required to continue to monitor for parameters included in their previous permit or certifications (e.g., certifications under COG589000, COG588000, or individual permit) and report the results of such monitoring on Discharge Monitoring Reports in accordance with the Permit.
- Compliance schedules and special studies.
 - If the permit certification contains compliance schedules, the division will <u>not</u> take enforcement action for non-compliance with compliance schedules to meet future effluent limitations (e.g., activities to meet total ammonia and/or total inorganic nitrogen final effluent limitations).
 - The division will <u>not</u> take enforcement action for non-compliance with special study requirements for groundwater protection requirements (e.g., lining lagoons) and for inflow and infiltration studies, which are included in some, but not all, permit certifications.
 - Permittees must comply with report-only requirements in any special studies in the certification (e.g., provide the accurate latitude and longitude of your outfall location).

While the division will not initiate enforcement actions for the items mentioned above, it expects permittees to continue properly operating and maintaining their current wastewater treatment systems. This includes maintaining compliance with the following Regulation 62 standards and effluent limitations in

permit certifications: BOD₅, total suspended solids, total residual chlorine, pH, and oil and grease. Some discharges to irrigation ditches do not include requirements for total residual chlorine. If your certification does not include this requirement, you do not need to comply with the requirements for total residual chlorine. The results of such monitoring shall be reported on Discharge Monitoring Reports in accordance with the Permit.

The division requires permittees to comply with all other terms and conditions in their permit certification.

Additionally:

- This enforcement discretion does not apply to permittees currently under an open formal enforcement action (Notice of Violation, Cease and Desist Order, Clean Up Order, Order for Civil Penalty, or District Court Action). Permittees with an open action should contact their compliance & enforcement specialist.
- While the division intends to honor the provisions of this memo until further notice, the commitments in this memo do not limit or preclude the division from pursuing action in the future, should conditions warrant formal enforcement.
- This memo is not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party in litigation with the division. The division reserves the right to act at variance with this memo if warranted by the particular facts in question. The division also reserves the right to change this approach at any time, with appropriate notice.

The division is working to address concerns expressed by permittees. As it develops a more formal plan, the division will work closely with COG591000 permittees to ensure the plan addresses these concerns. Implementing this plan will require additional information from permittees and the division looks forward to partnering with permittees on this effort.

If you have any questions regarding this memo or the discretion provided, please contact the Clean Water Program Manager, Nathan Moore, at <u>nathan.moore@state.co.us</u> or (720) 263-6232.

