STATE OF COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

# Cross/Caribou Potential NOV

**DPollock@nedmining.com** <DPollock@nedmining.com> Thu, Oct 21, 2021 at 10:18 AM
To: Jacob Dyste - CDPHE <jacob.dyste@state.co.us>
Cc: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>, "Cunningham - DNR, Michael" <michaela.cunningham@state.co.us>

Jacob,

Please find attached supplemental information to our previous correspondence. Please contact me at your earliest convenience to discuss.

Thank you,

Daniel Pollock

Regulations and Permitting

Grand Island Resources

Nederland Mining Consultants

720.207.5154 – Office

312.342.6145 – Cell

**8 attachments**

- **2021_OCTOBER_WQCD_NOVRESPONSE_10-21-21.pdf** 143K
- **attachment 1.pdf** 232K
- **attachment 2.pdf** 293K
- **attachment 3.pdf** 64K
- **attachment 4.pdf** 962K
- **attachment 5.pdf** 229K
- **attachment 6.pdf** 23K
- **attachment 7.pdf** 86K

GRAND ISLAND
RESOURCES

P.O. Box 3395
Nederland, CO 80466
October 21, 2021

October 21, 2021

CDPHE
WQCD – Permits and Enforcement Division
WQCD-PE-2 Attn Mr Jacob Dyste
4300 Cherry Creek Drive South
Denver, CO 80246-1530
Reference: CDPS Permit Number CO-0032751
August 10, 2021, Potential Notice of Violation

Mr Dyste,

Grand Island Resources (GIR) hereby provides information supplemental to our letter submitted to your attention on October 7, 2021, regarding the Potential Notice of Violation for CPDS Permit Number CO-0032751. As presented in that letter, GIR has taken a pro-active approach to bring our treatment system into compliance as quickly as possible.

As indicated in our letter, GIR implemented in July a treatment system on trial basis (namely The OPEL treatment system) which unfortunately has proven ineffective; GIR is, therefore, in the process of removing the OPEL system from the site. The positive outcome of the OPEL 3-month trial is that GIR has collected additional data to move forward with an alternative engineered design based on an improved understanding of the site water composition and water treatment principles.

GIR proposes the use of Clear Water/Graver treatment system as outlined in the Nederland Mine Dewatering Project Quote 10-11-2001 (attachment 1). Clear Water/Graver and GIR have considered new information from unpublished recent filtration studies (attachment 3) as well as industry knowledge to re-design a treatment system that aims to be predictable and effective in treating our current and projected source water quality.

A comprehensive sampling plan and analysis has been provided by Graver (attachment 2) along with the internal filtration study, to form the basis for implementing the treatment in an expedited fashion. Both Cross and Caribou source water samples have been shipped to Graver, and bench scale testing and analysis are underway. Published Cut Sheets for the Clear Water treatment system (attachment 4) and Metsorb media (attachment 5, 6 and 7) are attached.

The Phase #1 Immediate Treatment Option is a stripped-down system which will allow for the quickest mobilization timeframe (7-10 days, pending bench scale testing and specific equipment availability).

The Phase #2 Temporary Treatment System will continue to be developed as the Immediate Treatment System is implemented. Data will be collected to ensure the Temporary System is designed for maximum effectiveness. This includes the on-going bench scale testing. The

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P.O. Box 3395
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October 21, 2021

Temporary System will be in place for approximately 6 months, while GIR works with Clear Water/Graver and the State to design and engineer a permanent solution.

GIR current ownership and management are committed to environmental compliance and environmental responsibility is paramount for the corporation.

Our goal is to stabilize the existing conditions in and around the Cross/Caribou mines and move towards extracting minerals to ensure profitability incentives needed to establish carbon neutral processing and use this model to remediate other sites throughout Colorado. GIR understands that if this initiative cannot be accomplished in a responsible, professional manner, with significant environmental net gains, it should not be pursued.

We look forward to working with all State agencies to accomplish these goals.

If you have any questions or concerns or would like to discuss further, please do not hesitate to contact me.

Sincerely,
Daniel Pollock

Grand Island Resources, LLC
dpollock@nedmining.com
720.207.5154

| | | |
|---|---|---|
| cc: | Amy Eschberger | DRMS |
| | Michael Cunningham | DRMS |

# Environmental Site Solutions, LLC

| | | |
|---|---|---|
| DATE | : | 10-11-2021 |
| TO | : | Danny Pollock / Greg Miller |
| COMPANY | : | Grand Island Resources LLC - Nederland Mine |
| FROM | : | Mike Tallering |
| SUBJECT | : | Phase I & Phase II Temporary Water Treatment Systems |
| PAGES | : | 2 (Including Cover) |

Danny / Greg,

Per your request, please see the following revised pricing for supply and delivery of temporary water treatment system for your project while permanent system is designed & fabricated

## Phase #1 – Emergency Treatment (7-10 Day Lead Time)

We can provide treatment vessels & Graver Metsorb HMRG media to polish metals and 'pilot' removal efficiency & EBCT.

| | | |
|---|---|---|
| **(2)** | **2,000 lb. Media Pressure Vessels for Metsorb Media** | **$975/vessel/mnth** |

***Additional Fixed Costs:***

| | | | |
|---|---|---|---|
| **(1)** | **Mobilization & Delivery of Systems to Project Site** | | **$5,850** |
| **(1)** | **Metsorb HMRG Media for Above Media Filters** | **$24,750/vessel** | **$49,500** |
| **(1)** | **Installation, Start-up & Training** | | **N/A** |
| **(1)** | **End of Project Demob & Delivery back to ESS** | | **$5,850** |

***Note:***

- We do not currently have rental pump or bag filter housing but can help you source locally for short term rental

## Phase #2 – Temporary Treatment System (3-5 Week Lead Time)

***Rental Pricing for the Below Equipment System: $14,850/month***

***Includes:***

**(1) 20' Shipping Container: Insulated with Double Coat Temp Coat 101, Heater (2x), 480V Service Disconnect, Interconnecting Plumbing/Hoses w/ 4" Flanged Inlet/Outlet**

**(1) 10 HP Pump w/ Controls**

**(2) Dual Stage Bag Filter Units, Manual Operations Req'd.**

**(2) 2,000 lb. Media Pressure Vessels for Metsorb Media**

***Additional Fixed Costs:***

| | | | |
|---|---|---|---|
| **(1)** | **Mobilization & Delivery of Systems to Project Site** | | **$8,750** |
| **(1)** | **Metsorb HMRG Media for Above Media Filters** | **$24,750/vessel** | **$49,500** |
| **(1)** | **Installation, Start-up & Training**<br>- Includes (3) days on-site, (2) ½-day, & travel & per diem costs | | **$5,500** |
| **(1)** | **End of Project Demob & Delivery back to ESS** | | **$8,750** |

Notes:

- Above Pricing is for a minimum of (6) month duration
- Lead time to ship is 3-5 weeks ARO
- System will be manually operated. Permanent system will be automated

***Not Included In Above Scope :***

- Off-loading at site and placement of containerized system not included in above
- Plumbing from pump to containerized system not included in above
- Electrical work not included in above
- Operation of system not included in above

All pricing is valid for 60 days from above date. Pricing does not include any taxes, duties or applicable fees.

Thank you for the opportunity to provide pricing to you on your activated carbon needs. Please feel free to contact me with any questions or comments that you may have. You can reach me at 360-503-7299 or via email at mike.tallering@envirositesolutions.com.

**Mike Tallering**
Environmental Site Solutions
mike.tallering@envirositesolutions.com
www.envirositesolutions.com
**360-503-7299**

Graver Technologies

***Environmental Site Solutions – Nederland Mining***
***Cross Tunnel Dewatering for Cd and Zn***

# 1.0 INTRODUCTION :

Environmental Site Solutions contacted Graver Technologies to determine if mine water containing cadmium, zinc, and other contaminants. There are two sites that can be compared based on the data presented to Graver. Site 1 is the Caribou Tunnel Site. Site 2 is the Cross Tunnel Site.

Both water chemistries have been analyzed by the customer and are attached (Appendix 1). Both water samples were treated by filtration: a 5 um, 0.45 um and a 0.1 um filter. The samples for Caribou show that filtration removes all of the contaminants including cadmium, zinc, copper, lead, and silver. This indicates that contamination in the Caribou water is mostly solid. Filtration alone should clean the site. The same filtration was carried out on the Cross water. The Cross water, however, did not filter as well. The cadmium was mostly soluble with ~ 93% of the concentration passing through the filters. The zinc was also mostly soluble with 92% of the concentration passing through the filters. Lead and silver were removed completely.

MetSorb® products have been known and used to treat many ions. Cadmium, one of the contaminants of concern, should be mostly $Cd^{2+}$ in a pH of 0-7. Above 7, the Cd may convert to cadmium hydroxide ($Cd(OH)_2$).[1] Other Pourbaix diagrams show the conversion of Cd to other species around a pH of 8.5 or higher. These Pourbaix diagrams are guiding documents to determine how media may adsorb the contaminant. Zinc, the other major contaminant at Cross is also mostly $Zn^{2+}$ at a pH of 0-7.5. After 7.5, the zinc starts converting to zinc oxide. [2]

MetSorb® HMRG is known to remove both cations and ions, depending on the specific water chemistry. While some of the mechanisms are understood, others are not. There are several case studies and experimental results that show MetSorb® HMRG can remove both cadmium and zinc.

One case study for cadmium removal concluded:

> "Despite being at a significantly lower concentration than the other metals, cadmium adsorption performance also followed a trend of steady concentration decrease over time. The fine (0.1µm) filtration step reduced the starting concentration by 13% indicating the presence of insoluble cadmium . The separate granular activated carbon (GAC) filtration

[1] https://boris.unibe.ch/109643/1/1.4980127.pdf
[2] https://commons.wikimedia.org/wiki/File:Zn-pourbaix-diagram.svg

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step removed only 5% of the cadmium present and not much more than the (2.7um) pre-filter used prior to beginning the stirred batch equilibrium testing. The stirred batch equilibrium testing demonstrated the selectivity of MetSorb® HMRG for cadmium in this waste water matrix despite the much higher concentration of other metals present. Due to the evidenced selectivity, it is clear that cadmium removal will occur and that the extent of reduction will be a function of media volume and contact time."

This study was conducted at a customer site with over 350 ppb of cadmium.

In testing for zinc removal one experimental study showed that HMRP (the powdered version of MetSorb® HMRG) could remove 97% of the zinc from a pH 6.5 and a pH 8.5 solution. The zinc had initial concentrations from 291-815 ppb. The measured capacity of the media for this test was 0.768 mg Zn/ dry gram of media. Other media specifically designed for cation removal resulted in higher % removal and capacities.

Another case study tested both MetSorb® HMRG and MetSorb® STG for the removal of multiple metals. Both HMRG and STG removed Cd and Zn at over 7,000 bed volumes (BVs) before Zn broke through (~ 800 ppb initial) and over 8,000 BVs before Cd broke through (~550 ppb initial).

## 1.1 Test Objectives

The customers would like to know and understand how to best design and implement a system using MetSorb® products (HMRG or others) to attain Zn and Cd concentrations below the daily maximum concentrations permitted by the state (Colorado) (Table 1).

**Table 1. Regulatory Limits for Mine Dewatering Effluent.**

| Element | 30-day average, ppb | Daily Maximum, ppb |
|---|---|---|
| Cd | 0.60-0.89 | 2.2-3.7 |
| Zn | 176-262 | 182-301 |

Key objectives:

- Determine if, in laboratory testing, the MetSorb® HMRG product can remove Cd and Zn.
- Determine, if possible, the expected capacities of the media.
- Determine, if possible, the contact time required for efficient treatment of the ions.

## 1.2 Scope of Test:

- Water from the site will be sent to Graver Technologies for testing.
    - Water will be sent back to the site after treatment.

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- A modified kinetic isotherm test will be used to determine how quickly the contaminants (Cd / Zn) are reduced to their minimum levels.
- The kinetic isotherm will be evaluated over at least 4 time periods including an overnight batch test. The results of the batch test with overnight contact time will help to build the standard isotherm curve.
- Graver Technologies will not be modifying the water after it has been received. It should arrive filtered and close to the pH measured from the site.
- Analytical testing of the samples will be limited to the contaminants of concern. An outside laboratory may be used for final analysis and reporting.
- A report, conclusion and recommendation will be completed at the end of testing. This will be transmitted to the customer.

### 1.3 Schedule

- Testing: 1 week after receiving water.
- Analysis: 1 week after test completed.
- Reporting: 1 week after analysis received.

## 2.0 Methodology

The nature of the low levels of cadmium will necessitate having a variation of volume to mass ratios (V/m). The three V/m ratios will be : 1,000 mL/g; 50,000 mL/g; and 100,000 mL/g. Changes to this may be made to adjust to a higher V/m ratio if necessary. These spread gives us a relative distribution to get usable data. Two or three media will be used to either generate a baseline for comparison or to determine if another media will be useful in the extraction of Cd and Zn.

ICP-MS will be used to determine the concentration of Cd and Zn both before and after contact. This may be conducted internally or by an outside laboratory depending on the concentration and resource load.

### 2.1 Needed Water Volume

To complete the testing with the volumes listed above, we will need no more than 3 gallons of water. If more convenient, 5 gallons can be sent.

## 3.0 Reporting

After the tests are complete, a report will be generated. The report will include: An executive summary, introduction, methodology, results and discussion and conclusions. Anticipated graphs include kinetic graphs showing the expectation for necessary contact time and isotherm graphs to estimate the capacity of the media under these conditions.

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## 4.0 Cost

Costing is based on the number of samples and the direct and indirect analytical cost associated to Graver Technologies. Based on the testing provided, the cost will be within the range of $2,500-$5,000 and to be billed through Environmental Site Solutions.

## 5.0 Shipping

When collecting the water please take the pH prior to shipping. When ready, please ship water to:

Dr. Joshua Mertz
Graver Technologies
200 Lake Drive
Newark, DE 19702

## Filtration Study

| COMPLIANCE COMPOUND | Caribou Tunnel Source Water PASS - FAIL Filtration size in microns | | | | Cross Tunnel Source Water PASS - FAIL Filtration size in microns | | | | 30-Day Average | 7-Day Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Caribou UF | Caribou 5.0 | Caribou 0.45 | Caribou 0.10 | Cross UF | Cross 5.0 | Cross 0.45 | Cross 0.10 | | | |
| Total Alkalinity | 122.5 | 118.5 | 122.2 | 119.1 | 77.6 | 78.5 | 75.6 | 76.5 | | | |
| Bicarbonate | 122.5 | 118.5 | 122.2 | 119.1 | 77.6 | 78.5 | 75.6 | 76.5 | | | |
| Carbonate | | | | | | | | | | | |
| Chloride | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | | | |
| Fluoride | 0.1 | | | 0.2 | | | | | | | |
| Silica (as Si) | 5.5 | 5.4 | 5.5 | 5.5 | 6.0 | 6.1 | 5.9 | 6.2 | | | |
| Nitrate Nitrogen | 0.5 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | | | |
| **pH** | **8.0** | **8.1** | **8.1** | **8.1** | **7.8** | **7.8** | **7.8** | **7.8** | 6.5-9 | 6.5-9 | 6.5-9 |
| Sulfate | 12.0 | 11.9 | 12.0 | 11.9 | 11.1 | 11.2 | 11.1 | 11.2 | | | |
| **Total Suspended Solids** | **108.0** | | | | **10.0** | | | | 30 | 45 | |
| Turbidity | 43.00 | 0.03 | 0.04 | 0.02 | 5.98 | 0.08 | 0.10 | 0.17 | | | |
| Total Hardness | 132.5 | 117.2 | 117.6 | 118.5 | 77.3 | 78.1 | 77.5 | 77.2 | | | |
| Aluminum (ug/L here down) | 2,782 | 2 | 4 | 3 | 148 | 8 | 6 | 9 | | | |
| Antimony | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Arsenic | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | | | |
| Barium | 111 | 53 | 53 | 51 | 58 | 55 | 55 | 55 | | | |
| Beryllium | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Boron | 30 | 30 | 20 | 90 | 0 | 0 | 0 | 0 | | | |
| **Cadmium** | **1.30** | **0.10** | **0.00** | **0.00** | **2.90** | **2.80** | **2.70** | **2.70** | 0.60 to 0.89 | | 2.2 to 3.7 |
| Calcium | 28,800 | 25,800 | 26,000 | 26,100 | 19,100 | 19,500 | 19,200 | 19,000 | | | |
| Chromium | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Cobalt | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | | | |
| **Copper** | **26** | **0** | **0** | **0** | **8** | **4** | **4** | **4** | 13 to 19 | | 18 to 28 |
| Iron | 5,894 | 0 | 0 | 0 | 349 | 0 | 0 | 8 | | | |
| **Lead** | **156** | **0** | **0** | **0** | **20** | **2** | **2** | **2** | 3.6 to 5.4 | | 85 to 135 |
| Magnesium | 14,720 | 12,850 | 12,790 | 12,960 | 7,200 | 7,140 | 7,180 | 7,220 | | | |
| Manganese | 909 | 25 | 25 | 25 | 62 | 45 | 44 | 44 | | | |
| **Mercury** | **NA** | | | | **NA** | | | | 1 | | 2 |
| Molybdenum | 6 | 6 | 6 | 6 | 7 | 6 | 6 | 6 | | | |
| Nickel | 11 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | | | |
| Potassium | 2,800 | 1,400 | 1,400 | 1,400 | 1,300 | 1,200 | 1,200 | 1,200 | | | |
| **Silver** | **5.30** | 0.00 | 0.00 | 0.00 | **0.60** | 0.00 | 0.00 | 0.00 | 0.11 to 0.17 | | |
| Sodium | 2,400 | 2,300 | 2,300 | 2,300 | 1,800 | 1,800 | 1,800 | 1,800 | | | |
| Strontium | 417 | 380 | 382 | 370 | 143 | 137 | 135 | 135 | | | |
| Uranium | 7 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | | | |
| Vanadium | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | | | |
| **Zinc** | **251** | **18** | **21** | **16** | **343** | **325** | **319** | **316** | 176 to 262 | | 182 to 301 |

# CESF-series 20

CLEAR WATER SERVICES


The CESF-20 is an all-inclusive water treatment unit designed to treat misc. contaminants and pH in stormwater, ground water, and industrial wastewater.

## Functions

Constructed in a conex box, the CESF-20 is designed to served as an all-inclusive, robust, water treatment system combining multiple components: chemical injection, water quality monitoring, controls and internal pressurized sand filtration.

CA, OR and WA Compliant

## Operating Capacity

Discharge/Treatment Rate: 100 - 350 GPM

## Versatile

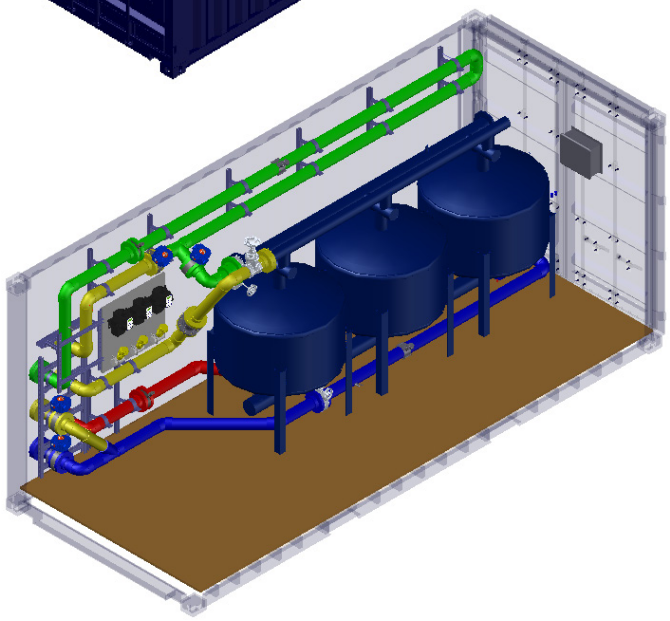
Addresses multiple constituents of concern including turbidity, pH, metals, hydrocarbons and pesticides.

Not only a control unit for the treatment system, the CESF-20 is designed to also act as an on-site laboratory, monitoring station, and weather station.

## Smart

Equipped to remotely transmit water quality and alarm data information. Remote access to HMI.

System safeguards keep you compliant in the worst conditions with automatic recirculation, when needed. On-site weather station, float system, and the email messaging alarm warning provide a safety network unlike any other in the industry.

## General overview

***System Specifications***

Footprint:
20.0’ L x 9.0’ W x 8.0‘ H

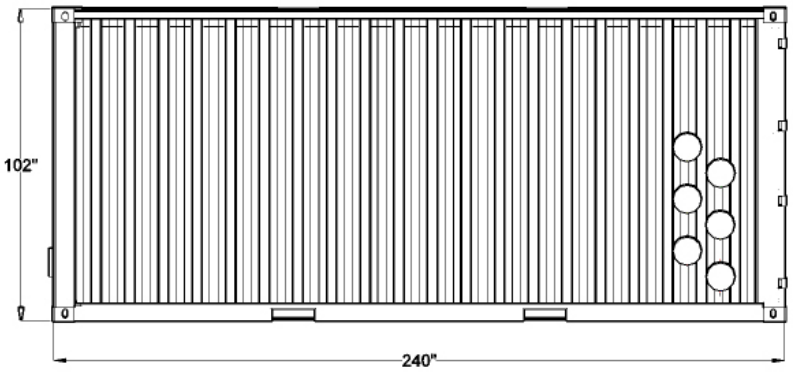
Interior sand filters

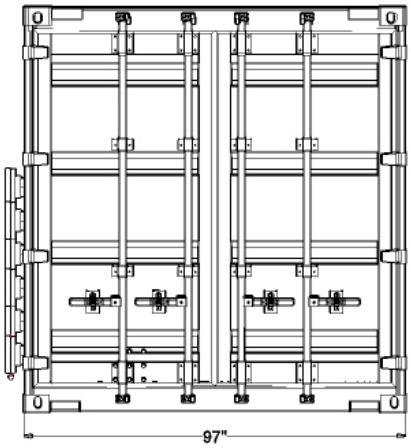
Control Options:
Allen Bradley PLC (CL, MC)
HMI Interface Options

Power Requirements:
60 - 100A
480V 3-phase

Weight:
~14,000-lbs.

Automated Features:
Alarm and Email Messaging Transmission
Pump Controls
Automated & Remote Operations




## System features

***Standard***

Capable of addressing multiple pollutants of concern

System safeguards to prevent discharges outside of preset parameters

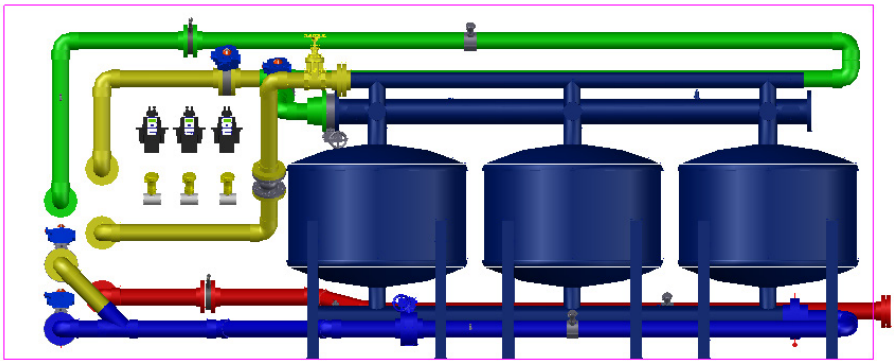
In-line monitoring and water quality data for raw, influent and discharge water

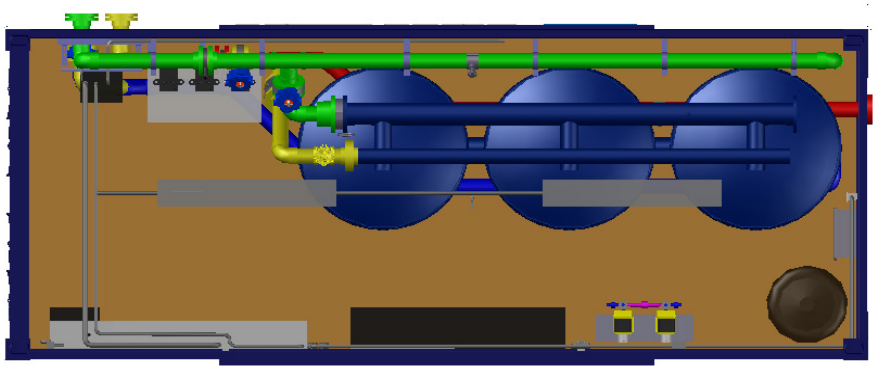
Radio telemetric data collection and transmission

Self contained lab and weather station

***Add-On***

Dashboard Ready





Graver Technologies

Filtration | Separation | Purification

# MetSorb® ADSORPTION MEDIA

## Multiple Heavy Metals Removal for Construction Dewatering

Dewatering is a very common necessity prior to discharge into surface waters or storm sewers leading to surface waters. These waters are protected by the EPA's National Pollution Discharge Elimination System (NPDES) and commonly specific state regulations. In certain locations, these regulations can get extremely tough to achieve. Specific to heavy metals removal, even naturally occurring ones can lead to potential permit violations.

It is common for the water initially tested for to change as pumping commences and this can lead to other metal being discharged out of compliance. MetSorb® can help eliminate that unknown. MetSorb® can maintain compliance on multiple metals at the same time. This reduces the headaches associated with permit violations.

### Contaminants

- Arsenic III
- Arsenic V
- Cadmium
- Copper
- Antimony
- Mercury
- Lead
- Vanadium
- Uranium
- Zinc
- Nickel

- Remove multiple metals at once
- Not preferential (won't bleed off)
- Not impacted by TDS
- pH adjustment not necessary.
- Polishing to parts per billion (micrograms/liter, µg/L) *or* parts per trillion (nanograms/liter, ng/L) levels
- Smaller Vessels and less media used because of extremely fast kinetics
- Non-hazardous ALWAYS when disposing

For more information on MetSorb® arsenic adsorbent media contact Bennett Buchsieb at **302-383-9310**, or by email at **bbuchsieb@gravertech.com**


Graver Technologies

200 Lake Drive, Glasgow, DE 19702 U.S.A.
302-731-1700 • 800-533-6623 • Fax: 302-369-8356
e-mail: info@gravertech.com • **www.gravertech.com**


Member of:

NSF/ANSI 61 D040211

American Water Works Association
The Authoritative Resource on Safe Water℠

Water Quality Association

Rural Water Association

Graver Technologies

Filtration | Separation | Purification

# MetSorb® – Heavy Metal Adsorbent Media
# Contaminant Removal Efficiency

| METAL | Initial Concentration | | % Removal |
|---|---|---|---|
| $As^{+5}$ | 50 | ppb | 99.99 |
| $As^{+3}$ | 50 | ppb | 99.99 |
| Chromium | 1,000 | ppb | 98.6 |
| Lead | 1,000 | ppb | 99.2 |
| Copper | 500 | ppb | 99.5 |
| Uranium | 100 | ppb | 99.3 |
| Mercury | 500 | ppb | 97.4 |
| Cadmium | 1,000 | ppb | 98.9 |
| Selenium (as Selenite) | 500 | ppb | 98.6 |
| Antimony | 500 | ppb | 99.1 |
| Zinc | 500 | ppb | 99.5 |

METSORB™ is a highly effective adsorbent that removes Arsenic III & V, and a wide variety of heavy metals including Lead, Chromium, Selenium, Uranium and Vanadium from aqueous sources.

For more information on MetSorb® arsenic adsorbent media contact Bennett Buchsieb at 302-383-9310, or by email at bbuchsieb@gravertech.com

Graver Technologies

200 Lake Drive
Glasgow, DE 19702

# MetSorb® HMRG (Heavy Metal Removal Granules) – 16/60 US Mesh

## Recommended Operational Design Parameters

| OPERATING PARAMETER | MetSorb® HMRG 16/60 |
|---|---|
| **Service Flow Rate** (Hydraulic Loading) | 5-10 gpm/ft$^2$ |
| **Flow Direction** | Typically Downward (Up-flow under certain conditions) |
| **Empty Bed Contact Time** (EBCT) | 1.5-3.0 Minutes (Water Quality Dependent) |
| **Maximum System Pressure** | 100 psi |
| **Backwash Flow Rate** | 3-7 gpm/ft2 |
| **Backwash Bed Expansion** | 40% |
| **Backwash Volume** | 5-7 Bed Volumes |
| **Vessel Freeboard** | 50% of Bed Depth |
| **Typical Minimum Bed Depth** | 22 Inches |
| **Maximum Continuous ORP** | 100 mV |
| ***Sanitization Chlorine Concentration** | 25-50 ppm (for maximum 24 hr hold) |

***Chlorine acceptable for sanitization only, high level extended exposure will degrade the MetSorb® HMRG media.**

**MetSorb® HMRG** is a highly effective granular adsorbent that reduces Arsenic III & V and a wide variety of heavy metals including Lead, Uranium, Antimony, Zinc, Radium, Cadmium, Copper, Chromium and Vanadium from drinking water and process solutions. For more information on MetSorb® adsorptive media, please contact Bennett Buchsieb at 302-383-9310 or by email at bbuchsieb@gravertech.com