



OURAY SILVER MINES

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Revenue Virginius Mine GW-4 Characterization and Replacement

Technical Revision No. 12
CDRMS Permit No. M-2012032
March 1, 2021

Prepared with:

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Ridgway, CO 81432



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1 Introduction

This Technical Revision (TR) to the Revenue-Virginus Mine Division of Reclamation, Mining, and Safety (DRMS) Permit No. M-2012-032 (Permit) requests approval for replacement of groundwater monitoring location GW-04 with a new well, GW-4R in response to the discovery of what we believe to be historic organic residue in monitoring well GW-4. This TR is submitted in response to a DRMS request for Corrective Action and Revisions (February 1, 2021), following verbal discussion of the issue with DRMS. Supporting information is presented under the following sections, background information (Section 2), project rationale (Section 3), construction and implementation (Section 4), and reclamation (Section 5).

2 Background Information

The Revenue-Virginus Mine (the Mine), owned and operated by Ouray Silver Mines Inc. (OSMI), is an active silver mine located approximately 5 miles southwest of Ouray Colorado along County Road 26. The Sneffels District has a rich mining history that began with the staking of the Virginus in 1876 in Governor Basin. The Revenue Tunnel was built as a lower access point to the Virginus in 1893. The bulk of mining activity occurred from 1878 through 1912, with intermittent mining since. The Mine is currently permitted to operate under Amendment 1 to DRMS designated mining permit (112-d) M-2012-032. The Mine is in a state of construction and development, moving towards ore production.

Several Technical Revisions (TRs) to Amendment 1 of M-2012-032 have been filed over the recent years. These revisions, summarized below, have focused on improved mill functioning, waste reduction, and improved environmental protocols. Recent TRs are summarized briefly below.

TR11 – Updated the water monitoring program. Allowed placement of Pilot Passive Water Treatment Materials within permit boundary. Updated reclamation plan to incorporate Waste Storage Pad and address minor modifications to topsoil placement.

TR10 – Allowed the construction of the five-stage passive treatment system with discharge to surface water as permitted through CDPHE (CO-0000003 Modification 5) along with monitoring well GW-4 (Figure 1). GW-4 intended to expand groundwater monitoring as the site moved towards production and facilities expanded in the downstream direction to better monitor the entirety of the operation.

TR09 – Updated groundwater standards, allowed the sale of mixed tailings and waste rock as road base, allowed for the relocation of buildings and construction of additional sheds.

TR08 – Allowed for infiltration of mine discharge to groundwater following passive treatment in a sulfate reducing bioreactor.

3 Project Rationale

The Mine hired contractor Catamount Drilling of Montrose, CO to drill monitoring well GW-4, permitted in TR-10, in August 2020. Map 1 shows the location of GW-4. The presence of

organics in the well was first noted during well development and subsequent sampling. Field notes from the Mine's third-party sampler (PureWater Systems of Ridgway, Colorado) indicated oil and grease in the well on November 12, 2020 that were originally attributed to drilling fluids. OSMI attempted (Table 1) to remove the organics through the use of absorbent socks and bailing. Produced water was captured in buckets and taken to lined sumps in the shop for proper disposal. With little improvement in water quality, OSMI probed the bottom of the well with a sludge judge (a hollow clear tube), discovering a foot of orange/brown petroleum scented material remaining in the bottom of the well. OSMI contacted DRMS regarding the issue. Results from sampling performed following discussion with DRMS are described below.

3.1 GW-4 Characterization and Monitoring

In response to DRMS's February 1, 2021 letter, OSMI established a new surface water sampling location, SW-22 and gathered data from GW-4 to evaluate the nature and extent of organic substances found in GW-4. OSMI has obtained Safety Data Sheets from the driller (Appendix A) and obtained initial grab samples (GRO, DRO, MTBE, BTEX, and Oil and Grease) from GW-4 and the new surface water sampling location SW-22 (Map 1). OSMI chose SW-22 because i) it is currently the closest, safely accessible monitoring point, which is accessed by hanging the bladder pump from the bridge, and ii) OSMI has been considering adding a stream monitoring station at the bridge because it is below the outfall and the natural durable channel lends itself to flow measurement via a rating curve once the channel shape is determined and gauging-marks are established.

Initial results from GW-4 and SW-22 are presented in Table 2 with complete lab reports in Appendix B. Oil and grease data has not yet been received. As noted in Table 2, Diesel range organics (DRO, C10-C28) were detected in GW-4 at relatively low concentration of 8.44 mg/L and at SW-22 at 0.3 mg/L. There is no standard for DRO in The Basic Standards and Methodologies for Surface Water (Colorado Regulation 31) or Groundwater (Regulation 41). Nonetheless, OSMI notified the Water Quality Control Division spill hotline of the detection in surface water immediately. Richard Mruz, Work Leader Hazardous Waste Corrective Action Unit, indicated that historic spills are not in their purview. The source is not yet definitively from organics found at GW-4. Confounding factors include:

- Vehicle traffic in the corridor,
- the sample was taken at a bridge built with creosote coated lumber,
- coated timbers were used heavily in historic mining,
- historic upgradient mills, and
- the Ruby Trust mining operation upstream.

OSMI is not aware of any other petroleum distillate analyses in Sneffels Creek. Oil sheens have not been observed at Sneffels Creek monitoring stations.

The Mine reviewed the site archaeological reports (Appendix C, submitted under separate, confidential, cover as hard copy) and historical photographs to evaluate the presence of a potential historical origin for organics in GW-4. The archaeological report indicates that a machine shop, a building also visible in the 1897 photograph (Figure 2), was located just upgradient of GW-4, suggesting an historic source for the organic materials. While the diesel

range organics found in GW-4 overlap with expected organic ranges for hydraulic fluid and rock oil (Appendix 1), no significant spillage was observed on the surface around GW-4, supporting the conclusion that GW-4 organics are likely historic.

3.2 GW-4 Replacement Well Location

OSMI is proposing to construct a replacement well, GW-4R (Map 1). The location of GW-4R is intended to capture groundwater flow downgradient of the mill operations where flow occurs through the fractures that run generally east to west.

4 Construction and Implementation

4.1 Characterization and Monitoring Plan Implementation

OSMI will voluntarily monitor groundwater and surface water to further characterize the organics detected at GW-4 and evaluate the source of DRO in surface water at SW-22. The voluntary effort may include:

- adding an analytical suite appropriate to characterize the chemical composition of 100-year-old machine shop-related organic material to the Water Quality Monitoring Plan,
- adding petroleum hydrocarbons to quarterly sampling stations in Sneffels Creek, including SW-22, and
- performing additional sampling at GW-4 and SW-22 for a more complete hydrocarbon analytical suite.

4.2 GW-4R Construction and Location

The approximate location of GW-4R can be seen on Map 1 and Figure 2. The well, expected to be approximately 60 feet deep, will be drilled with perforated pipe, a completion packer or bentonite plug will be placed a few feet below the groundwater intersection. Final coordinates and well construction details will be submitted to DRMS and the State Engineer's Office upon completion.

GW-4R will be drilled in early summer 2021. Following well development, it will be added to the regular quarterly sampling schedule performed under DRMS permit M-2012-032. GW-4 will be removed from the standard quarterly sampling protocols, however, it will not be plugged and abandoned until OSMI has completed further characterization. Results of the characterization sampling including next steps, if any, will be communicated to DRMS.

5 Reclamation

GW-4 will be plugged and abandoned after OSMI has completed characterization. GW-4R will be used to monitor groundwater conditions downgradient of the mill and will be plugged and abandoned after the site has achieved full closure.

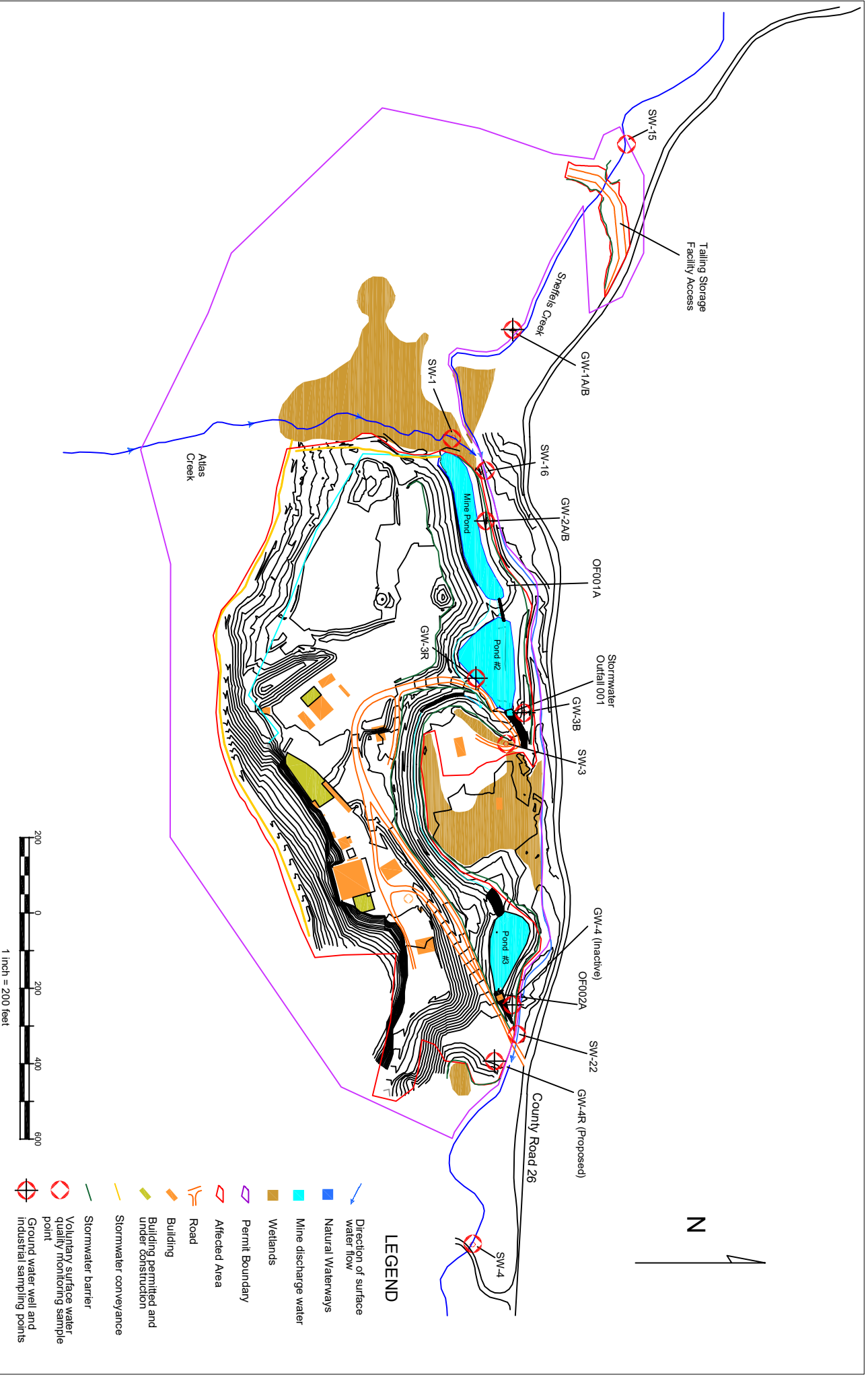
Table 1. GW-4 Activity Log

| Date | Description |
|-------------|---|
| 9/28/2020 | Compressed Air - development |
| 10/9/2020 | Pump - development |
| 10/12/2020 | Compressed Air with surfactant - development |
| 10/16/2020 | Bailing |
| 10/20/2020 | Bailing and sorbent socks |
| 11/5/2020 | Bailing |
| 11/17/2020 | Bailing |
| 12/8/2020 | Sorbent socks |
| 12/14/2020 | Sorbent socks |
| 12/21/2020 | Sorbent socks |
| 12/28/2020 | Sorbent socks |
| 12/29/2020 | Bailing, sludge judge saw a foot of sludge in well bottom |
| 1/4/2021 | Bailing and sorbent socks |

Figure 1. GW-4 Well Log. Construction log for Well GW-4 with permit and receipt number.



Figure 2. Photograph of the Revenue Mill, June 1897. Denver Public Libraries Special Collections, Revenue tunnel and mills of the Caroline and Glacier Bay mining companies. Photograph taken by William Henry Jackson.



TR-12 M-2012-032 REVENUE - VIRGINIUS MINE
 Map 1. Updated Sampling Map.
 Surface and ground water monitoring locations.

Revenue Mine M-2012-032
Technical Revision 12: GW-4 Characterization and
Replacement
Appendix A: Drilling Fluids

SAFETY DATA SHEET

ARDEE ^{TM/MC} 32

000003000414



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Revision Date 2018/04/26

Print Date 2018/04/26

SECTION 1. IDENTIFICATION

Product name : ARDEE ^{TM/MC} 32

Product code : RDE32P20, RDE32IBC, RDE32DRM, RDE32, RDE32DCT

Manufacturer or supplier's details

Petro-Canada America Lubricants Inc.
115N Oak Park Avenue #1C
Oak Park IL 60301-1366
United States

Emergency telephone number : Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : Ardee oils are designed for use in lubricating pneumatic rock drill equipment and other air-operated machinery.

Prepared by : Product Safety: +1 905-491-0565

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

| | |
|------------|--------------------------|
| Appearance | viscous liquid |
| Colour | dark brown |
| Odour | Mild petroleum oil like. |

GHS Classification

Effects on or via lactation

GHS label elements

Hazard statements : May cause harm to breast-fed children.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Avoid contact during pregnancy/ while nursing.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response:

IF exposed or concerned: Get medical advice/ attention.

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Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

| Chemical name | CAS-No. | Concentration |
|--|--------------|---------------|
| lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based | 72623-86-0 | 70 - 90 % |
| distillates (petroleum), solvent-dewaxed heavy paraffinic | 64742-65-0 | 5 - 10 % |
| Alkanes, C14-16, chloro | 1372804-76-6 | 1 - 5 % |

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

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- | | |
|---|---|
| In case of eye contact | : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. |
| If swallowed | : Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice. |
| Most important symptoms and effects, both acute and delayed | : First aider needs to protect himself. |

SECTION 5. FIREFIGHTING MEASURES

- | | |
|---------------------------------------|---|
| Suitable extinguishing media | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : No information available. |
| Specific hazards during fire-fighting | : Cool closed containers exposed to fire with water spray. |
| Hazardous combustion products | : Carbon oxides (CO, CO ₂), sulphur oxides (SO _x), sulphur compounds (H ₂ S), phosphorus oxides (PO _x), aldehydes, ketones, hydrocarbons, smoke and irritating vapours as products of incomplete combustion. |
| Further information | : Prevent fire extinguishing water from contaminating surface water or the ground water system. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. |
| Environmental precautions | : If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities. |

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SECTION 7. HANDLING AND STORAGE

- Advice on safe handling** : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.
- Conditions for safe storage** : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|--|------------|----------------------------------|--|-----------|
| lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based | 72623-86-0 | TWA (Mist) | 5 mg/m3 | OSHA Z-1 |
| | | TWA (Inhalable fraction) | 5 mg/m3 | ACGIH |
| | | TWA (Mist) | 5 mg/m3 | OSHA P0 |
| | | TWA (Mist) | 5 mg/m3 | NIOSH REL |
| | | ST (Mist) | 10 mg/m3 | NIOSH REL |

- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Respiratory protection** : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

- Filter type** : organic vapour filter

Hand protection

- Material** : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

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| | |
|--------------------------|--|
| Remarks | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. |
| Eye protection | : Wear face-shield and protective suit for abnormal processing problems. |
| Skin and body protection | : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Protective measures | : Wash hands and face before breaks and immediately after handling the product. Wash contaminated clothing before re-use. Ensure that eyewash station and safety shower are proximal to the work-station location. |
| Hygiene measures | : Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|---|
| Appearance | : viscous liquid |
| Colour | : dark brown |
| Odour | : Mild petroleum oil like. |
| Odour Threshold | : No data available |
| pH | : No data available |
| Pour point | : -48 °C (-54 °F) |
| Boiling point/boiling range | : No data available |
| Flash point | : 180 °C (356 °F) Method: Cleveland open cup |
| Fire Point | : No data available |
| Auto-Ignition Temperature | : No data available |
| Evaporation rate | : No data available |
| Flammability | : Low fire hazard. This material must be heated before ignition will occur. |
| Upper explosion limit | : No data available |
| Lower explosion limit | : No data available |
| Vapour pressure | : No data available |

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| | |
|--|--|
| Relative vapour density | : No data available |
| Relative density | : No data available |
| Density | : 0.8792 kg/l (15 °C / 59 °F) |
| Solubility(ies) | |
| Water solubility | : insoluble |
| Partition coefficient: n-octanol/water | : No data available |
| Viscosity | |
| Viscosity, kinematic | : 31.9 cSt (40 °C / 104 °F) 6.0 cSt (100 °C / 212 °F) |
| Explosive properties | : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |

SECTION 10. STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Possibility of hazardous reactions | : Hazardous polymerisation does not occur. Stable under normal conditions. |
| Conditions to avoid | : No data available |
| Incompatible materials | : Reactive with oxidising agents, reducing agents, acids, halogens and halogenated compounds. |
| Hazardous decomposition products | : May release COx, SOx, H2S, POx, metal oxides, hydrocarbons, smoke and irritating vapours when heated to decomposition. |

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

| | |
|---------------------------|--|
| Acute oral toxicity | : Remarks: No data available |
| Acute inhalation toxicity | : Assessment: The substance or mixture has no acute inhala- |

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tion toxicity

Remarks: No data available

Acute dermal toxicity

: Assessment: The substance or mixture has no acute dermal toxicity

Remarks: No data available

Components:

lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity

: LC50 (Rat): > 5.2 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity

: LD50 (Rabbit): > 2,000 mg/kg,

distillates (petroleum), solvent-dewaxed heavy paraffinic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute dermal toxicity

: LD50 (Rabbit): > 5,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

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No data available

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

DSL

On the inventory, or in compliance with the inventory

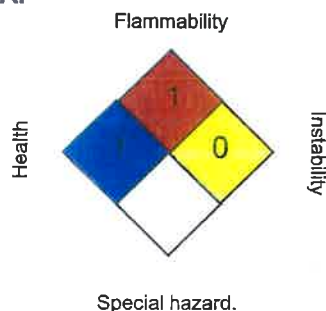
TSCA

All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

| | |
|---------------------|---|
| HEALTH | 4 |
| FLAMMABILITY | 1 |
| PHYSICAL HAZARD | 0 |
| PERSONAL PROTECTION | B |

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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For Copy of SDS

: Internet: lubricants.petro-canada.com/sds
United States, telephone: 1-800-268-5850; fax: 1-800-201-6285
For Product Safety Information: 1 905-491-0565

Prepared by

: Product Safety: +1 905-491-0565

Revision Date

: 2018/04/26

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Issuing Date 18-Jul-2012

Revision Date 04-Oct-2017

Revision Number 1



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name SUPER TECH

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Hydraulic fluids

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Warren Distribution, Inc.

Supplier Address 727 S.13th Street
Omaha
NE
68102
US

Supplier Phone Number Phone:800-424-9300
Fax:402-977-5857
Contact Phone402-977-5786

Supplier Email alowery@wd-wpp.com

Distributor Wal-Mart Stores Incorporated
Bentonville, AR USA 72716

Emergency telephone number

Company Emergency Phone Number 800-424-9300

2. HAZARDS IDENTIFICATION

Classification


This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).



Carcinogenicity

Category 1A

GHS Label elements, including precautionary statements**Emergency Overview**

| | | | |
|---|-------|-----------------------|-----------------------|
| Signal word | | Danger | |
| Hazard Statements | | | |
| May cause cancer | | | |
|  | | | |
| Appearance | Brown | Physical state | Viscous liquid Liquid |
| | | | Odor Mild |

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

No information available

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | CAS-No | Percent | Trade Secret |
|--|------------|---------|--------------|
| Petroleum distillates, hydrotreated heavy paraffinic | 64742-54-7 | 30 - 60 | * |
| Petroleum distillates, hydrotreated heavy naphthenic | 64742-52-5 | 30 - 60 | * |
| Petroleum distillates, hydrotreated middle | 64742-46-7 | 0.1 - 1 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Note: When using this product in high pressure equipment - Accidental high velocity dermal injection of this material requires immediate medical attention.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur.

Ingestion

Call a physician or poison control center immediately. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects

No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Uniform Fire Code

Combustible Liquid: III-B

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Other Information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

Incompatible Products Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--|---|---|------------|
| Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7 | TWA: 5 mg/m ³ , as oil mist, mineral STEL: TWA: 10 mg/m ³ , as oil mist, mineral | TWA: 5 mg/m ³ , as oil mist, mineral | |

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

| | | | |
|-----------------------|--------------------------|-----------------------|--------------------------|
| Physical state | Viscous liquid, Liquid | Odor | Mild |
| Appearance | Brown | Odor Threshold | No information available |
| Color | No information available | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks</u> | <u>Method</u> |
|---|-------------------|----------------|---------------|
| pH | UNKNOWN | None known | |
| Melting / freezing point | No data available | None known | |
| Boiling point / boiling range | No data available | None known | |
| Flash Point | 207 C / 405 F | None known | |
| Evaporation Rate | No data available | None known | |
| Flammability (solid, gas) | No data available | None known | |
| Flammability Limit in Air | | | |
| Upper flammability limit | No data available | | |
| Lower flammability limit | No data available | | |
| Vapor pressure | No data available | None known | |
| Vapor density | No data available | None known | |
| Specific Gravity | .88 | None known | |
| Water Solubility | Negligible | None known | |
| Solubility in other solvents | No data available | None known | |
| Partition coefficient: n-octanol/water | No data available | None known | |
| Autoignition temperature | No data available | None known | |
| Decomposition temperature | No data available | None known | |
| Kinematic viscosity | No data available | None known | |
| Dynamic viscosity | 6.79 | None known | |
| Explosive properties | No data available | | |
| Oxidizing properties | No data available | | |

Other Information

| | |
|-----------------------------------|-------------------|
| Softening Point | No data available |
| VOC Content (%) | No data available |
| Particle Size | No data available |
| Particle Size Distribution | |

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Oxidizing agent.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|---|
| Inhalation | Specific test data for the substance or mixture is not available. |
| Eye contact | Specific test data for the substance or mixture is not available. |
| Skin contact | Specific test data for the substance or mixture is not available. |
| Ingestion | Specific test data for the substance or mixture is not available. |

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|--|----------------------|-------------------------|------------------------|
| Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7 | > 15 g/kg (Rat) | - | - |
| Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5 | > 5000 mg/kg (Rat) | - | - |
| Petroleum distillates, hydrotreated middle 64742-46-7 | = 7400 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | = 4.6 mg/L (Rat) 4 h |

Information on toxicological effects

Symptoms No information available.



Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|--|--------------|-------------|------------|-------------|
| Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7 | A2 | Group 1 | Known | X |
| Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5 | A2 | Group 1 | Known | X |

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity Contains a known or suspected carcinogen.

Target Organ Effects Respiratory system. Eyes. Skin. Gastrointestinal tract (GI).

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|--|-------------------|---|----------------------------|----------------------------|
| Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7 | | 96h LC50: > 5000 mg/L (Oncorhynchus mykiss) | | 48h EC50: > 1000 mg/L |
| Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5 | | 96h LC50: > 5000 mg/L (Oncorhynchus mykiss) | | 48h EC50: > 1000 mg/L |
| Petroleum distillates, hydrotreated middle 64742-46-7 | | 96h LC50: = 35 mg/L (Pimephales promelas) 96h LC50: > 10000 mg/L (Pimephales promelas) | | |

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 331

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name
Hazard Class

NOT REGULATED
NON-REGULATED
N/A

TDG

Not regulated

MEX

Not regulated



| | |
|-----------------------------|---------------|
| ICAO | Not regulated |
| IATA | Not regulated |
| Proper Shipping Name | NON REGULATED |
| Hazard Class | N/A |
| IMDG/IMO | Not regulated |
| Hazard Class | N/A |
| RID | Not regulated |
| ADR | Not regulated |
| ADN | Not regulated |

15. REGULATORY INFORMATION

International Inventories

| | |
|------|----------------|
| TSCA | Not determined |
| DSL | Not determined |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | No |
| Chronic Health Hazard | Yes |
| Fire Hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

| Chemical name | California Proposition 65 |
|--------------------|---------------------------|
| Toluene - 108-88-3 | Developmental |

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania | Rhode Island | Illinois |
|---------------|------------|---------------|--------------|--------------|----------|
|---------------|------------|---------------|--------------|--------------|----------|



| | | | | | |
|--|---|---|---|---|---|
| Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7 | | | | | X |
| Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5 | | | | | X |
| Toluene 108-88-3 | X | X | X | X | X |

International Regulations

Mexico

National occupational exposure limits

| Chemical name | Carcinogen Status | Exposure Limits |
|--|-------------------|-----------------|
| Petroleum distillates, hydrotreated heavy paraffinic | A2 | |
| Petroleum distillates, hydrotreated heavy naphthenic | A2 | |

A2 - Suspected Human Carcinogen

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

| | | | | |
|-------------|--------------------------|-----------------------|--------------------------|--|
| NFPA | Health Hazards 1 | Flammability 1 | Instability 0 | Physical and Chemical Hazards - |
| HMIS | Health Hazards 1* | Flammability 1 | Physical Hazard 0 | Personal Protection |
| | | | | X |

Chronic Hazard Star Legend * = Chronic Health Hazard

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 18-Jul-2012

Revision Date 04-Oct-2017

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



Revenue Mine M-2012-032
Technical Revision 12: GW-4 Characterization and
Replacement
Appendix B: Laboratory Reports

February 24, 2021

Report to:

Briana Greer
Ouray Silver Mines
285 S. Madison Ave.

Louisville, CO 80027

cc: Accounts Payable, Chris Bolane

Bill to:

Accounts Payable
Ouray Silver Mines
1900 Main St
PO Box 564
Ouray, CO 81427

Project ID:

ACZ Project ID: L64296

Briana Greer:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 16, 2021. This project has been assigned to ACZ's project number, L64296. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L64296. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after March 26, 2021. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Ouray Silver Mines

February 24, 2021

Project ID:

ACZ Project ID: L64296

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 groundwater samples from Ouray Silver Mines on February 16, 2021. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L64296. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. (R1) Applies to: /TPH C10 TO C28

Control Sample (LCS) Precision (RPD) was above acceptance limits (21%). Both LCSW and LCSWD recoveries were within acceptance criteria.

Ouray Silver Mines

Project ID:

Sample ID: GW-4

ACZ Sample ID: **L64296-01**

Date Sampled: 02/15/21 11:15

Date Received: 02/16/21

Sample Matrix: Groundwater

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5030C**

Workgroup: **WG514571**

Analyst: jmm

Extract Date: 02/17/21 15:59

Analysis Date: 02/17/21 15:59

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene | 71-43-2 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Ethylbenzene | 100-41-4 | <1 | U | 1 | * | ug/L | 1 | 1 |
| m p Xylene | 1330-20-7 | <2 | U | 1 | * | ug/L | 2 | 2 |
| o Xylene | 95-47-6 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Toluene | 108-88-3 | <1 | U | 1 | * | ug/L | 1 | 1 |
| TVH C6 to C10 | TVH | <0.05 | U | 1 | * | mg/L | 0.05 | 0.05 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene | 460-00-4 | 112.4 | | 1 | * | % | 70 | 130 |
| Bromofluorobenzene (TVH) | 460-00 4 | 111.8 | | 1 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: GW-4

ACZ Sample ID: **L64296-01**

Date Sampled: 02/15/21 11:15

Date Received: 02/16/21

Sample Matrix: Groundwater

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3511**

Workgroup: **WG514799**

Analyst: ttg

Extract Date: 02/18/21 17:14

Analysis Date: 02/23/21 13:49

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-------|-------|
| TPH C10 to C28 | | 8.44 | | 0.0606 | * | mg/L | 0.242 | 0.485 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| OTP | 84-15-1 | 85.11 | | 0.0606 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: GW-4

ACZ Sample ID: **L64296-01**

Date Sampled: 02/15/21 11:15

Date Received: 02/16/21

Sample Matrix: Groundwater

Volatile Organics by GC/MS

Analysis Method: **M8260C/D GC/MS**

Extract Method: **5030C**

Workgroup: **WG514572**

Analyst: jmm

Extract Date: 02/17/21 15:49

Analysis Date: 02/17/21 15:49

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|-------------------------|-----------|------------|------|----------|----|-------|-----|-----|
| Methyl Tert Butyl Ether | 1634-04-4 | <4 | U | 1 | * | ug/L | 4 | 4 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene | 460-00-4 | 101.3 | | 1 | * | % | 70 | 130 |
| Dibromofluoromethane | 1868-53-7 | 98.8 | | 1 | * | % | 70 | 130 |
| Toluene-d8 | 2037-26-5 | 97.9 | | 1 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: SW-22

ACZ Sample ID: **L64296-02**

Date Sampled: 02/15/21 12:15

Date Received: 02/16/21

Sample Matrix: Surface Water

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5030C**

Workgroup: **WG514571**

Analyst: jmm

Extract Date: 02/17/21 16:28

Analysis Date: 02/17/21 16:28

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene | 71-43-2 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Ethylbenzene | 100-41-4 | <1 | U | 1 | * | ug/L | 1 | 1 |
| m p Xylene | 1330-20-7 | <2 | U | 1 | * | ug/L | 2 | 2 |
| o Xylene | 95-47-6 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Toluene | 108-88-3 | <1 | U | 1 | * | ug/L | 1 | 1 |
| TVH C6 to C10 | TVH | <0.05 | U | 1 | * | mg/L | 0.05 | 0.05 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene | 460-00-4 | 113.1 | | 1 | * | % | 70 | 130 |
| Bromofluorobenzene (TVH) | 460-00 4 | 112.7 | | 1 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: SW-22

ACZ Sample ID: **L64296-02**

Date Sampled: 02/15/21 12:15

Date Received: 02/16/21

Sample Matrix: Surface Water

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3511**

Workgroup: **WG514799**

Analyst: ttg

Extract Date: 02/18/21 17:16

Analysis Date: 02/23/21 14:16

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|------|------|
| TPH C10 to C28 | | 0.3 | J | 0.06 | * | mg/L | 0.24 | 0.48 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| OTP | 84-15-1 | 80.51 | | 0.06 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: SW-22

ACZ Sample ID: **L64296-02**

Date Sampled: 02/15/21 12:15

Date Received: 02/16/21

Sample Matrix: Surface Water

Volatile Organics by GC/MS

Analysis Method: **M8260C/D GC/MS**

Extract Method: **5030C**

Workgroup: **WG514572**

Analyst: jmm

Extract Date: 02/17/21 16:17

Analysis Date: 02/17/21 16:17

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|-------------------------|-----------|------------|------|----------|----|-------|-----|-----|
| Methyl Tert Butyl Ether | 1634-04-4 | <4 | U | 1 | * | ug/L | 4 | 4 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene | 460-00-4 | 99.9 | | 1 | * | % | 70 | 130 |
| Dibromofluoromethane | 1868-53-7 | 99.3 | | 1 | * | % | 70 | 130 |
| Toluene-d8 | 2037-26-5 | 98.2 | | 1 | * | % | 70 | 130 |

Ouray Silver Mines

Project ID:

Sample ID: TB210209-1

ACZ Sample ID: **L64296-03**

Date Sampled: 02/15/21 12:15

Date Received: 02/16/21

Sample Matrix: Surface Water

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5030C**

Workgroup: **WG514571**

Analyst: jmm

Extract Date: 02/17/21 15:25

Analysis Date: 02/17/21 15:25

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene | 71-43-2 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Ethylbenzene | 100-41-4 | <1 | U | 1 | * | ug/L | 1 | 1 |
| m p Xylene | 1330-20-7 | <2 | U | 1 | * | ug/L | 2 | 2 |
| o Xylene | 95-47-6 | <1 | U | 1 | * | ug/L | 1 | 1 |
| Toluene | 108-88-3 | <1 | U | 1 | * | ug/L | 1 | 1 |
| TVH C6 to C10 | TVH | <0.05 | U | 1 | * | mg/L | 0.05 | 0.05 |
| Surrogate Recoveries | CAS | % Recovery | | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene | 460-00-4 | 112.2 | | 1 | * | % | 70 | 130 |
| Bromofluorobenzene (TVH) | 460-00 4 | 111 | | 1 | * | % | 70 | 130 |


Report Header Explanations

| | |
|----------------|---|
| <i>Batch</i> | A distinct set of samples analyzed at a specific time |
| <i>Found</i> | Value of the QC Type of interest |
| <i>Limit</i> | Upper limit for RPD, in %. |
| <i>Lower</i> | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| <i>LCL</i> | Lower Control Limit |
| <i>MDL</i> | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| <i>PCN/SCN</i> | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| <i>PQL</i> | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| <i>QC</i> | True Value of the Control Sample or the amount added to the Spike |
| <i>Rec</i> | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| <i>RPD</i> | Relative Percent Difference, calculation used for Duplicate QC Types |
| <i>Upper</i> | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| <i>UCL</i> | Upper Control Limit |
| <i>Sample</i> | Value of the Sample of interest |

QC Sample Types

| | | | |
|-------------|---|---------------|---------------------------------------|
| <i>SURR</i> | Surrogate | <i>LFB</i> | Laboratory Fortified Blank |
| <i>INTS</i> | Internal Standard | <i>LFM</i> | Laboratory Fortified Matrix |
| <i>AS</i> | Analytical Spike (Post Digestion) | <i>LFMD</i> | Laboratory Fortified Matrix Duplicate |
| <i>ASD</i> | Analytical Spike (Post Digestion) Duplicate | <i>LRB</i> | Laboratory Reagent Blank |
| <i>DUP</i> | Sample Duplicate | <i>MS/MSD</i> | Matrix Spike/Matrix Spike Duplicate |
| <i>LCSS</i> | Laboratory Control Sample - Soil | <i>PBS</i> | Prep Blank - Soil |
| <i>LCSW</i> | Laboratory Control Sample - Water | <i>PBW</i> | Prep Blank - Water |

QC Sample Type Explanations

| | |
|-------------------------|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

ACZ Qualifiers (Qual)

| | |
|---|---|
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<https://ac2.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

ACZ Project ID: **L64296**

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|------------------|----------|-------------------------|-------------------------|------|---|
| L64296-01 | WG514571 | *All Compounds* | M8021B/8015D GC/PID/FID | Q6 | Sample was received above recommended temperature. |
| | | Benzene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | Ethylbenzene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | m p Xylene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | o Xylene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | Toluene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | TVH C6 to C10 | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | WG514799 | *All Compounds* | M8015D GC/FID | Q6 | Sample was received above recommended temperature. |
| | | TPH C10 to C28 | M8015D GC/FID | R1 | RPD exceeded the method or laboratory acceptance limit. See Case Narrative. |
| | | | M8015D GC/FID | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | WG514572 | *All Compounds* | M8260C/D GC/MS | Q6 | Sample was received above recommended temperature. |
| | | Methyl Tert Butyl Ether | M8260C/D GC/MS | Q9 | Insufficient sample received to meet method QC requirements. |
| L64296-02 | WG514571 | *All Compounds* | M8021B/8015D GC/PID/FID | Q6 | Sample was received above recommended temperature. |
| | | Benzene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | Ethylbenzene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | m p Xylene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | o Xylene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | Toluene | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | | TVH C6 to C10 | M8021B/8015D GC/PID/FID | Q9 | Insufficient sample received to meet method QC requirements. |
| | WG514799 | *All Compounds* | M8015D GC/FID | Q6 | Sample was received above recommended temperature. |
| | | TPH C10 to C28 | M8015D GC/FID | R1 | RPD exceeded the method or laboratory acceptance limit. See Case Narrative. |
| | | | M8015D GC/FID | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | WG514572 | *All Compounds* | M8260C/D GC/MS | Q6 | Sample was received above recommended temperature. |
| | | Methyl Tert Butyl Ether | M8260C/D GC/MS | Q9 | Insufficient sample received to meet method QC requirements. |
| L64296-03 | WG514571 | *All Compounds* | M8021B/8015D GC/PID/FID | Q6 | Sample was received above recommended temperature. |

Ouray Silver Mines

ACZ Project ID: **L64296**

No certification qualifiers associated with this analysis

Ouray Silver Mines

ACZ Project ID: L64296

Date Received: 02/16/2021 13:19

Received By:

Date Printed: 2/17/2021

Receipt Verification

| | YES | NO | NA |
|---|-----|----|----|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | X | |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | X | | |
| A change was made in the relinquished/ received by section prior to ACZ custody. | | | |
| A change was made in the relinquished/ received by section prior to ACZ custody. | | | |
| A change was made in the relinquished/ received by section prior to ACZ custody. | | | |
| A change was made in the relinquished/ received by section prior to ACZ custody. | | | |

Samples/Containers

| | YES | NO | NA |
|---|-----|----|----|
| 8) Are all containers intact and with no leaks? | | X | |
| L64296-01 Container B2375474 (VIAL UP AMBER): This container was received broken. | | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? ¹ | | | X |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | X | | |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | X | | |
| 18) Were all samples received within hold time? | X | | |

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Ouray Silver Mines

ACZ Project ID: L64296

Date Received: 02/16/2021 13:19

Received By:

Date Printed: 2/17/2021

| Cooler Id | Temp (°C) | Temp Criteria (°C) | Rad (µR/Hr) | Custody Seal Intact? |
|-----------|-----------|-----------------------|-------------|-------------------------|
| ----- | ----- | ----- | ----- | ----- |
| 6806 | 10.4 | <=6.0 | 15 | Yes |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Revenue Mine M-2012-032
Technical Revision 12: GW-4 Characterization and
Replacement
Appendix C: Archeology Report

SUBMITTED UNDER SEPARATE, CONFIDENTIAL, COVER

**CULTURAL RESOURCE INVENTORY OF
PROPOSED DISTURBANCE AREAS AT THE
REVENUE TUNNEL
OURAY COUNTY, COLORADO**

by

Jonathon C. Horn
Principal Investigator

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Prepared for

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October 2012