

January 21, 2021

Jim Harrington
Colorado Legacy Land, LLC
4601 DTC Blvd. - Suite 130
Denver, CO 80237

RE: Schwartzwalder Mine, Permit No. M-1977-300, Surety Reduction Request (SR-09), Adequacy Review No. 1

Mr. Harrington:

The Division of Reclamation, Mining and Safety (Division) has completed its preliminary adequacy review of your Surety Reduction Request (SR-09) submitted for the Schwartzwalder Mine. All comment and review periods for SR-09 began on December 18, 2020 when the request was considered complete for filing purposes. The Division received two objections to SR-09 within the public comment period which closed on January 17, 2021 (see enclosed objection letters from City of Arvada and Denver Water).

The Division has identified the following adequacy items in your request requiring clarification or additional information:

- 1) The operator is requesting the release of \$215,494 held for excavating radionuclide-impacted alluvial soils from the valley and disposing of this material on site. The amount requested for release is 75% of the total amount held for this task, which is \$287,325. This would leave \$71,831 for the excavation and on-site disposal of the remaining impacted alluvial soils in the valley. The Division has the following comments regarding this item:
 - a) Please provide a map of the valley excavation project area showing completed portions and estimated portions remaining to be excavated.
 - b) The operator estimates that to date 56,000 cubic yards of material have already been excavated. Please specify the anticipated volume of material remaining to be excavated to complete the project.
 - c) In the recently approved Amendment application (AM-05), the operator requested an additional underground disposal location for the impacted soils as the estimated volume of material remaining to be excavated increased during the project, exceeding the remaining capacity of the previously approved disposal location. This would indicate the estimated volume could potentially change again as the project proceeds. How was it determined that 75% of the radionuclide-impacted alluvial soils have been removed? Is the portion of the valley soils remaining to be excavated easier to define than the portion that has already been excavated?



Have the remaining areas to be excavated been surveyed to depth? Please provide additional information demonstrating that 75% of the alluvial excavation project has been completed.

- d) Please provide additional information demonstrating the \$71,831 that would remain upon approval of a 75% release of the currently held amount would be sufficient to cover the costs of excavating the remaining radionuclide-impacted alluvial soils in the valley, and hauling this material to the approved underground locations for disposal.
- 2) The operator is requesting a release of the \$350,000 held for the initial in-situ treatment of the mine pool and a release of \$250,000 from the total amount of \$1,187,529 held as the Denver Water contingency cost for water treatment. Please be advised, the Division will not release any portion of the financial warranty associated with the long-term treatment and management of the mine pool until the operator has complied with Conditions No. 2 and 3 of the Division's approval of the Succession of Operators to Colorado Legacy Land, LLC (see enclosed SO-01 approval letter, dated February 20, 2018). This includes amending the permit to include a conceptual site model, a plan for addressing the physical and chemical stabilization of the mine pool, and to address the long-term costs of operating the water treatment plant and managing the mine pool. The Division anticipates such demonstration will be based on three consecutive years of data which verify the physical and chemical stabilization of the mine pool. Per Condition No. 3 of SO-01 approval, upon such demonstration, the operator may then request a reduction in financial warranty for that portion of the financial warranty attributable to the water treatment and management of the mine pool.
- 3) For its recent approval of AM-05 (on January 13, 2021), the Division calculated an additional required financial warranty in the amount of \$15,880 for the proposed backfill plan to reclaim the Black Forest mine openings. This additional amount has not yet been submitted by the operator. Therefore, please ensure this amount is incorporated into the financial warranty proposed in SR-09.
- 4) Please review the enclosed objection letters submitted by the City of Arvada and Denver Water and inform the Division how the operator intends to address the concerns expressed in these letters.

This concludes the Division's preliminary adequacy review of SR-09. Please submit your response to the adequacy items identified in this letter by **February 5, 2021**.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,



Amy Eschberger
Environmental Protection Specialist

Encls: Objection to SR-09 from City of Arvada, received on January 14, 2021
Objection to SR-09 from Denver Water, received on January 15, 2021

SO-01 approval with conditions letter, dated February 20, 2018

Cc: Elizabeth Busby, Ensero Solutions US, Inc.
Billy Ray, Ensero Solutions US, Inc.
Paul Newman, Colorado Legacy Land, LLC
Eric Williams, Colorado Legacy Land, LLC
Michael Cunningham, DRMS
Russ Means, DRMS
Jeff Fugate, AGO for DRMS



STATE OF
COLORADO

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

Schwartzwald Mine / M-1977-300

Brad WYANT <bwyant@arvada.org>

Thu, Jan 14, 2021 at 3:30 PM

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

Cc: Lori Graham <lgraham@arvada.org>, Sharon Israel <sisrael@arvada.org>, Evelyn Rhodes <erhodes@arvada.org>, Hannah Gregory <hgregory@arvada.org>

Amy,

Attached is a signed copy of the City of Arvada's response/comments regarding the Colorado Legacy Land LLC, Request Surety Reduction - SR09. A letter was also overnighted in the mail today and should arrive tomorrow.
We appreciate all your help.

Thank you,

Brad

On Wed, Jan 6, 2021 at 10:13 AM Eschberger - DNR, Amy <amy.eschberger@state.co.us> wrote:

[Quoted text hidden]

[Quoted text hidden]



Colorado Legacy Land Letter to DMRS 011421.pdf

119K



UTILITIES DEPARTMENT
FACSIMILE: 720-898-7603 ▲ TDD: 720-898-7869
PHONE: 720-898-7760

January 14, 2021

Ms. Amy Eschberger
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street Rm 215
Denver, Colorado 80203

Re: Colorado Legacy Land LLC, Request for Full or Partial Surety Reduction - SR09

Dear Ms. Eschberger,

The City of Arvada ("City") has reviewed the request for surety reduction submitted by Colorado Legacy Land LLC for the Schwartzwalder Mine. We do not support this request and recommend it be denied.

We appreciate the progress Colorado Legacy Land ("CLL") has made and continues to make with remediations at Schwartzwalder Mine. As you know, Schwartzwalder Mine discharges directly impact the drinking water supply to a large number of Colorado residents, including residents of the City. The City has a vested interest in the public health, safety and welfare of its citizens. Increased levels of uranium or other contaminants can harm public health as well as cause increased treatment and residual disposal costs due to TENORM. When the City is required to dispose of TENORM, the cost is 700% higher than our standard disposal cost. Accordingly, it is imperative that CLL maintain the appropriate treatment processes and continue to address any seepage or stormwater issues now and into the future.

Although we acknowledge CLL's request to reduce the surety due to progress it has made so far, we need to ensure that all commitments from the Revised Approval of SO-01 dated Feb 20, 2018 between CLL and the Colorado Division of Reclamation, Mining and Safety are met before we can support this endeavor. To date, we are not aware of receiving any water quality data from CLL and were not aware that we were allowed to sample at the sampling taps at Schwartzwalder. Although we understand that this may have been due to changes in personnel at the City, we simply do not have enough information at this time to support the request. In addition, Denver Water and its consultants are currently evaluating water quality data obtained from the mine pool to determine if treatment processes are working. We would like several year's worth of data to substantiate any claims of improvement. In fulfilling its responsibilities to its citizens, the City prefers a conservative approach based on water quality data that our drinking water sources will be protected to the utmost. We are wary due to past experiences around Colorado which have had devastating impacts to water resources.

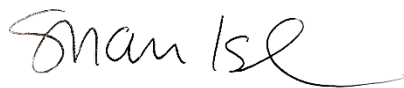
In addition, we received notice this week of an increase in surety requirements for the site associated with an amendment to the Schwartzwalder Mine permit. The amount of the

increase was \$15,880. In light of this, we further recommend that the full \$8,915,880.00 continue to be held in surety.

In summary, at this time, the City does not support the request to reduce the surety for CLL, and we support Denver Water's concerns as well. The protection of our drinking water source is our primary concern. For future consideration of a surety reduction request, we expect to see, at minimum, the completion of the conceptual site model, the stabilization of the mine pool through optimized treatment operation, and assurance of long-term operation and management of the treatment processes.

We welcome discussion and partnership with CLL in regards to Schwartzwalder Mine and hope that they are able to fully complete their commitments and have a prosperous outcome.

Sincerely,

A handwritten signature in black ink, appearing to read "Sharon Israel". The signature is fluid and cursive, with a long horizontal stroke at the end.

Sharon M. Israel, P.E., ENV SP

Director of Utilities



STATE OF
COLORADO

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

CLL Financial Warranty Request Permit No. M-1977-300

Arnold, Daniel J. <Daniel.Arnold@denverwater.org>

Fri, Jan 15, 2021 at 3:54 PM

To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>, "Cunningham - DNR, Michael"

<michaela.cunningham@state.co.us>, "russ.means@state.co.us" <russ.means@state.co.us>

Cc: "Poncelet, Nicole" <Nicole.Poncelet@denverwater.org>, "Witheridge, Alison" <Alison.Witheridge@denverwater.org>, Sharon Israel <sisrael@arvada.org>, Jim Harrington <jim@coloradolegacy.land>, Jeff Fugate <Jeff.Fugate@coag.gov>

Attached, please find Denver Water's letter and enclosed attachments objecting to CLL's December 7, 2020 request for financial warranty reduction for the Schwartzwalder Mine.

If you have any questions regarding Denver Water's attached letter, please do not hesitate to contact me.

Daniel J. Arnold | Office of General Counsel | Attorney

Denver Water | office: 303-628-6460 | direct: 303-628-6469 | fax: 303-628-6478

1600 West 12th Ave | Denver, CO 80204-3412

daniel.arnold@denverwater.org

3 attachments

Attachment 1, Schwartzwalder Mine Pool Trends.pdf
207K

20210115 Ltr to DRMS Re Schwartzwalder Financial Warranty Reduction.pdf
141K

2018-02-21_REVISION - M1977300.pdf
54K

Sent Via E-mail

January 15, 2020

Ms. Amy Eschberger
Division of Reclamation, Mining & Safety
1313 Sherman Street
Room 215
Denver, Colorado 80203

Re: Schwartzwalder Mine – File No. M-1977-300, Colorado Legacy Land, LLC Surety
Reduction Request Application

Dear Ms. Eschberger:

I am writing on behalf of Denver Water to object to Colorado Legacy Land, LLC's ("CLL") December 7, 2020 request to release a portion of the performance and financial warranties for the Schwartzwalder Mine reclamation permit.

Denver Water currently serves drinking water to 1.5 million customers in the City and County of Denver and surrounding suburbs. Denver Water owns and operates Ralston Reservoir, an on-channel drinking water reservoir located a few miles downstream of Schwartzwalder Mine. As a terminal drinking water reservoir, Ralston currently feeds Denver Water's Moffat Treatment Plant and will feed its new Northwater Treatment Plant beginning as early as 2023. Constituents of concern discharged by the Schwartzwalder Mine, including uranium, arsenic and sulfate, can impact Denver Water's treatment process and operations.

CLL is seeking a release of \$1,526,853.00 of the \$8,900,000.00 financial warranty for the Schwartzwalder Mine. The request is based on CLL's completion of activities related to reclamation of alluvial fill material disposed in Ralston Creek and storm water improvements to previously reclaimed waste rock piles. This amount also includes a request to release \$250,000 for a Denver Water contingency for testing the six month treatment cycle at the mine pool.¹

Denver Water acknowledges that CLL has accomplished several reclamation tasks, and deserves recognition for its work to date. However, the full amount of the current financial warranty is needed as a surety for the potential long-term operation and maintenance of the mine pool pumping and in-situ treatment system until CLL has provided sufficient data to

¹ In January 24, 2018, Denver Water questioned the long-term feasibility of treating the mine pool on a seasonal basis. Denver Water argued that it would be necessary to operate the pumping system year around as opposed to seasonally to avoid the wet/dry cycling that occurs with seasonal operation. The wet/dry cycling can expose and submerge mine rock, resulting in the continual generation of constituents of concern. Although CLL is currently reducing the cost of replacement of reverse osmosis membranes through seasonal operation, to stabilize the mine pool it may need to operate on a year around basis.

demonstrate that the recent reclamation activities are self-sustaining and CLL has met the conditions of DRMS's February 20, 2018 transfer request approval letter.

In the transfer request approval letter, DRMS required a financial warranty to be "maintained at a level which reflects the current cost of reclamation, which includes all measures taken to assure the protection of water resources." At that time, DRMS concluded that an amount of \$8,900,000.00 would be sufficient. This amount is "subject to adjustment and may be increased or reduced as necessary to ensure the completion of reclamation in the event of permit revocation and forfeiture of financial warranty."

The transfer request approval letter provides that as a condition of release of the financial warranty, several terms and conditions must be met, including requirements that CLL provide:

- A conceptual site model, and provide all underlying assumptions and data used in the model to Denver Water and City of Arvada.
- A plan addressing the physical and chemical stabilization of the mine pool and specifically addressing the concentrations of dissolved uranium and other constituents as required under the conditions of the permit, and updating the reclamation and environmental protection plans.

To date neither of these critical items have been met. Although CLL has shared a slide deck containing a cartoon of the mine site, it has yet to develop a reliable model that can be used to make informed reclamation and long-term water treatment decisions. The Schwartzwalder Mine site is an extremely complex site with several data gaps as identified in the U.S. Geological Survey's ("USGS") 2011 Report.² To help fill these data gaps, the USGS recommended the development of a numerical groundwater flow model, tracer dilution studies in Ralston Creek to help accurately locate and quantify groundwater inflows to the stream and the chemistry of those inflows, and additional uranium and sulfur isotopic measurements of all sampled water. As a first step to developing a reliable conceptual site model, CLL should be working to fill these data gaps, but Denver Water is unaware of any efforts by CLL to begin to develop a conceptual site model, let alone to collect the necessary data to develop such a model.

In addition, Denver Water remains very concerned that CLL has not developed a plan to achieve long-term stability of mine pool chemistry. A review of historic data and trends in the mine pool shows that concentrations of dissolved uranium within the mine pool are not stable and continue to increase. Although in-situ treatment helps to decrease uranium concentrations on a temporary basis, the upward trend of uranium concentrations appears to resume after each treatment. The injection of reverse osmoses ("RO") brine from the treatment system into the mine pool appears to also be contributing to a lack of stabilization of the mine pool. A graph showing trends in uranium concentrations in the mine pool is enclosed as Attachment 1. In addition, with regard to the Denver Water contingency, we currently lack sufficient data to make a determination of how the mine pool is responding to the six-month treatment schedule. As of the date of this letter, we only have four months of observational data, so it is premature to draw

² This report is available at: <https://pubs.usgs.gov/of/2011/1092/> (last visited 1/15/2021).

any conclusions about the long-term viability of CLL's treatment approach based upon the limited amount of data that is available.

Because of the long-term operation and maintenance costs associated with CLL's planned reclamation effort, in 2018 Denver Water requested a financial warranty of \$17.6 million as a condition of CLL's permit transfer request. Denver Water was willing to accede to an \$8.9 million financial warranty subject in part to the understanding that upon CLL's completion of the alluvial mining activities, that portion of the financial warranty would be committed to cover the long-term costs of the operation and maintenance of the mine pool in-situ treatment system. This understanding is documented in Denver Water's February 21, 2018 letter to Ms. Virginia Brannon, a copy of which is attached.

In closing, at this time Denver Water objects to the release of any portion of CLL's financial warranty and requests that CLL be required to focus on developing a reliable conceptual site model before any future permit amendments are approved. While CLL has made progress in stabilizing the waste rock piles and addressing mine tailings disposed in alluvial fill material, additional data and time is required to measure whether the reclamation efforts have been successful at stabilizing the mine pool and reducing the need for long term treatment.

Please do not hesitate to contact me if you have any questions regarding the contents of this letter.

Sincerely,

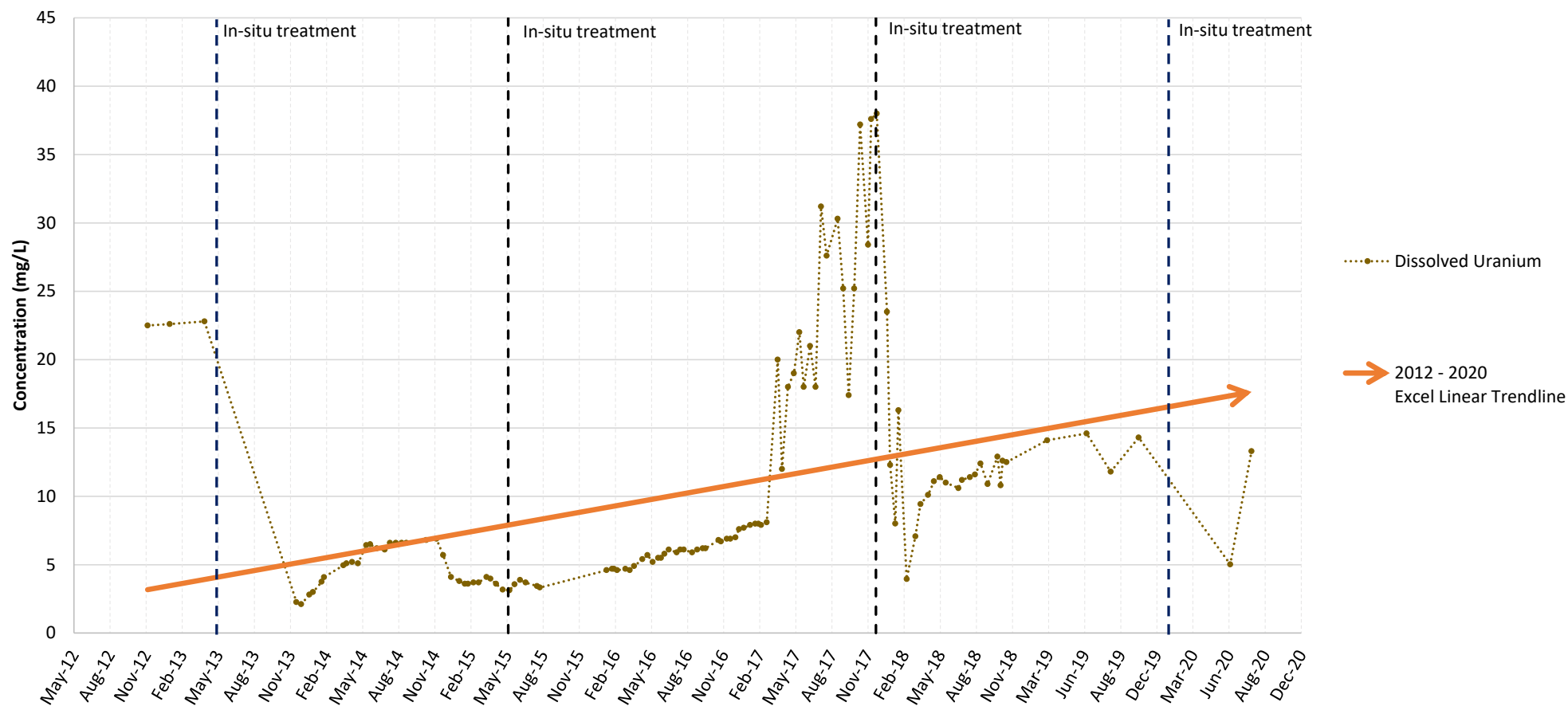
Daniel J. Arnold
Attorney
Denver Water

Cc: Jim Harrington, Colorado Legacy Land, LLC
Sharon Israel, City of Arvada

Enclosures: Attachment 1, Graph of Uranium Concentrations at Schwartzwalder Mine
February 21, 2018 Letter from Denver Water to DRMS

DRMS Requirement, Feb. 2018: “...provide a plan addressing the physical and chemical stabilization of the mine pool and specifically addressing concentrations of dissolved uranium as required under the conditions of the permit...”

Uranium Concentrations in the Mine Pool



Sent Via E-mail and U.S. Mail

February 21, 2018

RECEIVED

FEB 21 2018

**DIVISION OF RECLAMATION
MINING AND SAFETY**

Ms. Virginia Brannon
Division Director
Division of Reclamation, Mining & Safety
1313 Sherman Street, Room 215
Denver, CO 80203

Re: Succession of Operators - Schwartzwalder Mine (M-1977-300) Jefferson County,
Colorado

Dear Ms. Brannon:

On behalf of Denver Water, I am writing in response to the Division of Reclamation, Mining and Safety's ("DRMS") decision to approve Colorado Legacy Land, LLC's ("CLL") application ("transfer application") requesting a transfer and succession of operators of the Schwartzwalder Mine, in Jefferson County, Colorado.

Denver Water appreciates the extensive time and effort DRMS has expended in reviewing the CLL transfer application. It is Denver Water's understanding that DRMS is approving the transfer application conditioned upon the following:

- an increase in the financial warranty from \$4.3 million to \$8.9 million;
- a requirement that CLL complete a conceptual site model of the Schwartzwalder Mine site and a plan for stabilizing the mine pool; and
- a condition providing that the financial warranty may be increased, if necessary, to address the long-term cost of operating the treatment system and managing the mine pool.

In Denver Water's January 24, 2018, letter, Denver Water requested a financial warranty based on \$361,000 per year in operation and maintenance costs. This amount was for operation and maintenance costs in perpetuity, and based upon a worst-case scenario. Denver Water understands the limitations on DRMS' authority, and will not oppose a financial warranty of \$8.9 million with the additional conditions referred to above. It is Denver Water's understanding that should the financial warranty be required, this amount will cover water quality treatment at the mine site for an extended period of time.

The conditions required by DRMS also provide additional assurance for Denver Water and its ratepayers. The conditions allow an increase of the financial warranty if the mine pool does not stabilize and remain stable for at least three years. The conditions also impose a

requirement that a conceptual site model be developed, which is an essential first step to support a decision-making process to manage and more effectively develop a treatment solution for the mine site.

Although Denver Water does not oppose the permit transfer request, because of the proximity of the mine to the public's water supply, it is critical that DRMS continue to closely monitor conditions at the Schwartzwalder Mine and hold CLL accountable for its obligations under the Schwartzwalder Mine permit. If the conditions and triggers described above are not met, it is also imperative that DRMS increase the financial warranty as appropriate to provide adequate protection for our drinking water supplies.

If you have any questions regarding the contents of this letter, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "James S. Lochhead", is written over the typed name and title.

James S. Lochhead
CEO/Manager
Denver Water

Cc: Colorado Legacy Land, LLC
City of Arvada
North Table Mountain Water and Sanitation District



COLORADO

Division of Reclamation,
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

February 20, 2018

Paul Newman
Colorado Legacy Land LLC
4601 DTC Blvd., Suite 130
Denver, CO 80231

RE: Revised Approval of SO-01 with Conditions, Transfer of Permit for Colorado Legacy Land, LLC as Successor Operator, Schwartzwalder Mine, Permit No. M-1977-300

Dear Mr. Newman:

On February 16, 2018, the Division of Reclamation, Mining and Safety approved the transfer of permit and succession of operator from Cotter Corporation to Colorado Legacy Land, LLC ("CLL") for the Schwartzwalder Mine, Permit No. M-1977-300, with conditions. The conditions for approval are as follows:

1. The new estimated liability amount of \$8,900,000.00 for the Schwartzwalder Mine exceeds the \$4,339,003.39 bond currently held. Please submit financial warranty in the amount of \$8,900,000.00. SO-01 will not be fully approved until the Division has received and approved a properly executed financial warranty not less than \$8,900,000.00. Questions regarding surety submittal should be directed to Financial Assurance Specialist, Barbara Coria, phone (303) 866-3567, extension 8148, or by email at Barbara.Coria@state.co.us. The financial warranty will be maintained at a level which reflects the current cost of reclamation, which includes all measures taken to assure the protection of water resources. Therefore, the financial warranty, currently set at \$8,900,000.00, is subject to adjustment and may be increased or reduced as necessary to ensure the completion of reclamation in the event of permit revocation and forfeiture of financial warranty.
2. CLL shall amend Permit No. M-1977-300, pursuant to Rules 1.1(6) and 1.10, affirming the permanent cessation of mining activities, provide a conceptual site model, provide a plan addressing the physical and chemical stabilization of the mine pool and specifically addressing the concentrations of dissolved uranium and other constituents as required under the conditions of the permit, and updating the reclamation and environmental protection plans (the "Amendment"). In addition to the standard public notice requirements, CLL shall provide timely notice of the Amendment, which shall include the conceptual model and all underlying assumptions and data used in the model, to Denver Water and City of Arvada.
3. Subsequent to the Division's review and approval of the permit Amendment described above, CLL may further modify the permit through the Technical Revision or Amendment process, addressing the long term cost of operating of the water treatment plant and managing the mine pool. The Division anticipates such demonstration will be based on



three consecutive years of data which verify the physical and chemical stabilization of the mine pool. Upon such demonstration CLL may request a reduction in financial warranty in accordance with Rules and Regulations for that portion of the financial warranty attributable to the water treatment and management of the mine pool. In addition to the standard public notice requirements, CLL shall provide timely notice of any/all requests for reduction of financial warranty to Denver Water and City of Arvada.

4. CLL will share its monthly and quarterly water quality monitoring sampling data with Denver Water and the City of Arvada and allow Denver Water and the City of Arvada access to the site sample taps to collect samples.

With the acceptance of the above four conditions, CLL is now the permitted operator of the Schwartzwalder Mine, and as such is responsible for all provisions in M-1977-300, as well as those specified in the Rules and Regulations. Cotter Corporation is relieved of all responsibilities concerning this operation.

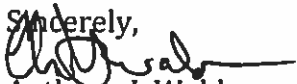
Please Note:

- All of the application materials, as amended and supplemented, are an integral part of your permit. They have been incorporated into the permit by reference. We presume you have a copy of all these materials; therefore, none have been enclosed with this mailing. We suggest you keep a copy of the permit and the permit application at the mining operation as a reference for operation personnel, to help ensure compliance with the terms of the permit.
- Changes in the mining and reclamation operations which differ from those described in the permit may require a modification to the permit. We suggest consulting the Rules and Regulations and/or contacting us to determine if a modification to the permit is necessary. Rule 1.10 pertains to Amendments, Rule 1.9 to Technical Revisions, and Rule 1.11 to Conversions.
- On your permit anniversary date each year, you must submit an annual fee and annual report to us. Please consult the Rules, Act, and your permit for specific requirements. Annual reports, maps and fees must be filed electronically using the Division's ePermitting portal. If you have not done so already, you will need to sign up for electronic filing of your annual report, map, and fee by visiting the Division's web site (<http://mining.state.co.us>) clicking on "ePermitting" on the home page, and then clicking on the "Sign up for Minerals Annual Report Electronic Filing" link.

The transfer of this permit does not result in the transfer of any other permits or licenses, with this Division, the State, or Federal Agency, which might be associated with this operation.

If you have any questions please contact me.

Sincerely,



Anthony J. Waldron
Minerals Program Supervisor