



DENR
SOUTH DAKOTA

**Board of Minerals
and Environment**

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Live audio of the meeting is available at <http://www.sd.net>

REVISED AGENDA

**Board of Minerals and Environment
Telephone Conference Call
September 17, 2020
10:00 a.m. Central Time**

10:00 a.m. Call to order and roll call

Approval of minutes from August 20, 2020, meeting

Update on Department of Environment and Natural Resources and Department of
Agriculture Merger – Secretary Roberts

Mining Issues

- Consent Calendar – Tom Cline

Bentonite Performance Minerals LLC request for approval of its socioeconomic contractor
for a large-scale bentonite mine permit application pursuant to SDCL 45-6B-33.1 – Eric
Holm

Oral Mining Reports

- VMC, LLC
- LAC Minerals
- Homestake Mining Company
- Wharf Resources

Board member biographies

Gregg Greenfield
Daryl Englund

Next meeting

Public comment period in accordance with SDCL 1-25-1

Adjourn

Interested parties who wish to participate in the telephone conference call should contact DENR at
(605) 773-3886 no later than 3:00 p.m. Central Time on Wednesday, September 16, 2020.

The board packet is available at <https://boardsandcommissions.sd.gov/Meetings.aspx?BoardID=67>

The audio recording and meeting packet for this meeting are available on the South Dakota Boards and Commissions Portal at <http://boardsandcommissions.sd.gov/Meetings.aspx?BoardID=67>

Minutes of the
Board of Minerals and Environment
Telephone Conference Call Meeting

August 20, 2020
10:00 a.m. Central Time

CALL TO ORDER: The meeting was called to order by Chairman Rex Hagg. The roll was called, and a quorum was present.

Chairman Hagg announced that the meeting was streaming live on SD.net, a service of South Dakota Public Broadcasting.

BOARD MEMBERS PRESENT: Rex Hagg, Gregg Greenfield, Glenn Blumhardt, Dennis Landguth, Doyle Karpen, Daryl Englund, Jessica Peterson, Bob Morris, and John Scheetz.

BOARD MEMBERS ABSENT: None.

OTHERS: Mike Lees, Eric Holm, Tom Cline, Bret Graves, Roberta Hudson, Patty McQuay, Minerals and Mining Program; Matt Zietlow and Ken Nelson, Wharf Resources (USA), Inc.; Joe Ungers and Jay Gear, Coeur Mining; Murray Epp and Hashi Hashi, Marsh JLT Specialty; Clint Beck, Pete Lien & Sons.

APPROVAL OF MINUTES FROM JULY 16, 2020: Motion by Karpen, seconded by Blumhardt, to approve the minutes of the July 16, 2020, Board of Minerals and Environment meeting. A roll call vote was taken, and the motion carried unanimously.

EXCHANGE OF SURETY FOR WHARF RESOURCES (USA), INC.'S RECLAMATION BOND FOR PERMITS 356, 434, 435, 464, AND 476: Eric Holm reported that in May 2020, the Board of Minerals and Environment approved Wharf Resources' request to reduce Bond Number K09047803, Westchester Fire Insurance Company, from \$15,786,000 to \$5,786,000 and replace the reduced amount with another reclamation bond. The current \$5,786,000 bond covers a portion of Wharf's \$37,379,300 reclamation bond.

In July 2020, Wharf submitted a request to replace the reduced Westchester bond with a \$5,786,000 bond from Everest Reinsurance Company. The ratings for Everest Reinsurance Company from AM Best, Standard and Poor's, and Moody's are superior, strong, and upper medium quality respectively, and the outlook from each rating agency is stable.

The department recommends that the board accept Bond No. ES00006611, Everest Reinsurance Company, in the amount of \$5,786,000 and release Bond No. K09047803 from Westchester Fire Insurance Company in the amount of \$5,786,000.

Mr. Morris asked Mr. Holm to explain why the bond was reduced to \$5,789,000 in May 2020. Mr. Holm stated that in May, the total bond wasn't actually reduced, but Wharf had submitted a rider to reduce the Westchester bond by \$10,000,000 and submitted a replacement bond from Liberty Mutual Insurance Company in the amount of \$10,000,000. The request from Wharf Resources today is to replace the remaining \$5,789,000 Westchester bond with a \$5,789,000 bond from Everest Reinsurance Company.

Matt Zietlow stated that Wharf Resources is requesting a simple exchange of the remaining portion of that bond; there is no change to the actual value.

Motion by Morris, seconded by Landguth, to exchange Westchester Fire Insurance Company, Bond No. K09047803, for Everest Reinsurance Company, Bond No. ES00006611, in the amount of \$5,786,000. A roll call vote was taken, and the motion carried unanimously.

UPDATE ON INCREASE TO RECLAMATION BOND AND POST-CLOSURE FINANCIAL ASSURANCE AMOUNTS FOR WHARF RESOURCES (USA), INC. PERMITS 356, 434, 435, 464, AND 476: Eric Holm provided a slide presentation. The board received copies of Mr. Holm's presentation in the board packet prior to the meeting.

Mr. Holm reported that earlier this year staff completed a comprehensive review and update of Wharf Resources' reclamation bond and post-closure financial assurance. Wharf Resources had made some changes to the water treatment process and staff wanted that to be reflected in the bond calculations.

Mr. Holm stated that after the comprehensive review was completed, staff determined that the reclamation surety should be increased to \$56,693,500. The amount is based on approximately 948 acres of disturbance at the mine. The current surety amount is \$37,379,300; therefore, Wharf Resources will need to submit additional surety in the amount of \$19,314,200.

One of the reasons for the increase is inflation. There have been increased equipment, labor, water treatment, seeding, and road maintenance costs. Staff also reviewed and revised the costs for road maintenance and material volumes used in reclamation. The labor rates were changed to Davis Bacon wage rates and seeding costs were revised to reflect today's costs.

Another reason for the increase is new facilities added as a result of technical revisions. The new facilities are the Flossie Pit and the Flossie and Ruby Waste Rock Dumps. New costs were also added in for pipeline removal, increased support staff, and sales tax which weren't covered under the current reclamation bond.

There are also associated increases in indirect costs because of the increases to the direct costs.

Responding to a question from Mr. Morris, Mr. Holm stated that the board toured the mine site in September 2019, and since that tour, the Flossie Pit and the Flossie and Ruby Waste Rock Dumps are new facilities that came into existence. Mr. Morris asked if the department provides notice of new facilities within the Wharf project. Mr. Holm stated that during the last Wharf expansion hearing the board granted approval for Wharf to submit technical revisions for these facilities.

Mr. Scheetz asked if Mr. Holm calculated the general cost for reclamation for the revegetation seeding per acre. Mr. Holm answered that he would discuss the costs later during his presentation.

Assumptions made by staff were based on projected site conditions at the end of 2020. Assumptions were also based on the department hiring a third-party contractor to complete the reclamation of the site and to operate the water treatment facility. Staff assumed a five-year reclamation period with the first year being site maintenance and water treatment, also known as holding costs, years two through five for earthwork and continued water treatment, and year six and beyond being post-closure care and maintenance covered under a post-closure bond.

Changes at Wharf Resources since the September 2019 board tour include the Flossie Pit and Depository, the New Ruby Dump, and additional reclamation at the Liberty Pit and Harmony Pit at the Golden Reward Mine located in the lower right side of the map.

Mr. Holm stated that the reclamation surety covers traditional reclamation earthwork and revegetation reclamation. It covers board approved post mine land uses of woodland grazing, homesites, recreation and industrial or commerce uses. The traditional reclamation at Wharf would be pit backfill, slope reduction/grading (three to one final slopes), topsoil placement (four inches typical), revegetation, mulching and fertilizing, erosion control, and building demolition. Staff assumed no salvage value of the buildings.

The slide presentation included a picture of the Liberty Pit at the Golden Reward Mine that was taken in July 2020 after pit backfilling was complete. Since the Liberty Pit has been backfilled, those costs were not included in the recalculated bond amount; however, the costs to re-slope the backfilled portion of the pit are included in the recalculated bond amount. The backfilled portion of the pit will be re-sloped to blend in with the adjacent ski area. The re-sloping, topsoil placement, and seeding costs for the pit are included in the recalculated bond.

Mr. Scheetz asked if Mr. Holm did a chemical analysis on the backfill. Mr. Holm stated that there was geochemical work done on the backfill material when this expansion project was permitted in 2011, and there was no concern of acid generation or acid material being placed in that pit.

Another slide showed sloping work on top of the backfilled Liberty Pit, or Liberty Satellite Pit, which was recently completed. All that remains to be done is topsoil application and seeding, which were included in the recalculated reclamation bond amount.

At the Golden Reward Harmony Pit, located at the base of the Terry Peak Ski Area, backfilling was approximately 88 percent complete as of July 23, 2020. Wharf anticipates that backfilling will be completed by the end of August 2020. The backfilling costs were not included in the recalculated bond amount; however, the re-sloping topsoil placement costs were included.

Reclamation of both the Liberty Pit and the Harmony Pit will be completed in 2021. This includes final sloping, topsoil placement, and seeding.

Staff calculated the total base reclamation cost for earthwork and revegetation at \$30,616,400. That amount was added to the indirect costs, leaving the total earthwork and revegetation costs at

\$42,862,960. Mr. Holm's slide presentation included a breakdown of the costs and indirect costs (Slides 10 and 11).

Regarding backfilling costs, Mr. Scheetz asked if Wharf itself is completing the backfilling. Mr. Holm stated that the cost is based on hiring a third-party contractor to complete the backfilling.

Mr. Holm stated that water treatment costs were recalculated based on the changes Wharf is making to the water treatment processes. Staff reviewed costs for cyanide neutralization for the heap leach pads and process ponds. This would cover neutralization of five heap leach pads and five process ponds. Staff also reviewed costs for nitrate treatment for the heap leach pads, process area, denitrification pond, and the Ross Valley and Reliance Depositories. Water sampling and analysis costs were also reviewed. Staff determined the total base water treatment costs at \$7,254,789. The base cost for water treatment was added to the indirect costs for a total of \$10,542,805 for water treatment. A breakdown of these costs is included in the presentation on Slides 13 and 14.

Mr. Scheetz asked Mr. Holm to discuss the line item for consumables in the water treatment costs. Mr. Holm said that is included in the cost of pad neutralization/denitrification. The consumables are for things such as chemicals, electricity, natural gas and plant operation and maintenance. Mr. Holm said he will go into more detail about this in the post-closure bond presentation.

Mr. Holm stated that the total base cost for monitoring during the five-year post-closure period was calculated at \$406,122 for water quality sampling equipment and aquatic/biological monitoring. The \$406,122 was added to the monitoring indirect costs and costs of water quality sample analysis and the Ross Valley Plant assay analysis for a total cost of monitoring and analysis of \$1,512,667.

Staff also calculated miscellaneous office costs and indirect costs which totals \$123,765

The total earthmoving, water treatment and miscellaneous cost totaled \$55,042,198. The inflation cost adjustment of \$1,651,266 was added for a total reclamation bond of \$56,693,464, rounded to \$56,693,500.

Mr. Holm noted that Wharf has also posted a \$130,000 bond to the Department of Transportation to cover costs of removing the road crossing on Nevada Gulch Road.

Mr. Holm stated that the reclamation surety will be reevaluated at the end of 2021 because the Flossie Pit and Trojan Waste Rock Facility will be complete, there will be substantial changes to the Green Mountain Pit backfill, and the remaining Golden Reward sloping, topsoil placement, and seeding will be complete.

The department recommends that the board approve the increase for Wharf Resources' reclamation bond from \$37,379,300 to \$56,693,500.

Chairman Hagg asked Mr. Holm to discuss the department's efforts with Wharf during this process. Mr. Holm stated that during the staff's review of the reclamation bond and the post-closure bond, he alerted Matt Zietlow at Wharf that staff needed to review both bonds because the current bonds didn't reflect what was truly happening in the water treatment processes. Mr. Holm said he also felt

that the department needed to review the costs of reclamation and water treatment to make sure the bond was sufficient. Mr. Holm said he worked with Mr. Zietlow when determining the costs.

Mr. Zietlow stated that the review of the bonds was very thorough, and it took time, but overall, it went smoothly.

Mr. Morris asked if Mr. Holm is happy with the department's relationship with Wharf Resources. Mr. Holm said he believes the department has a very good working relationship with Wharf Resources. Mr. Morris asked if Wharf has been diligent in responding to the department's suggestions. Mr. Holm answered yes.

Mr. Scheetz stated that the bond amount for Brohm was severely insufficient. He asked how the process for determining Wharf's bond amount differed. Mr. Holm stated that the department has learned a lot since calculating Brohm's bond amount many years ago. He agreed that the Brohm bond was severely under calculated. When the Bureau of Reclamation came on at the Brohm project, the department asked them to review the bond calculations and the department learned that things such as contractor overhead and profit and scope and bid were not included in the indirect costs for the Brohm bond. Also, mobilization and contingency percentages were low. Also, only earthwork and reseeded were included in the Brohm reclamation bond at the time. Pit backfilling and costs for water treatment were not included in the Brohm bond amount.

Mr. Scheetz asked if Mr. Holm believes the contingency amounts are sufficient. Mr. Holm said he believes the contingency amounts are sufficient.

Mr. Holm then presented the revised postclosure financial assurance for Wharf. He stated that all affected lands under Mine Permit Nos. 356, 434, 435, 464, and 476 were included under the post-closure financial assurance plan. Wharf is to submit an updated post-closure plan at mine closure. During the mine expansion permit hearing, the Board of Minerals and Environment previously approved a 50-year post-closure period.

After a review of the post-closure bond was completed, staff determined that the post-closure financial assurance amount should be updated to \$38,396,200. The current surety amount is \$26,800,000; therefore, Wharf Resources will need to submit additional surety in the amount of \$11,596,200.

The reasons for the surety increase are inflation, new costs, and associated increases in indirect costs.

Inflation costs include increased labor, water treatment, water sampling and analysis, monitoring well plugging costs, and year 50 site-closure costs.

New costs include pipeline removal, increased support staff, and sales tax.

Mr. Holm's presentation included a map of the 2020 Wharf post-closure bond acreage. This map shows the areas that will be needed during post-closure, which include the access road, the Juno Pond, Juno topsoil stockpile, Ross Valley water treatment complex, the office, and the Ross Valley Pond.

Assumptions used for the post-closure financial assurance amount were for hiring a third party contractor to operate the water treatment plant and hiring a contractor to close the facility when water treatment is no longer necessary. The calculations are based on perpetual water treatment calculations developed by other state and federal agencies, the present worth analysis of annual costs adjusted for inflation, that the post-closure bond is the sum of present worth, that there will be a 50-year post-closure period based on Wharf models, and that post-closure Year 1 begins at end of reclamation Year 5. This does not include the portions of Golden Reward Mine outside the expansion area. The areas at the Golden Reward Mine were covered under Mine Permit 450 and is a separate post-closure bond, which staff is currently reevaluating under the five-year of the post-closure period.

When calculating the post-closure financial assurance, staff considered the annual operation and maintenance costs which include road maintenance/snow removal, vegetation maintenance, erosion control, weed control, two vehicles every 10 years, fuel and maintenance for the vehicles, a caretaker/water sampler for the site, and partial fence removal in year 3 in some of the reclaimed areas, and post-closure indirect costs were reviewed.

The annual water treatment costs and indirect costs were considered for the Ross Valley Water Treatment Plant Complex. Staff analyzed Wharf's average costs since 2017 to treat nitrates and selenium at the mine. These costs were based on a reduced treatment rate of 150-gallons-per-minute after the heap leach pads and process ponds are reclaimed. Staff considered the costs for plant chemicals and nutrients, electricity, natural gas, plant operation and maintenance, assay analysis lab supplies, boiler replacement every 10 years, two plant operators, a project manager, and long-term liner and plant replacement in Year 25.

Mr. Holm stated that the annual monitoring costs for water sample analysis and aquatic/biological monitoring are reduced over time as water treatment progresses. Water sampling equipment varies from \$4,341 to \$12,797 per year based on what is needed. Plant assay analysis was also determined. Indirect costs for monitoring were also considered at the same percentages as the reclamation bond.

Responding to a question from Mr. Scheetz, Mr. Holm stated that for the long-term liner and plant replacement line item, staff determined that the existing liner and plant will be good for 25 years, and at year 25 the lining system will be replaced and improvements to the water treatment plant will be made if needed. Liner repairs and pump replacement in the plant is included in the annual operation and maintenance costs. The costs were calculated in today's dollars, and it be inflated and discounted in year 25.

Year 50 final closure consists of removing everything and reclaiming the mine site, which will be approximately 52.3 acres. Included in the final closure costs are removal of the water treatment complex, building demolition, removal of the ponds, remove the access road, reclaim the topsoil stockpile area, plug monitoring wells, pipeline removal/plugging, and labor costs. The total base closure cost is \$1,214,385. The base closure cost was added to the indirect costs for a total closure cost of \$1,785,091.

For the post-closure years 51 through 55 inspection and monitoring period the cost is \$25,000, and in year 60 the fence will be removed at a cost of \$55,810, for a total base closure cost of \$80,810 plus contingencies and annual miscellaneous and indirect costs.

Mr. Holm stated that in 2015 Wharf constructed a compacted clay capping system over backfill in West Liberty Pit to reduce elevated sulfate in well SM-01B. The well was originally part of Golden Reward Permit 450. Now that it is part of the Wharf expansion, it was moved to the Wharf post-closure bond. Sulfate levels are decreasing after cap completion, but still above the 500 mg/l ground water standard. Sulfate is projected to meet the groundwater standard in post-closure year 13. Staff added a contingency cost of \$280,000 in year 13 of the post-closure bond for the passive treatment system in the event sulfate stays above the groundwater standard.

Mr. Scheetz asked why there are elevated sulfate levels in the well. Mr. Holm stated that the well is located in a small area where there are elevated sulfate levels. The West Liberty Pit also had sulfate material at the bottom of the pit, and with modeling it was determined that there was water seeping through a previous cap that was put over the pit. Wharf later installed an additional cap to eliminate that leakage at the interface of the pit highwall and the previous cap. With this new cap, it appears that sulfates are being reduced in that area.

Staff discussed with the State Investment Council what the proper inflation and discount rates should be used in post-closure bonds. Historically, there has been a 2% difference between the two rates. Since there is a historic inflation rate of 3%, a 5% discount rate was used. Wharf's current discount rate was set at 4.3% several years ago.

Mr. Holm said the department's goal in applying the 5% discount rate and the 3% inflation rate to all large-scale gold post-closure bonds has now been met.

Mr. Holm explained how the post-closure financial assurance present worth analysis is done (Slides 38-43).

The department recommends approval of the increase to Wharf's post-closure financial assurance from \$26,800,000 to \$38,396,200.

Mr. Morris asked why a present value analysis was not done for the reclamation bond. Mr. Holm stated that it is updated annually for inflation and equipment costs, so staff did not feel a present value analysis was needed for the reclamation bond.

Mr. Morris said with a 3% inflation rate and a 5% discount rate, there is a 2% gap. He asked why a 3% discount isn't used rather than 5%. Mr. Holm stated that the 5% discount rate and the 3% inflation rate was recommended by the State Investment Council.

Mr. Morris asked, if approved by the board, will the \$38,396,200 post-closure bond be the same amount for the next 50 years or will it be reviewed and adjusted if needed. Mr. Holm said if the department feels that discount rates are not keeping up or if inflation gets higher, the bond amount can be adjusted and presented to the board.

Mr. Scheetz asked how long Wharf Resources plans to be mining at the site.

Mr. Zietlow stated that at this time it is anticipated that the active life of the Wharf mine is until 2027 to 2030.

Mr. Scheetz asked if Wharf is doing additional exploration at this time. Mr. Zietlow answered that exploration is an on-going process, and Wharf wants to keep things going as long as possible.

Mr. Morris asked if Wharf internally sets aside a certain amount of money as reserve each year for reclamation or post-closure. Mr. Zietlow stated that Wharf has an internal bookkeeping process for reserving money under an accretion bond, which is similar to a savings account. Mr. Morris asked Mr. Zietlow if that information is proprietary in nature or would Wharf have an issue sharing those internal figures with DENR. Mr. Zietlow stated that he would have to check with Wharf's corporate finance office.

Mr. Morris asked that Wharf check with the corporate finance office because, he believes, Wharf is the expert as to Wharf's reclamation and post-closure obligations, and if Wharf is making internal reserves, that would be a good indicator to DENR if their calculations and analysis is closer on point.

Mr. Zietlow said he will talk to the corporate finance office, but Wharf's accounting is based on Wharf's own costs.

Chairman Hagg requested board action on the reclamation bond and post-closure financial assurance amounts for Wharf Resources.

Motion by Morris, seconded by Scheetz, to approve an increase to Wharf Resources (USA), Inc.'s reclamation bond for Permits 356, 434, 435, 464, and 476 from \$37,379,300 to \$56,693,500. A roll call vote was taken, and the motion carried unanimously.

Motion by Landguth, seconded by Peterson, to approve an increase to Wharf Resources (USA), Inc.'s post-closure financial assurance bond for Permits 356, 434, 435, 464, and 476 from \$26,800,000 to \$38,396,200. A roll call vote was taken, and the motion carried unanimously.

Regarding the submittal of surety bonds to cover the increased reclamation bond and postclosure financial assurance, Jay Gear, Vice President of Environment, Health and Safety, Coeur Mining, stated that he sent a letter to the Board of Minerals and Environment on August 6, 2020, requesting that the board extend the period for acquiring the surety bonds to cover Wharf's increased bond amount until December 17, 2020. At that time, Wharf would formally present the surety bond package to the board for approval. Wharf's current \$64,200,000 reclamation and post-closure bonds would remain fully in place during this time, along with the current cyanide bond of \$710,000. The time extension is needed because there is an approximate \$30,900,000 increase to the overall amount, which is much more than normally what is able to be handled and processed in the time period between the board's scheduled meetings. Coeur has initiated the process of arranging for the increased bond coverage from multiple surety providers, and has retained Marsh JLT to oversee surety market bonding efforts and to help strengthen Coeur's overall portfolio, market position and risk exposure. Mr. Gear said an approximate \$30,900,000 increase is a large amount, and market conditions are not moving at the same rate of speed as previously under pre-

Covid-19 conditions. Coeur's proposed implementation schedule is to manage the reality caused by Covid-19 and the challenges that represents.

Murray Epp and Hashi Hashi, Marsh JLT, discussed the difficulties that Covid-19 has created in relation to the market, capacity constraints, delays in response time from underwriters, and delays in capacity commitment from underwriters.

Mr. Gear requested that the board allow Wharf to submit the reclamation bond and post-closure financial assurance surety bonds at the December 2020 board meeting.

Mr. Hagg asked Mr. Gear if he is confident that by December 2020 Coeur will be in a position to submit the reclamation bond and post-closure financial assurance bond. Mr. Gear stated that Coeur will submit the reclamation bond and post-closure financial assurance bond at the December meeting.

Mr. Scheetz stated that he has no issue with delaying submittal of the surety bonds, but gold prices have increased almost 25%, so that should improve Coeur's earnings and their ability to meet the reclamation obligations.

Mr. Epp said he doesn't disagree with Mr. Scheetz's comment. The Q3 and timing will provide a public report that will be attractive to the surety underwriters, but as always, they are looking at historical data so the results and the impact of these high commodity prices, which is a compelling story for the surety credit underwriters, aren't shown on paper until those Q3 results are released.

Mr. Morris asked Mr. Holm if there is anything that would suggest that it would not be prudent to extend the final requirement until the December meeting. Mr. Holm answered that the department does not object to waiting until December.

Chairman Hagg requested board action.

Motion by Morris, seconded by Karpen, to approve Coeur's request to extend the period for acquiring Wharf's increased bond amount until December 17, 2020. A roll call vote was taken, and the motion carried unanimously.

Mr. Morris asked Coeur Mining to keep Mr. Holm and DENR apprised of the developments so if there are any issues that arise, the board and the department know about them.

RELEASE OF LIABILITY FOR GOLDSTAKE EXPLORATIONS (SD) INC., EXPLORATION NOTICE OF INTENT 422: Roberta Hudson reported that Goldstake Explorations was issued EXNI-422 in July 2013 to excavate up to 250 test pits and drill up to 30 holes for gold approximately 5.5 miles west of Vale, South Dakota. In 2013, Goldstake drilled, plugged, and reclaimed 27 drill holes and excavated and backfilled 16 test pits.

On May 29, 2014, the department inspected the area and determined only minimal reclamation work was required, consisting of some additional regrading and reseeding. As a result of this inspection and subsequent board approval, the bond was reduced to \$2,500 in September 2014.

There has been no additional exploration activity and Goldstake has filed for release of liability.

Ms. Hudson stated that travel restrictions prevented DENR staff from conducting another inspection at the site earlier this year, and in lieu of an inspection, the department received letters from the three landowners impacted by the exploration activity stating they found the reclamation work completed on their properties to be satisfactory.

The department recommends release of Goldstake Explorations' reclamation liability and CD No. 23163342, Pioneer Bank and Trust, Spearfish, South Dakota, in the amount of \$2,500.

Motion by Blumhardt, seconded by Landguth, to approve release of reclamation liability and CD No. 23163342, Pioneer Bank & Trust, in the amount of \$2,500 for Goldstake Explorations (SD), Inc., Spearfish, SD, EXNI-422. A roll call vote was taken, and the motion carried unanimously.

UPDATE ON BROHM EPA SUPERFUND SITE: Ms. Hudson provided copies of her presentation to the board members prior to the meeting. She presented the 2019 annual update on the Gilt Edge Ming Superfund site remediation and reclamation activities.

Ms. Hudson discussed remediation costs, future earthwork to be completed, future operable unit 1 work, operable unit 2 acid water treatment, 2019 weather events, and 2018 versus 2019 water storage.

Mr. Scheetz asked what the actual storage capacity is at the Brohm site. Ms. Hudson said storage capacity at Brohm is 202.3 million gallons.

Ms. Hudson also discussed the administrative settlement agreement and order on consent between EPA, the state of South Dakota, and Agnico Eagle Mines Ltd., and provided a project update on Agnico.

On February 12, 2018, EPA, the State of South Dakota, and Agnico Eagle Mines Ltd. entered into an Agreement and Order on Consent (AOC) for Agnico to perform certain remedial investigative activities at the Gilt Edge Mine Superfund site.

Agnico will conduct environmental investigation work focusing on identifying contaminant sources, specifically cadmium, entering Strawberry Creek.

The work will include drilling boreholes and collecting samples and information on fracture zones and groundwater flow, collecting surface soil and sediment samples, facility upgrades to support the investigation work, such as telecommunications improvements, and Agnico may utilize information from the work to determine if a viable mineral resource still remains at the site.

DENR is continually looking for ways to reduce site operation and reclamation costs which ultimately reduce federal and state taxpayer costs.

Agnico's investigation will provide geologic and mineral information that can be used by EPA and DENR to develop future cleanup and reclamation plans. Agnico will also be able to analyze the

geologic information to assess the site's mineral potential for a redevelopment project that could also decrease reclamation and operation costs.

The drilling defined under the Administrative Settlement Agreement and Order on Consent is nearly complete. Agnico will be completing the remaining holes during the next month. The Strawberry Creek surface contamination assessment is complete. No significant contaminant source was identified. The facility upgrades to the office building are complete and telecommunication upgrades will be made in 2020.

Ms. Hudson answered questions from the board about funding for the site.

UPDATE ON PETE LIEN PERMIT 57: Mr. Holm reported that during its November 21, 2019, meeting, the board approved a five-year extension of the reclamation period for Pete Lien's Rapid City Quarry covered under Large Scale Mine Permit 57. During discussions prior to the board's decision, Chairman Hagg asked Pete Lien to meet with the department to develop markers for completion of reclamation under the mine permit and present an agreed upon plan to the board for review.

On January 31, 2020, Clint Beck of Pete Lien met in Pierre with Minerals and Mining staff to discuss a proposal developed by Pete Lien to transfer a portion of the mine permit area to a mine license and set reclamation markers for the remaining mine permit acreage. After some minor changes, staff and Mr. Beck came to an agreement on Pete Lien's proposal.

Clint Beck presented the Permit 57 benchmarks and action plan to the board. Copies of the presentation were provided to the board prior to the meeting.

Mr. Beck's presentation included a map of the current reclamation status for Mine Permit 57 and a map showing the area that Pete Lien will be requesting to be transferred to a mine license.

Mr. Beck stated that at the January 31, 2020, meeting Minerals and Mining staff and Pete Lien & Sons agreed that much of the area currently has mining related and/or industrial uses and is currently providing support for the Black Hawk quarry, which is northwest and west of the Rapid City quarry, and could also continue support in the future for nearby mining operations.

The map shows the operation and activity in each specific area. Facilities at the site include a stormwater catchment pond, a ready mix plant with a precast building, support offices and a scale, lime and hydrate facilities, maintenance shop, the main scale house, the crushing and processing area with material stock piles, settling pond, wash plant, and an inventory control yard.

With the described activity, it was determined that it is reasonable to request transfer of liability from the current mine permit to a new mine license. Nearby licensed sites were discussed, however, Pete Lien & Sons and DENR agreed that a new license may be the most appropriate.

Mr. Beck stated that Pete Lien & Sons will soon submit the license to transfer this land to the mine license.

Mr. Beck said Pete Lien & Sons has operated the Rapid City quarry under Mine Permit 57 since 1972. The lime plant has been operating since 1961. Construction of support buildings and other industrial operations have been ongoing since this time, which includes the wash plant and ready mix plant.

Mr. Beck stated that Pete Lien will continue reclamation commitments with final seeding by December 31, 2020, request release of previously reclaimed land by August 31, 2020, and submit a mine license by October 31, 2020.

Mr. Holm answered questions from the board regarding transferring the site to a mine license, air quality permits, and reclamation at the site.

BOARD MEMBER BIOGRAPHIES: John Scheetz and Dennis Landguth provided personal biographies.

NEXT MEETING: The next meeting is scheduled as telephone conference call meeting on September 17, 2020.

PUBLIC COMMENT PERIOD: No one from the public commented.

ADJOURN: Motion by Morris, seconded by Englund, that the meeting be adjourned. A Roll call vote was taken, and the motion carried unanimously.

Secretary

Date

Witness

Date

Consent Calendar
South Dakota Board of Minerals & Environment

August 20, 2020

<u>Permit Holder</u>	<u>Permit No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Exchange of Surety for Wharf Resources (USA) Inc.'s Reclamation Bond:</u>				
Wharf Resources (USA) Inc. Lead, SD	356, 434, 435, 464, & 476	\$5,786,000	Westchester Fire Insurance Company	Exchange Westchester Fire Insurance Company, Bond No. K09047803, for Everest Reinsurance Company, Bond No. ES00006611, in the amount of \$5,786,000.
<u>Increase to Wharf Resources (USA), Inc.'s Reclamation Bond:</u>				
Wharf Resources (USA) Inc. Lead, SD	356, 434, 435, 464, & 476	\$37,379,300		Recommend Wharf's reclamation bond be increased from \$37,379,300 to \$56,693,500.
<u>Increase to Wharf Resources (USA), Inc.'s Postclosure Financial Assurance Bond:</u>				
Wharf Resources (USA) Inc. Lead, SD	356, 434, 435, 464, & 476	\$26,800,000		Recommend Wharf's postclosure financial assurance bond be increased from \$26,800,000 to \$38,396,200.

Consent Calendar
South Dakota Board of Minerals & Environment

				<i>August 20, 2020</i>
<u>Permit Holder</u>	<u>Permit No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Release of Reclamation Liability & Surety:</u>				
Goldstake Explorations (SD) Inc. Spearfish, SD	EXNI-422	\$2,500	Pioneer Bank & Trust, Spearfish	Release liability and CD No. 23163342, Pioneer Bank & Trust, in the amount of \$2,500.
		Portions of Sections 4, 17, 19, 20, 21, & 22; T7N-R5E, Meade County Portions of Sections 26, 33, 34, & 35; T8N-R5E, Butte County		

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Release of Surety:</u>					
James Reynolds Sioux Falls, SD	16-1003		\$2,000	First National Bank, Sioux Falls	Release \$2,000.
<u>Release of Liability & Surety:</u>					
Loren De Jong Kimball, SD	92-438		\$1,000	United Fire & Casualty Company	Release liability and \$1,000.
		438001	NE1/4 Section 15; T105N-R68W, Brule County		
Kenneth Kloucek Scotland, SD	83-170		\$1,000	Security State Bank, Tyndall	Release liability and \$1,000.
		170001	NW1/4 Section 22; T95N-R58W, Bon Homme County		
<u>Release of Liability:</u>					
Ken Engel Hamill, SD	94-517		\$1,000	First Fidelity Bank, Winner	Release liability.
		517002	SE1/4 Section 8; T100N-R74W, Tripp County		

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Release of Liability:</u>					
Northern Plains, LLC Winner, SD	98-634		\$2,000 \$500	First National Bank, Pierre Sentinel Federal Credit Union, Box Elder	Release liability.
		634003	Lots 1, 2, 3, 4, & the rest of Section 8; T100N-R73W, Gregory County		
Walworth County Highway Department Selby, SD	83-7		EXEMPT	NA	Release liability.
		7032	SW corner of NW1/4 Section 5; T123N-R78W, Walworth County		

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfer of Liability & Release of Surety:</u>					
Sibson Gravel LLC Steamboat Springs, CO	08-857		\$1,500	The Buffalo Ridge Bank, Beardsley, MN	Transfer liability and release \$4,500.
			\$3,000	Frandsen Bank & Trust, Clinton, MN	
		857001	Section 14; T121N-R50W, Grant County		
		857002	Section 22; T121N-R47W, Grant County		
		857003	Section 1; T127N-R76W, Campbell County		
Transfer to:					
CT Sibson Gravel & Crushing, Inc. Beardsley, MN	19-1054		\$20,000	Frandsen Bank & Trust, Clinton, MN	
R & L Wright Enterprises Inc. Elkton, SD	15-987		\$1,500	Dacotah Bank, Webster	Transfer liability and release \$1,500.
		987001	NW1/4 Section 1; T123N-R53W, Day County		
Transfer to:					
Theodore Wasilk Waubay, SD	20-1078		\$2,000	Minnwest Bank, Summit	

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfer of Liability:</u>					
Myrl & Roy's Paving Inc. Sioux Falls, SD	83-95		\$20,000	Great American Insurance Company	Transfer liability.
		95011	Lots 1, 3, & 4 of Royal Wood Addition in SW1/4 Section 27; T101N-R48W, Minnehaha County		
		95013	NW1/4 SE1/4, NE1/4 SW1/4, plus Tr. 6 & 7 NW1/4 Section 11; T101N-R49W, Minnehaha County		
		95018	W. 1534.04' of S. 1703.78' SE1/4 Section 27; T101N-R48W, Minnehaha County		
		95023	SW1/4 Section 9; T101N-R50W, Minnehaha County		
Transfer to:					
L.G. Everist Inc. & Subsidiaries Sioux Falls, SD	83-37		\$20,000	The Aetna Casualty & Surety Company	

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfer of Liability:</u>					
Myrl & Roy's Paving Inc. Sioux Falls, SD	83-95		\$20,000	Great American Insurance Company	Transfer liability.
		95001	SW1/4 NW1/4 Section 8; T101N-R50W, Minnehaha County		
		95003	SW1/4 NE1/4 & S1/2 SE1/4 NE1/4 Section 16; T101N-R50W, Minnehaha County		
		95010	SE1/4 SE1/4 Section 8; T101N-R50W, Minnehaha County		
		95014	Tr. B SE1/4 Section 17; T98N-R48W, Lincoln County		
		95015	NE1/4 Section 2; T101N-R49W, Minnehaha County		
		95020	NE1/4 Section 8; T101N-R50W, Minnehaha County		
		95026	NE1/4 Section 16; T106N-R52W, Lake County		
Transfer to:					
TCB LLC Sioux Falls, SD	20-1080		\$20,000	First National Bank, Sioux Falls	

Consent Calendar
South Dakota Board of Minerals & Environment

September 17, 2020

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfer of Liability:</u>					
Turtle Creek Construction LLC Redfield, SD	09-877		\$20,000	Lexon Insurance Company	Transfer liability.
		877002	Section 35; T116N-R70W, Hand County		
Transfer to:					
Brownlee Construction, Inc. Watertown, SD	89-393		\$20,000	United Fire & Casualty Company	



BENTONITE

Performance Minerals LLC

Colony, Wyoming Plant

554 US Hwy 212,

Belle Fourche, SD 57717

Phone (307)896-2596/Fax (307)896-4588

September 1st, 2020

RECEIVED

SEP 01 2020

MINERALS & MINING PROGRAM

Board of Minerals and Environment
SD Department of Environment and Natural Resources
523 E Capitol Avenue
Pierre, South Dakota 57501

RE: Approval of Socio-Economic Assessment Author

Dear Board of Minerals and Environment;

Please consider this letter a request for the South Dakota Board of Minerals and Environment to review and approve the qualifications of Dr. Michael K Madden to complete a Socio-Economic Assessment of the effects of two proposed bentonite mines in Butte, County SD. Bentonite Performance Minerals, LLC (BPM) will in the near future be submitting Requests for Determination of Special, Exceptional, Critical or Unique Lands and if applicable Large Scale Mine Permit Applications for one bentonite mining project located approximately 3.5 miles northwest of Belle Fourche, SD. The mine will be known as the Security Mine and will be the third mining project BPM has had in South Dakota within the last 10 years.

BPM requests that Dr. Madden be approved to conduct the Socio-Economic Assessment for the proposed mines. The assessment will be completed by Dr. Madden and included in the Large Scale Mine Permit Applications. Dr. Madden has conducted numerous of these assessments for other Large Scale Mine Permit Applications in SD. Thank you in advance for your consideration of Dr. Madden. Dr. Madden's Resume is attached for the board's review.

Sincerely

Michael Barr
Mineral Resource Coordinator
Bentonite Performance Minerals, LLC

RECEIVED
SEP 01 2020
MINERALS & MINING PROGRAM

RESUME'

PERSONAL DATA: Dr. MICHAEL K. MADDEN

Date of Birth: September 13, 1943.

Residence: 512 North Pinnacle, Buffalo, Wyoming 82834

Telephone:307-620-9065

ACADEMIC QUALIFICATIONS:

B. S. 1965. South Dakota State University, Economics and Mathematics. Ph. D. 1970. Iowa State University, Economics and Statistics.

Research Reports and Publications Etc.

Limited Socioeconomic Assessment, Large Scale Mine Permit - Loring Quarry, Custer County, South Dakota, July 2020.

Economic Impact of Central States Fair Facilities, February, 2109.

Limited Socioeconomic Assessment, Proposed Bentonite Mine Permit, State Line Permit Area, American Colloid Company, July, 2017

Limited Socioeconomic Assessment, Bentonite Mineral Performance, Inc., January, 2013.

Socioeconomic Assessment, VMC, LLC, The Deadwood Standard Project, February 2012.

Economic Update, of and Eastside Gaming Facility Near Kadoka, SD, April 2011.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2011.

Socioeconomic Assessment, Wharf Mining Company, October, 2010

Limited Socioeconomic Assessment, Proposed Bentonite Mine Permits, Davis North and Davis South, American Colloid Company, March, 2010.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2010.

Assessment of Socioeconomic Impacts Expected with the Keystone XL Pipeline Project, October, 2009

Demographic and Economic Characteristics of Snowmobile Recreation in the Province of Saskatchewan, For the Provincial Government of Saskatchewan, July 2009.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2009.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2008.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2007.

Economic Impact of Native American Educational Institution Graduates, The Case of United Tribes Technical College, Update, July, 2007.

Sector Economic Impacts Associated with Big Stone II Power Plant, June 2006.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2006.

Estimate of the Distribution of Economic benefits by Travel Season, February, 2005.

Economic Feasibility of a Tribal Casino near Kadoka, South Dakota, June 2005.

Estimate of the Distribution of Economic benefits by Travel Season, February, 2005.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2005.

Economic Impact of Native American Educational Institution Graduates, The Case of United Tribes Technical College, May, 2005.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2004.

South Dakota Occupancy and International Travel Survey, 2003, December 2003.

Economic and Market Issues Relevant to a Trust Company Application in Southeastern South Dakota, October 2003.

Economic Issues Associated with a Proposed Branch Bank in the Rapid City Area, September 2003.

Marketing and Promotion Update, Rapid City Convention and Visitors Bureau, May 2003.

Economic and Fiscal Issues Associated with Additional Meeting Facilities in Oacoma, SD, February 2003.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2003

South Dakota Occupancy and Foreign Travel Survey, 2002, December 2002.

Economic Impacts related to Buffalo Gap National Grassland, June 2002

Market and Promotion Update, Rapid City Convention and Visitors Bureau, April 2002.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2002.

South Dakota Occupancy and Foreign Travel Survey, 2001, December 2001.

Market Feasibility for a Choice Hotels International Lodging Property in Rapid City, Sept 2001.

Visitor Industry Potential for the City of Lead and Estimates of Economic Impacts, June 2001

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2001.

South Dakota Occupancy and Foreign Travel Survey, 2000, December 2000.

Taxable Sales in Six Western South Dakota Communities, September 2000.

External Economic Impacts Traced to the Deadwood Hospitality Industry, February 2000.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 2000.

South Dakota Occupancy and Foreign Travel Survey, 1999, December 1999.

Economic Feasibility and Market Analysis of Expanded Visitor Amenities in the City of Huron, August 1999.

Economic and Fiscal Incentives and Disincentives Associated with Urban Sprawl, April 1999.

Economic and Fiscal Impacts of the North Dakota Travel Industry, April 1999.

Economic, Fiscal and Funding Issues Associated with the Rapid City Hospitality Industry, March 1999.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 1999.

Economic Impact of The Hospitality Industry in Pierre, SD, November, 1998

Earnings and Employment Survey, Deadwood Gaming Association, October 1998

Market Analysis of a Financial Institution for the Hermosa Area, June 1998

Economic and Fiscal Impacts of the North Dakota Travel Industry, June 1998

Economic Redevelopment Issues Associated with Lawrence County, April 1998

Market Characteristics of Terry Peak Real Estate, March 1998.

An Analysis of Flows of Public School Revenue and Expenses Related To Wharf Resources And its Employee Households, February, 1998.

Property Taxes for County Purposes, The Case In Lawrence County, February, 1998

Fiscal Impact to the State of Repealing the Contractor's Excise Tax, January 1998

Economic Issues Associated with Conversion of Bison to Federal Mandatory Meat Regulations, January 1998.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, December 1997.

Socioeconomic Analysis of a Rural Water System in West-Central South Dakota, Socioeconomic Portion of Environmental Assessment, June 1997.

Business Volume Projections, Involving a Historical Park Near Spearfish, SD, April, 1997.

The Economic Significance of the Travel Industry in North Dakota, March 1997.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, December 1996.

Issues Concerning the Medically Indigent in South Dakota Counties, September 1996.

A Study of Alternative uses of a Lodging Property, July 1996.

Limited Socioeconomic Analysis, Wharf Resources, June 1996.

A Preliminary Market Analysis of Thunderhead Episcopal Camp, May 1996.

A Study of the Multifamily Housing Market, Rapid City, SD, March, 1996.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 1996.

Economic Impacts Associated with the University of South Dakota School of Medicine, November 1995.

Economic Impact of the Mining Industry in South Dakota, June 1995.

Economic Significance of the Retail Sector in Sioux Falls, SD, May 1995.

Limited Socioeconomic Assessment of a Proposed Mine Expansion of Brohm Mining Company, April 1995.

Community Survey: Watertown, South Dakota, (Jointly with Personal Group, Inc.), March 1995.

Community Survey: Hughes and Stanley Counties, (Jointly with Personal Group, Inc.), February, 1995.

1994 South Dakota Non-Point Source Pollution Survey Report, (Statistical Analysis Section), January 1995.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, December 1995.

Time and Motion Study, Supervisors Pennington County Jail, December 1994.

A Study of the Economic Consequences and Visions for Future Economic Development in the Rapid City Area, Rapid City Economic Development Partnership, November 1994.

Wages and Benefits in the Rapid City Region, A Comparative Analysis, September 1994.

Economic Impact of the Health Industry in Sioux Falls, South Dakota, September 1994.

Fiscal Issues Associated with the 1994 Property Tax Limit Initiative, July, 1994.

Volume Projections, Solid Waste Facility, Rapid City, SD , June 1994.

Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, January 1994.

Socioeconomic Issues Relevant to Development of Launch Control Complex Visitor Center, For US Park Service, December 1993.

- A Baseline Socioeconomic Analysis of Keystone, South Dakota, December 1993.
- South Dakota Lodging, Occupancy Survey Annual Report, November, 1993.
- Survey of Technical Training Needs in Central South Dakota, September 1993.
- Economic Significance of the Travel Industry in Twelve South Dakota Towns and Cities, October 1993.
- Population Perspectives, City of Spearfish, June, 1993.
- A Value Added Analysis of John Morrell & Company, Sioux Falls, SD, June, 1993.
- The Gold Market Infrastructure and its Relation to Homestake Mining Company, May 1993
- Statistical Update, Economic and Fiscal Impacts Associated with the Travel Industry in South Dakota, December 1992.
- Market Survey, St. Mary's Hospital, Pierre, SD, December 1992.
- Economic and Fiscal Impacts of Gaming in Deadwood South Dakota, 1992 Update, November, 1992.
- Long Term Projections of the Black Hills Economy and Forecasts of Energy Demands, October 1992.
- Socioeconomic Impacts of a Natural Gas Pipeline into the City of Pierre, SD. September, 1992.
- Socioeconomic Impacts of an Ash Monofill near Edgemont, SD, (With Others) September, 1992.
- Socioeconomic Impact analysis of Wharf Resources Inc. Update, September, 1992.
- Market Analysis of a Proposed Lodging Facility in Spearfish Canyon, March 1992.
- Survey Analysis of Voter Perceptions; Rapid City School Bond Issue, January 1992.
- Statistical Update, Economic and Fiscal Impacts Associated with the Vacation Travel Industry in South Dakota, September 1990 Through August 1991, December 1991
- Gaming in South Dakota: A Study of Gambling Participation and Problem Gambling and A Statistical Description and Analysis of its Socioeconomic Impacts, November 1991.
- Market Feasibility of a Lodging Facility Project in Watertown, South Dakota, June 1991.

- Economic Values Associated with the Sport of Golf, Rapid City, SD, May 1991.
- Economic and Fiscal Impacts Associated with the First Year of Gaming, Deadwood, SD, March, 1991.
- Market Analysis of a Proposed Lodging Facility, Spearfish, SD, January, 1991
- Economic Impacts Associated With South Dakota Parks and Recreation Areas, December 1990.
- Statistical Update, Economic and Fiscal Impacts Associated with the Vacation Travel Industry in South Dakota, December 1990.
- Analysis of Use Patterns and Economic Impacts of the Black Hills Rail to Trail Project, November 1990.
- Economic Impacts Associated with Wharf Resources, Inc., August, 1990.
South Dakota Lodging, Occupancy Survey Design, May, 1990.
- Market Issues, The Lodging Industry Deadwood, SD Area, February 1990.
- Economics of Supply Factors Associated with the City of Rapid City Water Enterprise, January 1990.
- Statistical Update, Economic and Fiscal Impacts Associated with the Vacation Travel Industry in South Dakota, September 1988 to July 1989, December 1989.
- Socioeconomic Impact Analysis, Open Cut Project, Homestake Mining Company, November 1989.
- Occupancy Survey Design, South Dakota Department of Tourism, June 1989.
- Demographic and Economic Characteristics of Snowmobile Recreation in the Black Hills of South Dakota, 1989 Update, March 1989.
- Economic and Engineering Feasibility of Wood Pellet Manufacturing in The Black Hills of South Dakota, (A Future Fund Grant), with others, February 1989
- Economic and Fiscal Impacts Associated with the Vacation Travel Industry in South Dakota, January 1989.
- Sand and Gravel on the Pine Ridge Indian Reservation: A Market Analysis, October 1988.
- Economic Impacts Associated with the South Dakota School of Mines and Technology, August 1988.

Survey Description of Buyer Perceptions of Real Estate Marketing, August 1988.

Economic and Fiscal Impacts Associated With Limited Gaming in Deadwood, South Dakota, May 1988.

Demographic and Economic Characteristics of Snowmobile Recreation in the Black Hills, April 1988.

Survey Description of Seller Perceptions of Real Estate Marketing, April 1988

A Statistical Description of the Impact of Dakota Proposition II, March 1988. (With Cynthia Stubblefield)

Limited Socioeconomic Impact Analysis: Brohm Mining Corporation, January 1988.

Relative Retail Strength of Retail Sectors in South Dakota Small Towns, South Dakota, Retail Prophet, December 1987. (With Cynthia Stubblefield).

Limited Socioeconomic Impact Analysis: Homestake Mining Company -Open Cut Project, November 1987.

The Economics of Long Run Average Costs in South Dakota Public Schools. South Dakota Business Review, September 1987. (With Cynthia Stubblefield).

Economic Survey of Central Standard Time in Western South Dakota, July 1987. (With Jane Dockery).

Efficiency Analysis of Service Channels, Pennington County Government, South Dakota, April 1987.

Economic Feasibility of Establishing a Motorcycle Hall of Fame in Sturgis South Dakota, March 1987.

Author: "Rapid Changes", Column Appearing in Investment Report, 1983 - 1986.

Economic Impacts Associated with the Vacation Travel Industry in South Dakota, South Dakota Business Review, June 1986.

Alcohol Related Costs in Pennington County and a Fiscal Analysis of Means of Financing, May 1986.

Economic Factors Associated with Highway 85 Reconstruction Alternatives North of Deadwood and Lead, South Dakota, March 1986.

Economic and Fiscal Impacts Associated With the Vacation Travel Industry in South Dakota, January 1986.

Economic Issues Associated With A Proposed Mine Expansion, Wharf Resources (U.S.A.) Homeowners Inc. Terry Peak, South Dakota, 1985.

Economic Feasibility and Market Analysis of a Mobile Home Park Northwest of Rapid City, South Dakota, 1985.

Economic and Fiscal Impacts of the Rapid City Area Hospitality Industry, August 1984.
A Marketing Analysis of a Proposed Subdivision in South-west Rapid City, May 1984.

Economic Impact of a Low Level Radioactive Disposal Site at Igloo, South Dakota, January 1984.

Local Economic Indicators, Chamber of Commerce Bulletin, April 1981.

Economic Development Revenue Bonds in South Dakota, South Dakota Business Review, May 1977. Reprinted in South Dakota Municipalities, August 1977.

Basic Industries and Regional Development, paper presented to the Black Hills Regional Chamber of Commerce Retreat. February 1975.

Major Advisor of Approximately 140 Master's student research papers and theses in the areas of Business Analysis and Economics.

Impact of the User Fee on Visitations and Concession Revenue in Custer State Park, South Dakota Social Science Journal, Fall 1973.

PROFESSIONAL EDUCATIONAL EXPERIENCE:

Instructor of Economics, Iowa State University, 1967-1968.

Assistant Professor of Economics, University of Wyoming. 1968-72

Associate Professor of Economics, South Dakota State University. 1972-75.

Associate Professor of Economics and Statistics, University of South Dakota, 1975-77.

Professor of Economics, University of South Dakota, 1977 - 1998.

Dean of Graduate Studies, National American University, 1999 - 2003

COMMUNITY SERVICE:

Secretary-Treasurer, Rapid City Civic Center Corporation, 1974 - 84.

Policy Board, Black Hills Council of Local Governments, 1975 - 82.

Alderman, Rapid City Common Council, 1974 - 82.

Trustee, South Dakota State Board of Retirement and Director, West Dakota Water Development District, 1984 - 1990.

Member and Director, Whispering Pines Volunteer Fire Department, 1984 - 1989.

Member and Second Vice Chairman, Black Hills Area Red Cross, 1987 -1990.

Member, South Dakota Governor's Council of Economic Advisors, 1991 to 2003.

Member, Board of Directors, Enchanted Hills Water Assn., 1985-90, 1992 to 2004.

Member, Buffalo Chamber of Commerce, 2003-present

President, Mountain Ridge Development and Improvement Association 2006 - 2017

Member, Johnson County Tourism Board, 2005 -2018

Legislator, Wyoming State House of Representatives, District 40, 2006 -2019

***LAC Minerals (USA) LLC
Richmond Hill Mine***



Reclamation Acreage Overview

■ Total Released Acres	265.94
■ Total Remaining Affected Acres	75.09
■ Un-reclaimed Acres (for water treatment)	73.33
■ Reclaimed Affected Acres	0.35
■ Acreage to be reclaimed in short-term	1.41



2019 Activities

Richmond Hill Mine

2019 Activities

- Continued Water Management and Treatment
- Continued Monitoring Activities



Water Management and Treatment

Water Management and Treatment

Leach Pads and Ponds

- Biological Water Treatment Plant Operations – Se Treatment
- Operated Biological WTP with RO discharging 18.6 million gallons.
- Operated Biological WTP independently over winter months during 2019 discharging 7.32 million gallons.

Water Management and Treatment

Leach Pads and Ponds

- Approximately 20.2 million gallons of water are currently stored in treatment ponds
- Leach pad effluent flows averaged approximately 39.6 gpm in 2019

Leach pad effluent flows in 2019 were higher than 2018 flows as precipitation (especially during the summer months) was higher in 2019, resulting in higher infiltration rates; (precipitation was 36.39 inches in 2019 and 33.66 inches in 2018)

Water Management and Treatment

Spruce Gulch

Reclaimed Site of Waste Rock Disposal Facility

- Water treatment - pH adjustment with sodium hydroxide as needed
- Nearby South Gulch water is pumped to Spruce Gulch Treatment Pond for treatment



Monitoring Activities

Pit Impoundment and Leach Pad Monitoring

- The 2019 Pit Backfill Monitoring/Capping System Monitoring continues to indicate that the cap is functioning to and better than design expectations
- The leach pad capping system continues to perform well limiting infiltration

Site-wide Monitoring Results

- Water Quality Monitoring
 - Water Quality at the site is generally stable or improving
 - Cleopatra Creek water quality monitoring confirms there are no impacts from the Richmond Hill Mine
 - Monitoring is continuing and site-specific performance criteria were developed in consultation with DENR to ensure continued protection of the environment in postclosure

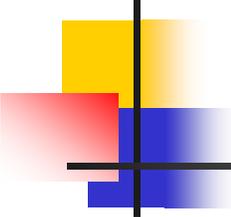
Richmond Hill Mine

2020 Plans

- Continue RO and Biological Water Treatment
- Continue Monitoring Activities

End of Presentation
Thank You





Homestake/Richmond Hill 2019 Employment and Contributions

Year-end employment

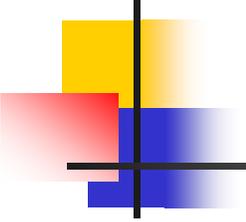
11 FTE's

(+1 FT contract emp
and 1 PT emp)

2019 Contributions

(Includes Monetary & Non-Monetary)

\$17,275

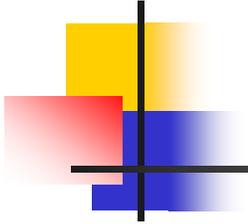


Homestake Mine Open Cut Review

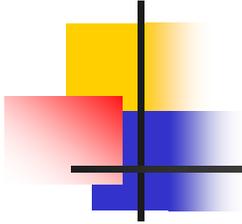
Reclamation has been completed at the waste rock facilities

As of the end of 2019:

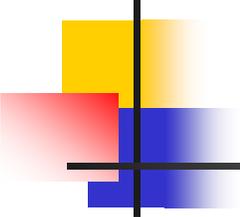
- Approx. 555 Acres Released
- Approx. 87 Remaining Affected Acres
- Reclamation complete on all affected acres



2019 Activities



Water Treatment Plant Improvements



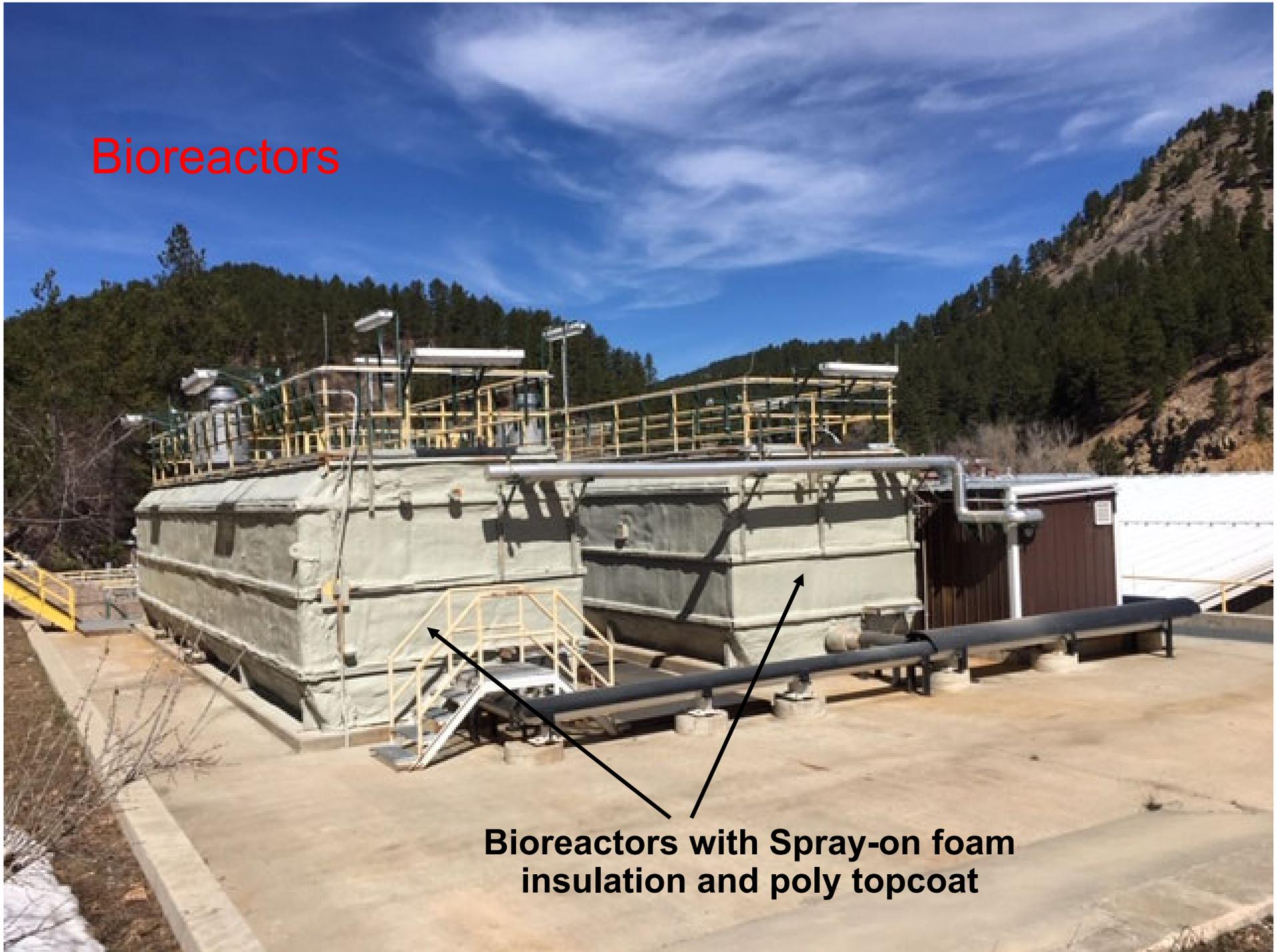
Water Treatment Plant Improvements

- Reinsulating and Repairing Blacktail WTP Bioreactors
 - Removed existing metal siding and insulation
 - Removed holding pins
 - Inspected and repaired pinholes in ICB walls
 - Conducted leak test
 - Spray-on foam insulation and poly topcoat

Bioreactors

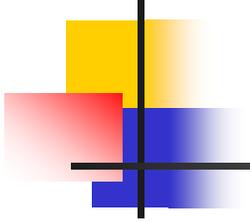


Bioreactors

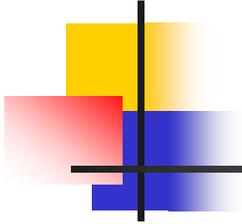


Bioreactors with Spray-on foam insulation and poly topcoat

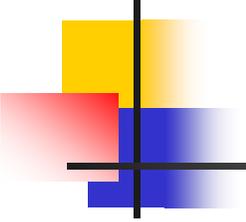




2019 Monitoring

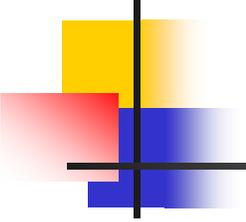


Deadwood Creek Monitoring Results



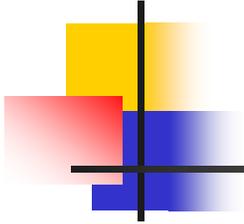
Deadwood Creek Monitoring Results

- Blacktail Water Treatment Plant treats water emanating from the toes of Sawpit and East Waste Rock Facilities
- WTP system removes selenium and Total Dissolved Solids (TDS) from water prior to discharging to Deadwood Creek

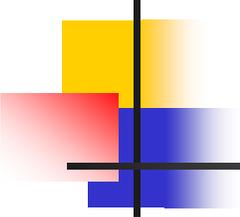


Deadwood Creek Monitoring Results

- Blacktail Water Treatment Plant discharge consistently meets permitted effluent limits
- Instream selenium and TDS levels consistently meet the water quality standards

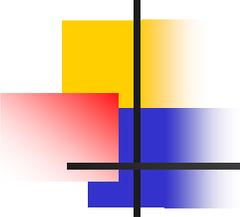


Geotechnical Monitoring



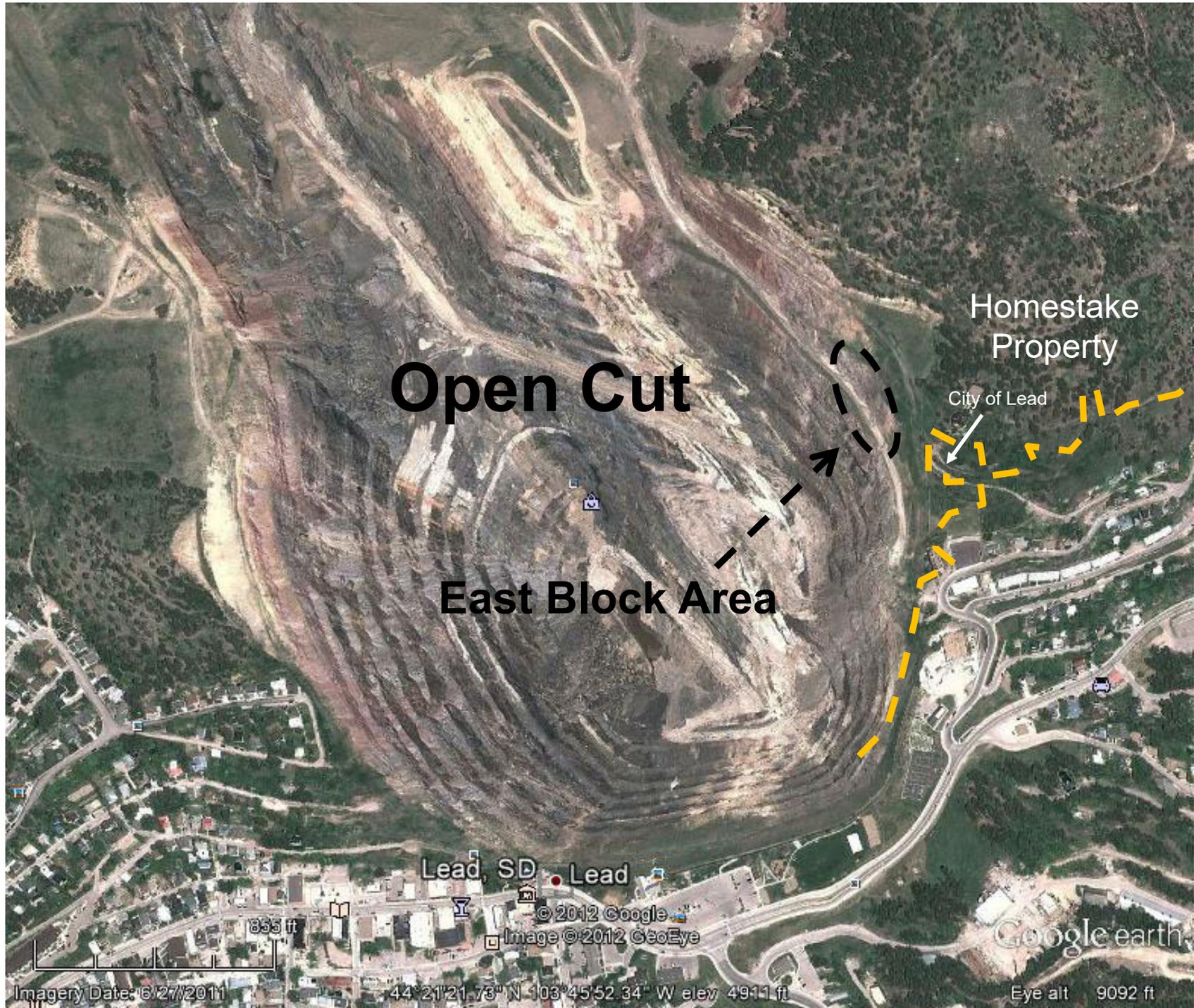
Geotechnical Monitoring

- Homestake employs multiple displacement monitoring techniques
 - Survey Monuments and Prisms – **New Methods**
 - Piezometers
 - Inclinometers
 - Visual Inspections
 - Drone surveys
 - InSAR Monitoring



Geotechnical Monitoring

- Prisms and Survey Monuments
 - New survey methods and protocol employed in 2019 using GPS technology
 - Improved repeatability over conventional survey methods
 - Survey performed in SD State Plane coordinates
 - Current survey readings do not reflect real slope movements - instead, current readings represent a new baseline for all future monitoring



Open Cut

Homestake
Property

City of Lead

East Block Area

Lead, SD • Lead

© 2012 Google

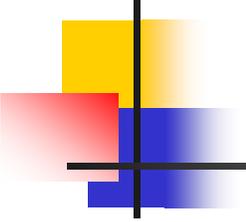
Image © 2012 GeoEye

Google earth

Imagery Date: 6/27/2011

44° 21' 21.73" N 103° 45' 52.34" W elev 4941 ft

Eye alt 9092 ft



Geotechnical Monitoring

- Open Cut East Block
 - Area failed on June 14, 2019
 - Approx. 3,000 cubic yards of material sloughed into the Open Cut
 - Failure was contained within pit boundary on Homestake-controlled property
 - Additional material at East Block (est. 3,000 – 5,000 cubic yards) could progress to failure
 - Measurements do not indicate a new area of instability or significant upslope enlargement of existing instability

East Block - June 14, 2019



East Block - June 15, 2019



East Block - June 14, 2019



East Block - June 15, 2019

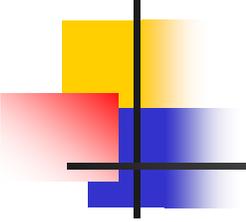


East Block - June 14, 2019



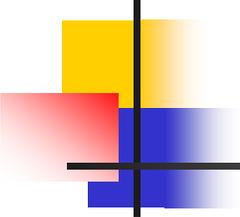
East Block - June 15, 2019





Geotechnical Monitoring

- East Waste Rock Facility (Bobtail Gulch)
 - From 1994 to 2008 showed shear movement
 - In 2009 and 2010, a buttress was installed
 - Movement has slowed following construction of buttress. It's expected to continue to slow
 - Movement is primarily settlement and relaxation of the fill

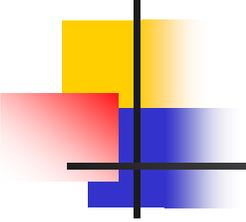


Geotechnical Monitoring

- East Waste Rock Facility - 2019
(Blacktail, Gayville and East Ravine)
 - Prisms and Survey Monuments
 - As previously reported, readings of some monument surveys after October 2015 showed possible divergence from past monitoring trends.
 - Current survey readings do not reflect real slope movements - instead, current readings represent a new baseline for all future monitoring

East Waste Rock Disposal Facility





Geotechnical Monitoring

- East Waste Rock Facility

- (Blacktail, Gayville and East Ravine)

- Piezometers
 - No significant buildup of water pressures in waste rock facility
- Inclinometers
 - The new inclinometers installed in Blacktail, Gayville and East Ravine in June 2018 have indicated less than 0.01, 0.02 and 0.01 inches/month, respectively of northward surficial movement with no shear displacement
- Visual Inspections
 - Tension crack at 5100 bench at Gayville is the only surficial change observed. No significant change to crack within last year
 - Tension crack appears to be associated with topsoil slumping



ENE VIEW



**TENSION CRACK AT THE CREST OF THE 5100 BENCH IN GAYVILLE GULCH LOOKING WEST
(PHOTOGRAPH TAKEN ON OCTOBER 17, 2019)**

CLIENT/PROJECT



DECEMBER 2019 SEMI-ANNUAL
GEOTECHNICAL MONITORING REPORT
LEAD, SOUTH DAKOTA

DRAWN

AJS

DATE

2/10/2020

JOB NO.

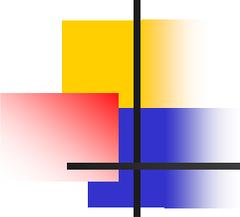
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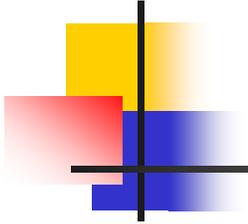
FILE NO.

PHOTOGRAPH 6

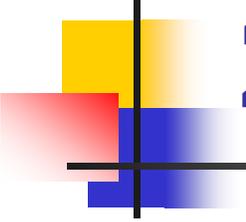


Geotechnical Monitoring

- East Waste Rock Facility
(Blacktail, Gayville and East Ravine)
 - Drone Surveys
 - Drone Surveys have been conducted since 2017. The surveys showed no significant divergent movement from past monitoring trends
 - InSAR Monitoring (Interferometric Synthetic Aperture Radar)
 - Biannual Monitoring
 - Data indicates that Blacktail, Gayville and East Ravine are behaving as expected
 - No areas of concern noted

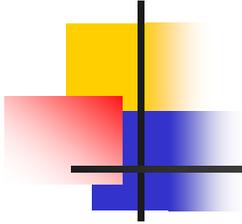


2020 Projects



Homestake Mine 2020 Projects

- Complete transition to all stainless steel at GG seepage collection facility
- Continue Water Treatment Agreement with SDSTA
- Continue Water Treatment



End of Presentation
Thank You



Annual Update - 2019

Wharf Resources

Matt Zietlow, Environmental Manager
June 2020



NYSE: CDE

> Wharf Resources, Annual Update

- 2019 Mining Update
- 2019 Production
- Community/Demographics
- Env/Agencies/County

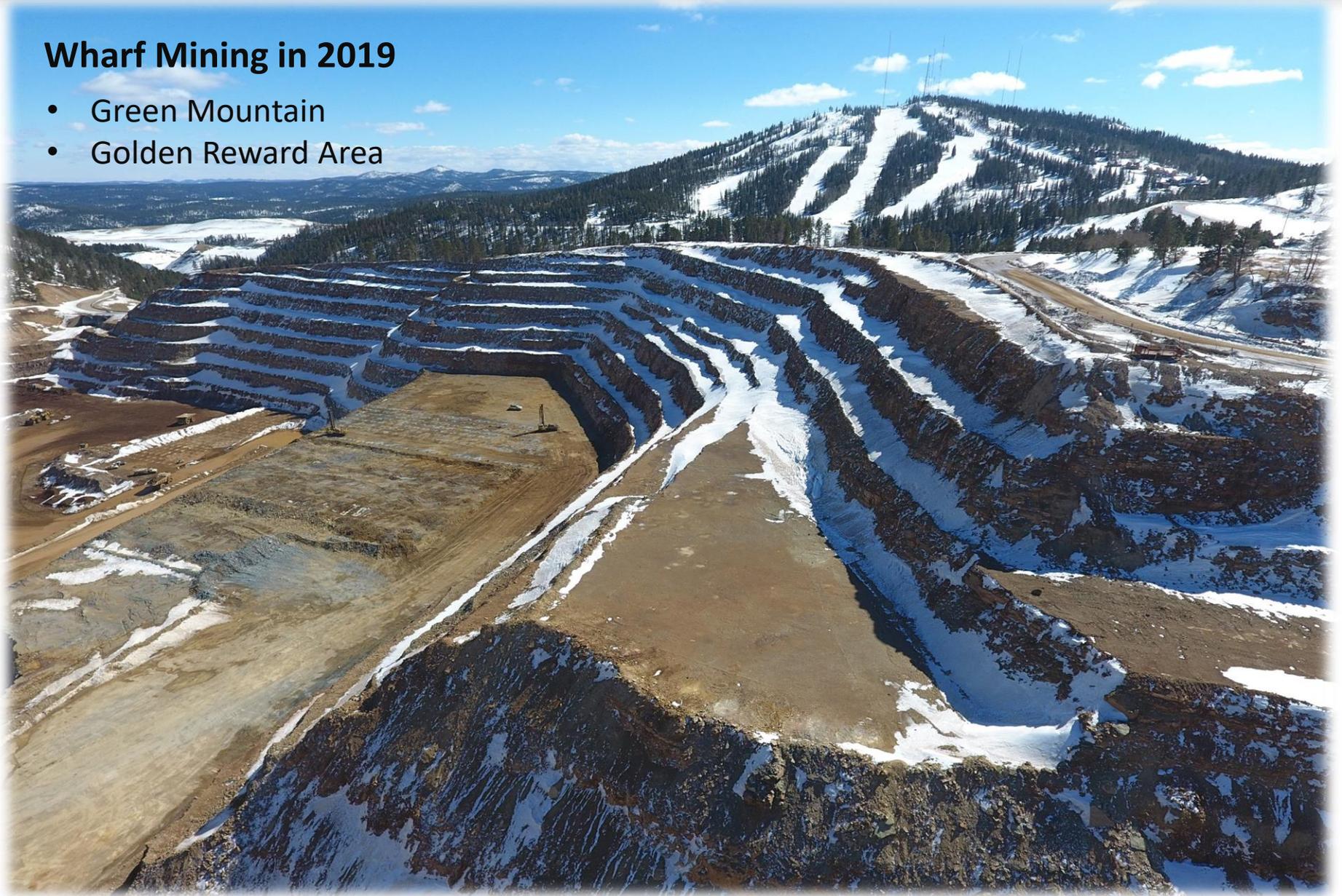


> Site Overview



Wharf Mining in 2019

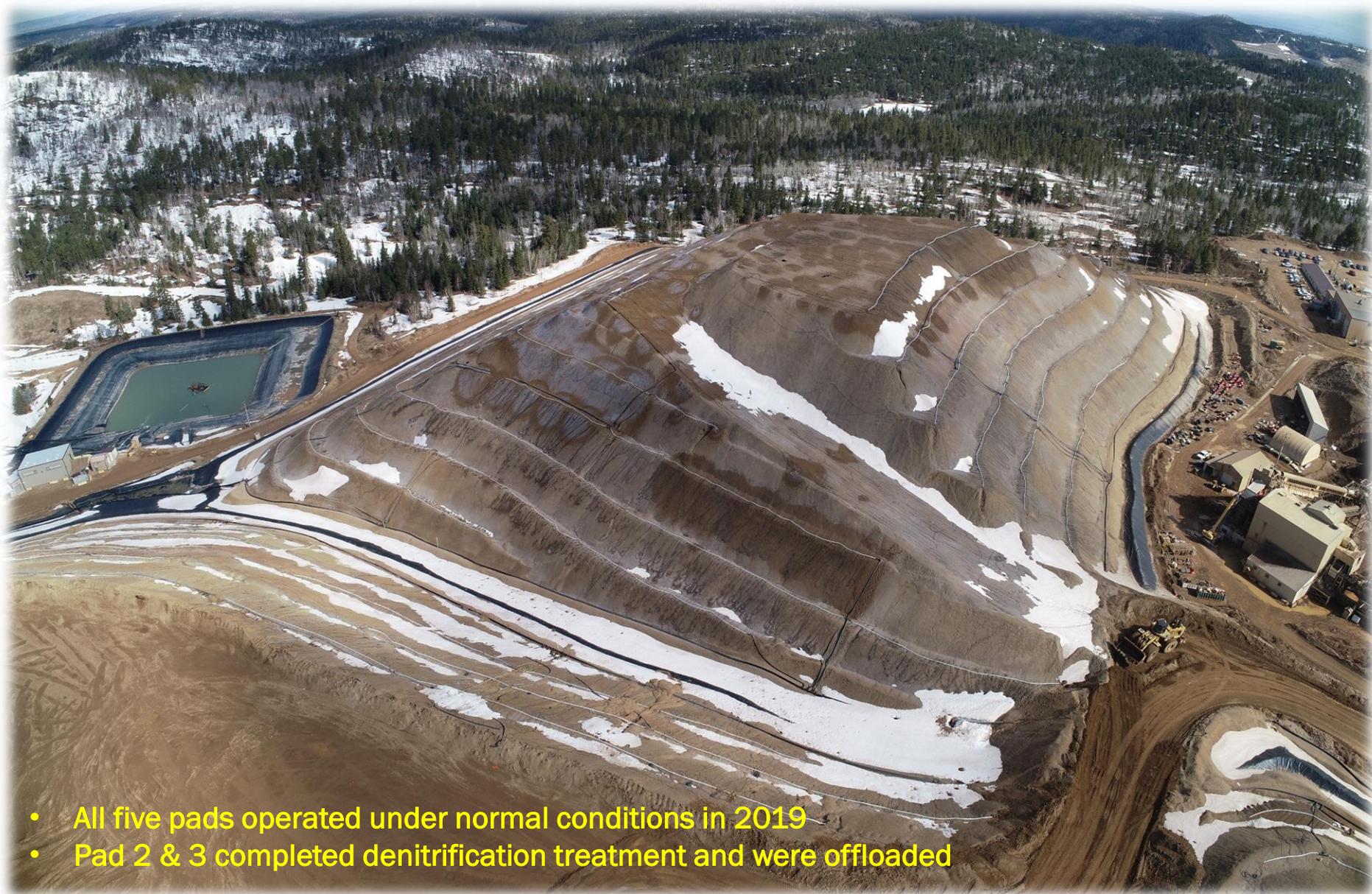
- Green Mountain
- Golden Reward Area



Mining Update



> Leach Pads Update



- All five pads operated under normal conditions in 2019
- Pad 2 & 3 completed denitrification treatment and were offloaded

2019 Production

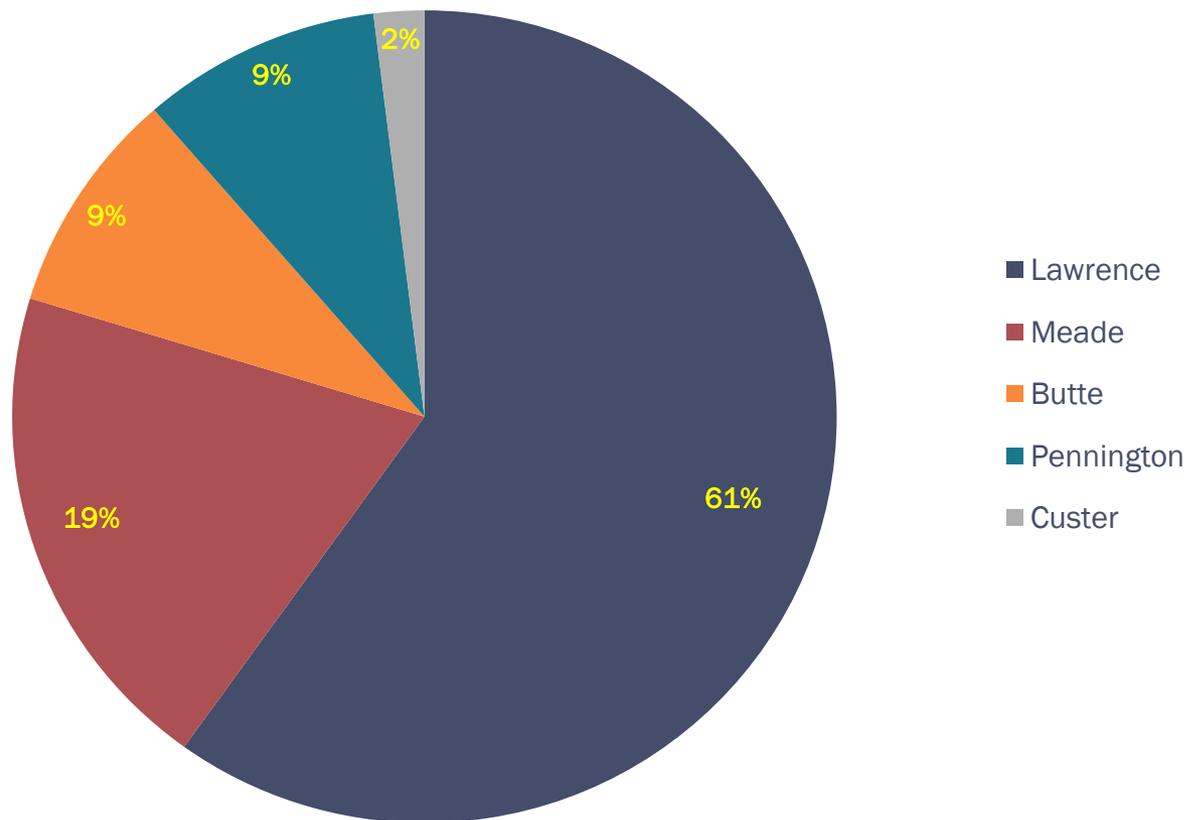
4,613,360	Tons of Ore Mined
8,461,270	Tons of Waste Mined
1,091,615	Tons of Rehandle
84,172	Ounces of Gold Produced
63,483	Ounces of Silver Produced



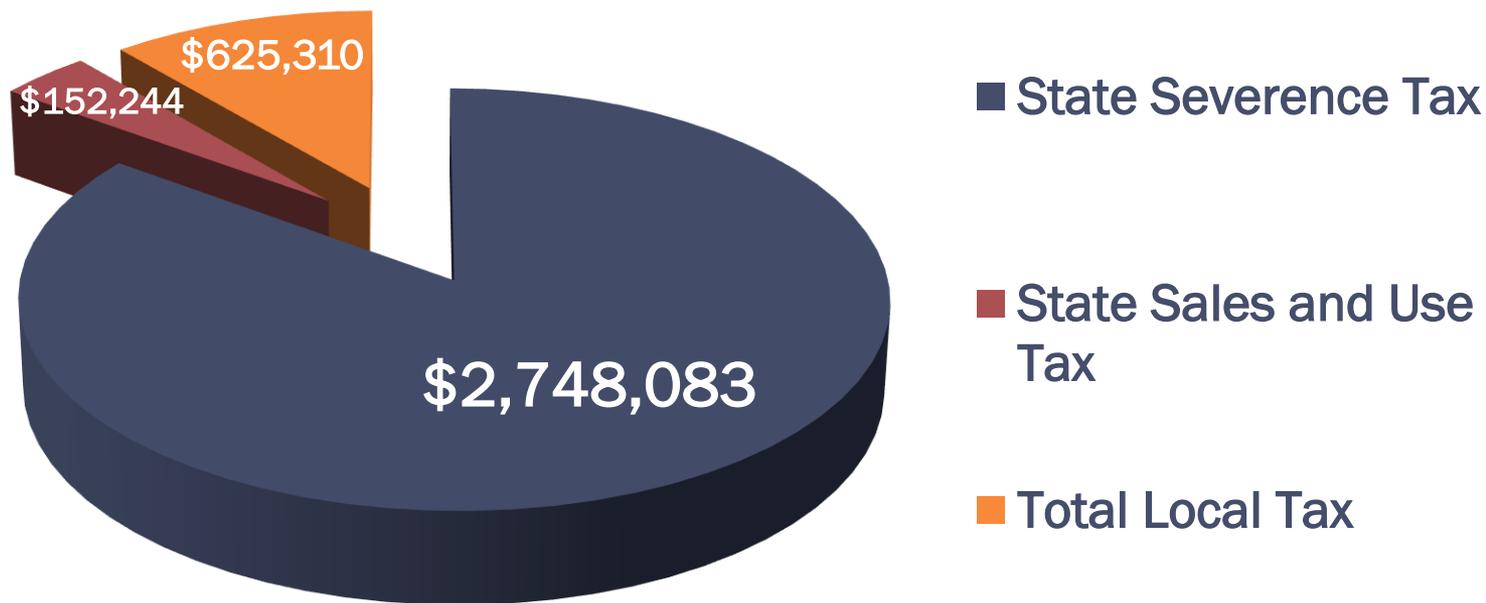
Wharf 2019 payroll was \$21.2 million w/benefits

- \$14.7 million excluding benefits

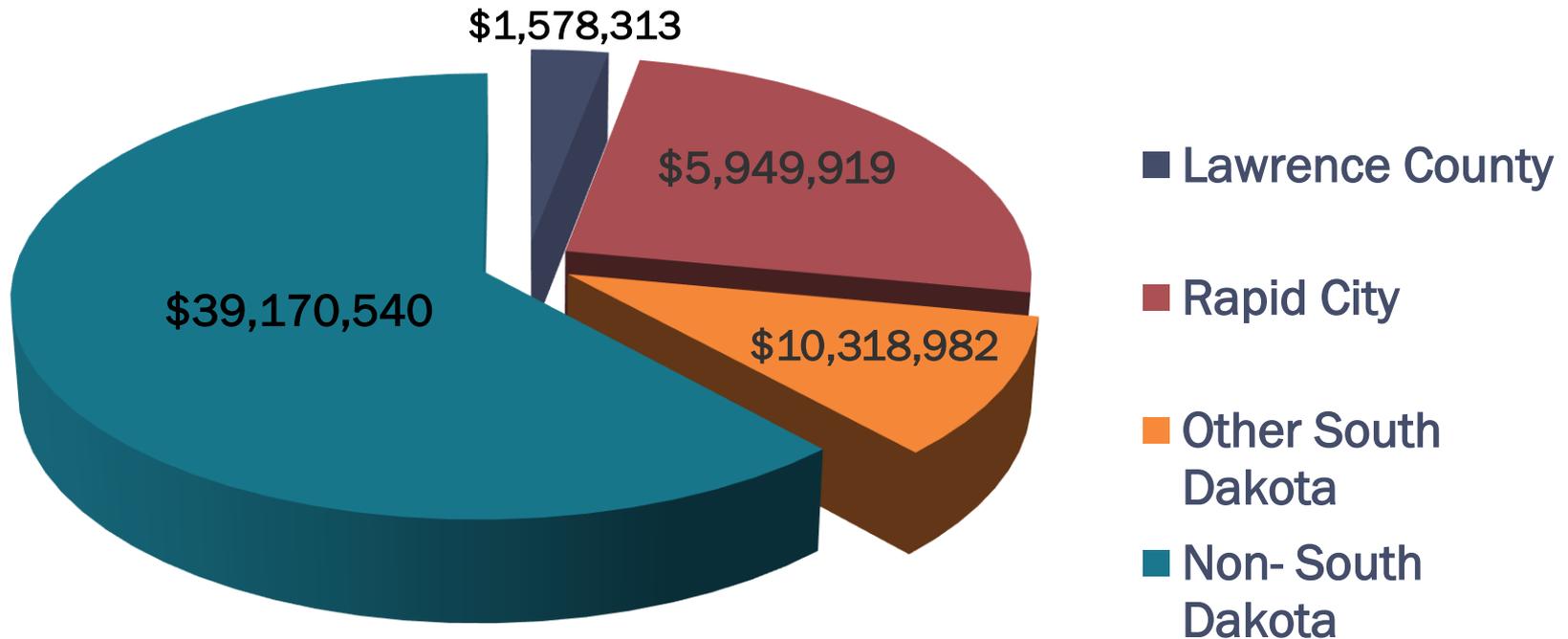
Population by County



\$3,525,637 Paid in Total Taxes in 2019



2019 Purchases over \$57 million



> Community Involvement

Wharf donated over \$150,000 to community groups, schools and other local charities in 2019



SIGNIFICANT PARTNERSHIPS

We believe in doing the right thing, the right way, which is why we focus on protecting our people, our places, and our planet. We make sure to operate in environmentally responsible ways, utilize local talent, and empower the communities that surround our operations. Below are a just a few examples of Coeur Wharf's significant partnerships:



> External Involvement & Outreach



SD Rural Ag Leadership

SD Board of Environment

SD School of Mines





Questions?