



MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Treiber Lakes	MINE/PROSPECTING ID#: M-2011-049	MINERAL: Aggregate	COUNTY: Larimer
INSPECTION TYPE: Monitoring	INSPECTOR(S): Amy Eschberger	INSP. DATE: May 26, 2021	INSP. TIME: 14:00
OPERATOR: City of Greeley	OPERATOR REPRESENTATIVE: Scott Dickmeyer	TYPE OF OPERATION: 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: None	BOND AMOUNT: \$0.00
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: June 4, 2021

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Sediment Control

PROBLEM #1: Erosion gullies and ruts were observed on-site. Specifically, the three above-ground pipelines temporarily discharging water from the creek into the North Reservoir have created large erosion gullies along the northern shoreline of this reservoir. Erosion rilling was also observed along unvegetated portions of the shorelines. This is a problem at this time for failure to protect the affected land from erosion pursuant to C.R.S. 34-32.5-116(4)(j).

CORRECTIVE ACTIONS: By the corrective action due date, the operator shall provide photo documentation to the Division verifying the erosion along reservoir shorelines has been repaired, and that the site has been reconstructed and stabilized to prevent continued erosion damage.

CORRECTIVE ACTION DUE DATE: August 3, 2021

INSPECTION TOPIC: Reclamation Success

PROBLEM #2: Failure to follow approved reclamation plan, or current reclamation plan needs to be updated and clarified pursuant to C.R.S. 34-32.5-116(1). The operator must follow the approved reclamation plan or provide sufficient information to describe or identify how the operator intends to conduct reclamation. Specifically, the operator has installed water management structures for the reservoirs (e.g., outlet, interconnect pipelines) which are not part of the approved reclamation plan.

CORRECTIVE ACTIONS: By the correction action due date, the operator shall submit a Technical Revision,

with the required \$216 revision fee, to update and clarify the current approved reclamation plan and map to reflect existing and proposed activities. The revised reclamation plan and map must address any structures proposed to remain for final reclamation. Additionally, the revised reclamation plan map must show the final installed location of the slurry wall.

CORRECTIVE ACTION DUE DATE: August 3, 2021

INSPECTION TOPIC: Revegetation

PROBLEM #3: There are state-listed noxious weeds present on site (e.g., leafy spurge, downy brome, common mullein). This is a problem for failure to employ weed control methods for all prohibited noxious weed species within the permitted area, and to reduce the spread of weeds to nearby areas as required by Rule 3.1.10(6).

CORRECTIVE ACTIONS: By the correction action due date, the operator shall implement the approved weed control plan for the site and provide proof to the Division this was done. Such proof should include a short description of the control measures utilized, photographic documentation, and a site map showing areas where weed control was conducted. If a weed control plan is not already in place, the operator must develop a weed control and management plan in accordance with Rule 3.1.10(6). This plan should be developed in consultation with the county extension agency or weed control district office, and should include specific control measures to be applied, a schedule for when control measures will be applied, and a post-treatment monitoring plan. If a new plan is developed for the site, it must be submitted to the Division as a Technical Revision, with the required \$216 revision fee, by the corrective action due date.

CORRECTIVE ACTION DUE DATE: August 3, 2021

OBSERVATIONS

This was a normal monitoring inspection of Treiber Lakes (Permit No. M-2011-049) conducted by Amy Eschberger of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Scott Dickmeyer during the inspection. The site is located approximately one mile north of Fort Collins, CO in Larimer County. The site is situated just south of and adjacent to the Cache La Poudre River. Access to the site is from the east off N Taft Hill Rd, and through the adjacent Home Office Mine (Permit No. M-1977-439), operated by Martin Marietta Materials, Inc. The affected lands are owned by the City of Greeley, Fort Collins – Loveland Water District, North Weld County Water District, and East Larimer County Water District. The three water districts are known collectively as the “Tri-Districts”. While the City of Greeley holds the mine permit for the site, the reservoirs on site are managed by the Tri-Districts. **Photos 1-32** taken during the inspection are included with this report.

This is a 112c operation permitted for 94 acres (see enclosed Google Earth image of site) to mine aggregate from two existing pits which were originally mined under the Home Office Mine permit. The primary reason the City of Greeley permitted over the area was to install a slurry wall liner around the two groundwater ponds created by previous mining to create water storage. The two ponds on site are referred to as the North Reservoir (located in the western half of the permit area) and the South Reservoir (located in the eastern half of the permit area). At the time the City permitted the site, the two groundwater ponds were estimated to be approximately 15-25 feet deep with water surface areas covering a total of 62.7 acres (37.3 acres for the North Reservoir + 25.4 acres for the South Reservoir). The pond shorelines had already been graded to slopes of approximately 3H:1V down to the bottom of the ponds. Although it was believed that all marketable materials had been removed from the site, reclamation activities conducted by the City may involve additional excavation and backfilling of the ponds. Any aggregate material mined by the City will be temporarily stockpiled adjacent to the ponds then hauled off site for construction use.

The approved post-mining land use for the site is developed water resources. The approved reclamation plan (see enclosed reclamation plan map) includes leaving two reservoirs with slopes graded to 3H:1V or flatter from a minimum of 5 feet above to 10 feet below the expected water line. The distance between the edge of the reservoirs and the permit boundary varies from approximately 50 feet to 200 feet. A slurry wall will be constructed in this space to separate the reservoirs from the surrounding alluvial aquifer. The slurry wall will be keyed into the shale bedrock at an average depth of approximately 20 feet. The upper few feet of the slurry wall trench will be backfilled with clean soils to stabilize and protect the top of the slurry wall. In addition to the slurry wall to be constructed around the two reservoirs, an additional slurry wall may be constructed between the reservoirs. While this slurry wall is not necessary in order to separate the reservoirs from the surrounding alluvial aquifer, it would increase the storage capacity and future operational efficiency of the reservoirs.

During final grading of the reservoirs, trees and shrubs near the slurry wall will be removed to protect the integrity of the barrier. All disturbed land, including reservoir slopes above the expected water line and areas around the edges of the reservoirs (including the backfilled slurry wall) will be retopsoiled at a depth of approximately 4-6 inches and seeded with the following grass seed mixture: Western Wheatgrass, Switchgrass, Big Bluestem, Inland Saltgrass, Indian Ricegrass, and Sand Dropseed. A dirt access road will remain around the perimeter of the reservoirs for continued site maintenance.

According to the most recent Substitute Water Supply Plan (SWSP) on file with our office, which covers the period of January 1, 2018 through December 31, 2019, the operator completed construction of the slurry wall around Lake A (North Reservoir) on August 7, 2013, and this liner was approved on January 27, 2014 and re-approved (after intentional breaching) on August 19, 2015 as meeting the design standard. All lagged evaporative depletions associated with the North Reservoir have been replaced under previous SWSPs.

Additionally, the operator completed construction of the slurry wall around Lake B (South Reservoir) in May of 2016, and this liner was approved on September 16, 2016 as meeting the design standard. Therefore, based on this SWSP, both lakes on site have been classified as lined reservoirs in accordance with SEO guidelines. The SWSP did however cover lagged depletions associated with the past use of groundwater for slurry wall construction around Lake B (South Reservoir). It is not clear whether a renewal of the 2018/2019 SWSP was required to cover any remaining lagged depletions for the site, particularly for the South Reservoir. If so, then the operator will need to provide the Division with a copy of the current SWSP in place (or the last SWSP required) for the site.

At the time of the inspection, the weather was partly cloudy and dry. However, some wet areas remained on the ground from recent storm events. The reservoirs were full of water and the visible portions of the shorelines were mostly graded to 3H:1V or flatter. The reservoir shorelines are shallower at the eastern edge of the site, where the eastern shoreline of the South Reservoir rises only 1-2 feet above the water level, and taller at the northern/northwestern edge of the site, where the northern shoreline of the North Reservoir rises approximately 10-12 feet above the water line. The majority of the reservoir shorelines (especially along the South Reservoir) and the disturbed areas around the reservoirs have an established grass cover. However, portions of the North Reservoir shorelines, particularly its southern and eastern shorelines, have very little to no vegetative cover, besides volunteer cottonwood (and some willow) trees. Some erosion rilling was observed along these shorelines.

Along the northern shoreline of the North Reservoir, three portable pumps were in operation, pumping water from the river (located north of the site) and discharging this water into the South Reservoir via three above-ground pipelines. The ends of these pipelines terminated above the shoreline so that the water discharging from the pipelines was creating large erosion gullies (approximately 6 feet in depth) along the graded shoreline. Mr. Dickmeyer indicated once the operation completes filling the reservoir (in another 2-3 weeks), the pipelines will be removed and the erosion along the shoreline repaired. He believes the slurry wall was installed 10's of feet north of the crest of the shoreline, and therefore is not being impacted by the erosion damage. However, without having any record of the final constructed slurry wall alignment, the Division could not confirm whether the barrier is impacted by the erosion damage. **A Problem is cited in this report (see page 1; Problem #1) for failure to protect the affected land from erosion pursuant to C.R.S. 34-32.5-116(4)(j). The operator will need to repair the erosion damage present along reservoir shorelines and provide photographic evidence to the Division demonstrating this has been done.** This corrective action shall apply to all erosion damage present along the North Reservoir shorelines, including the large erosion gullies created along its northern shoreline from the discharge and the erosion rilling present along other portions of its shorelines. These repaired areas will most likely require additional seeding in order to achieve the required grass cover for reclamation.

The Division observed an area at the northeastern corner of the South Reservoir where the operator has recently constructed an outlet structure. According to Mr. Dickmeyer, this structure was constructed in December 2020/January 2021, and the disturbed area was seeded and mulched in April of this year. Some grass seedlings were observed in the seeded area. While the revegetation of this re-disturbed area is off to a great start, the outlet structure constructed in this area is not part of the approved reclamation plan for the site. Additionally, Mr. Dickmeyer informed the Division that two interconnect pipelines were previously installed between the two reservoirs. These structures are also not part of the approved reclamation plan. **Therefore, a Problem is cited in this report (see page 1; Problem #2) for failure to follow the approved reclamation plan pursuant to C.R.S. 34-32.5-116(1). Specifically, the operator has installed water management structures for the reservoirs which are not part of the approved reclamation plan. The operator will need to submit a Technical Revision to update the approved reclamation plan and map to reflect existing and proposed activities. The revised reclamation plan and map must address any structures proposed to remain for final reclamation. Additionally, the revised reclamation plan map must show the final installed location**

of the slurry wall.

The Division observed numerous volunteer cottonwood trees (and some willow trees) growing along the reservoir shorelines, especially along the eastern and southern shorelines of the North Reservoir. Depending on the installed location of the slurry wall liner, the growth of these trees could potentially compromise the integrity of the liner. Until an updated reclamation plan map has been provided showing the location of the installed slurry wall, it is difficult to determine whether the barrier could be impacted by the trees growing along the reservoir shorelines. Regardless, the operator has an interest in removing these trees from the reservoir shorelines due to their future impacts to water storage. The Division strongly recommends the operator remove any trees and other woody vegetation from the reservoir shorelines, and to do so in a manner that protects the integrity of the shorelines as well as the slurry wall liner.

As mentioned above, there is good grass cover present across much of the affected lands. However, abundant weeds were also observed throughout the site, including state-listed noxious weed species such as leafy spurge, downy brome, and common mullein. Rule 3.1.10(6) requires methods of weed control to be employed for all prohibited noxious weed species, and whenever invasion of a reclaimed area by other weed species seriously threatens the continued development of the desired vegetation. **Therefore, a problem is cited in this report (see page 1; Problem #3) for the state-listed noxious weed species present at the site. The operator will need to either implement the approved weed control plan for the site and provide proof to the Division this was done, or develop a new weed control plan for the site in consultation with the county extension agency or weed control district office and submit this plan as a Technical Revision.** Mr. Dickmeyer indicated the City would most likely be on site in June to manage the weeds, as part of their annual weed control program. Given the proximity of the weeds to the reservoirs, mechanical methods are preferred.

It has come to the Division's attention that the inspection contact, and possibly the permittee contact for this permit may need to be revised. The current inspection contact is listed as Randy Gustafson with the City of Greeley and the current permittee contact is listed as Adam Jokerst with the City of Greeley. If either of these contacts are incorrect, they can be updated through the Division's ePermitting system at https://dnrlaserfiche.state.co.us/Forms/DRMSeForms_LandingPage.

It should be noted, only the designated ePermitting Administrator will be able to log in to the ePermitting system. The current ePermitting Administrator set up for this permit is Adam Jokerst. If the operator wishes to change the ePermitting Administrator, this can be done at: https://docs.google.com/forms/d/e/1FAIpQLSeeD-K1j4ZJjwOCn_UUW0XDxBNceZdU3HMFz333Y-JjWn2i5w/viewform.

The Division does not hold a Financial Warranty for this permit since the operator is a unit of municipal government, in accordance with Rule 4.1.2(2).

This concludes the report.

Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at amy.eschberger@state.co.us.

PHOTOGRAPHS



Photo 1. View looking south across eastern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 2. View looking northwest across northern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 3. View looking southeast across northern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species. Large material stockpiles visible in background are part of adjacent Home Office Mine permit.



Photo 4. View looking south across South Reservoir from its northern shoreline.



Photo 5. View looking west at western shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 6. View looking southwest across western shoreline of South reservoir, showing abundant leafy spurge (plant with yellow flowers) present in this area. Operator will need to implement weed control plan in this area for all state-listed noxious weed species.



Photo 7. View looking southeast at dirt road along northern edge of South Reservoir which will remain for reclamation.



Photo 8. View looking southwest across land separating the two reservoirs. According to the operator, two interconnect pipelines are installed in this area. The reclamation plan and map need to be updated to address any permanent water management structures installed on the affected lands.



Photo 9. View looking northeast across western shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 10. View looking southeast across southern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 11. View looking southeast at dirt road along southern edge of South Reservoir which will remain for reclamation. Note fencing at right which delineates southern permit boundary.



Photo 12. View looking west across southeastern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 13. View looking north across eastern shoreline of South Reservoir, graded 3H:1V or flatter and stable with good vegetative cover. Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 14. View looking north across eastern shoreline of South Reservoir, showing area (at right) re-disturbed by operation to install outlet structure (circled). Operator will need to implement weed control plan in this area for state-listed noxious weed species.



Photo 15. View looking south across eastern shoreline of South Reservoir, showing area re-disturbed by operation to install outlet structure. This area was seeded and mulched this spring.



Photo 16. View looking west at outlet structure recently installed at northeastern edge of South Reservoir. The reclamation plan and map need to be updated to address any permanent water management structures installed on the affected lands.



Photo 17. View looking northeast at outlet structure recently installed at northeastern edge of South Reservoir. The reclamation plan and map need to be updated to address any permanent water management structures installed on the affected lands.



Photo 18. Ground view of area re-disturbed at southeastern edge of South Reservoir to install outlet structure, which was seeded and mulched this spring. Note grass seedlings present in this area.



Photo 19. View looking north across eastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with very sparse vegetative cover consisting primarily of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 20. View looking southwest across southeastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with very sparse vegetative cover consisting primarily of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 21. Closer view of southeastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with very sparse vegetative cover consisting primarily of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed.



Photo 22. View looking northwest across eastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with very sparse vegetative cover consisting primarily of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 23. View looking west across northern shoreline of North Reservoir, showing three above-ground pipelines discharging water pumped from river into the reservoir. Note large erosion gullies created along shoreline from this discharge. Operator will need to repair erosion damage and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 24. Closer view of pipeline discharging water into North Reservoir along its northern shoreline, showing large erosion gully (approximately 6 feet deep) created along shoreline. Operator will need to repair this erosion damage and reseed shoreline as needed.



Photo 25. View looking northeast across southeastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with dense cluster of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 26. View looking southwest across southeastern shoreline of North Reservoir, graded mostly 3H:1V or flatter with dense cluster of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 27. View looking northeast at control structure installed at southeastern edge of North Reservoir. The reclamation plan and map need to be updated to address any permanent water management structures installed on the affected lands. Operator will need to implement weed control plan in this area for state-listed noxious weed species



Photo 28. View looking northwest at dirt road along southern edge of North Reservoir which will remain for reclamation. Note fencing at left which delineates southern permit boundary.



Photo 29. View looking southeast at southern shoreline of North Reservoir, graded mostly 3H:1V or flatter with dense cluster of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 30. View looking northwest across southwestern shoreline of North Reservoir, graded mostly 3H:1V or flatter with dense cluster of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 31. View looking northwest across southwestern shoreline of North Reservoir, graded mostly 3H:1V or flatter with dense cluster of volunteer cottonwood trees. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.



Photo 32. View looking northeast across North Reservoir from its southwestern shoreline. Operator will need to remove trees, repair any erosion rilling, and reseed shoreline as needed. Weed control must also be implemented in this area for state-listed noxious weed species.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>NA</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>NA</u>	(SF) PROCESSING FACILITIES----- <u>NA</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION---- <u>PB</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>PB</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>NA</u>	(SC) EROSION/SEDIMENTATION--- <u>PB</u>	(ST) STIPULATIONS----- <u>NA</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address

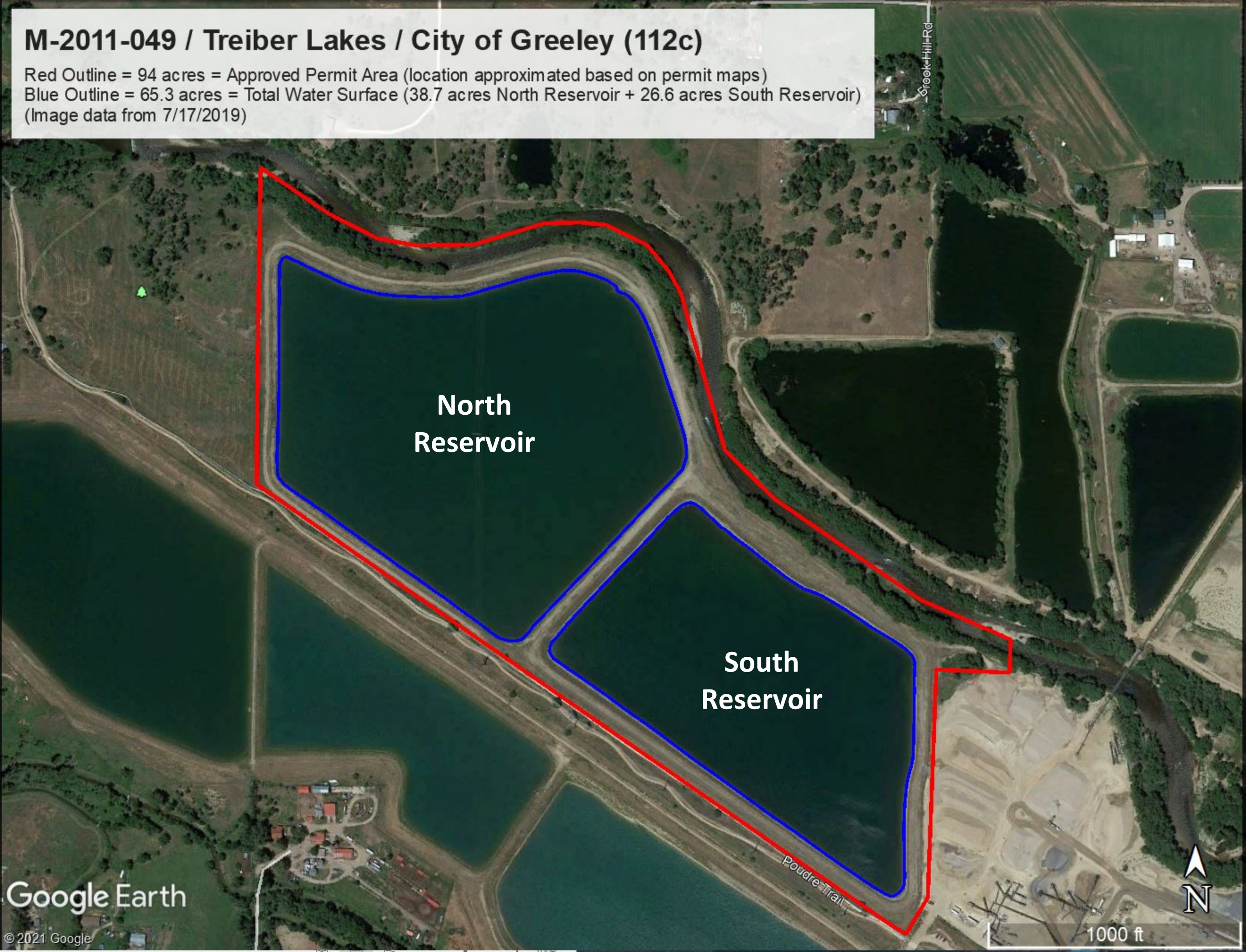
Randy Gustafson
City of Greeley
1100 10th Street, Suite 300
Greeley, CO 80631

Encls: Google Earth image of site
Approved Reclamation Plan Map

EC: Scott Dickmeyer, Tri-Districts
Richard Reines, Tri-Districts
Adam Jokerst, City of Greeley
Bill Schenderlein, Blue Earth Solutions, LLC
Michael Cunningham, DRMS

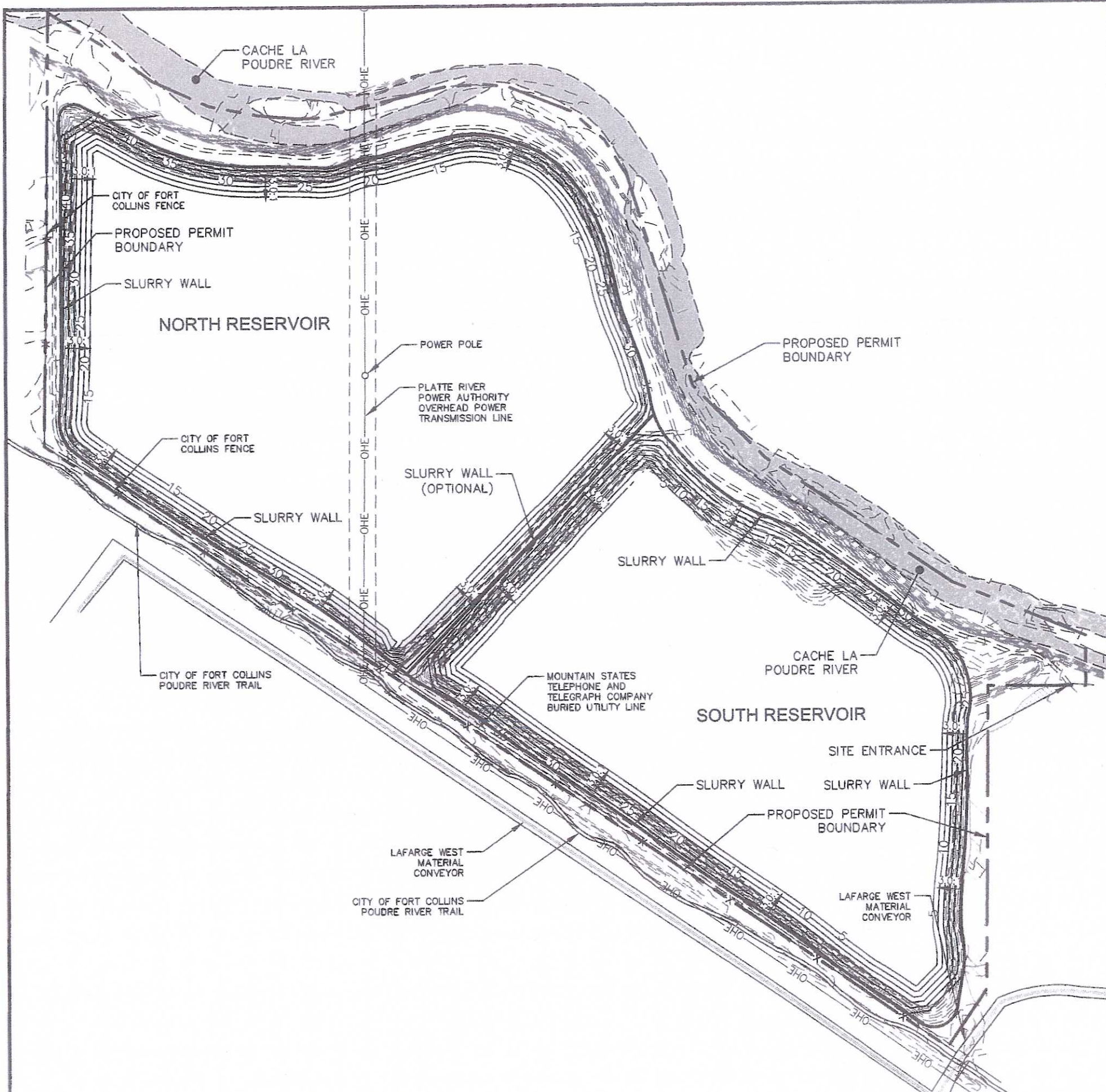
M-2011-049 / Treiber Lakes / City of Greeley (112c)

Red Outline = 94 acres = Approved Permit Area (location approximated based on permit maps)
Blue Outline = 65.3 acres = Total Water Surface (38.7 acres North Reservoir + 26.6 acres South Reservoir)
(Image data from 7/17/2019)

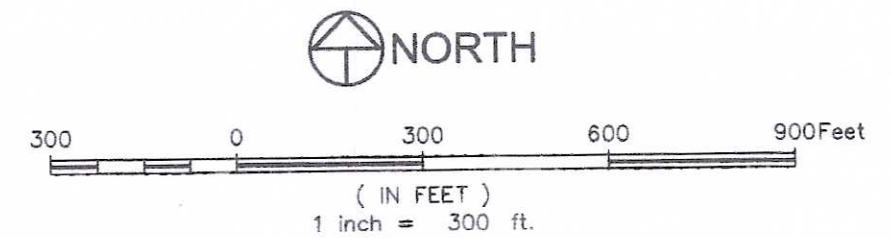


North
Reservoir

South
Reservoir



SCALE:

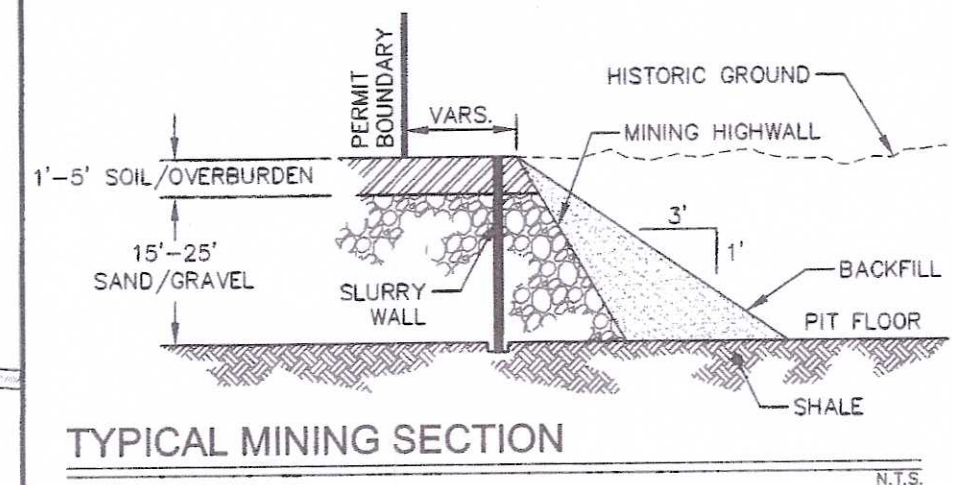


LEGEND:

- Proposed Permit Boundary
- Proposed Slurry Wall
- ▨ Mining disturbance and stockpiles

NOTES:

1. Treiber Lakes Reservoir constructed to meet State Engineer's Office operational performance standard.
2. In preparation for slurry wall construction, a combination road and working pad will be graded along the slurry wall alignment. The grading will produce a relatively flat, stable surface approximately 50 to 100 feet in width.
3. Slurry wall construction includes 3 to 5 foot wide trench keyed a minimum of 2 feet into shale bedrock.
4. Slurry wall constructed with bentonite slurry, a blend of soil excavated from the trench, dry bentonite, and borrow soils.
5. Final slopes will have 3H:1V grade or flatter.
6. Best Management Practices will be used to control erosion and suspended sediment runoff from the site during reclamation activities.



TYPICAL MINING SECTION