

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**BOARD ORDER NO. R6V-2020-0031  
WDID NO. 6B149411001**

**REVISED WASTE DISCHARGE REQUIREMENTS**

**FOR**

**DV NATURAL RESOURCES AND THE U.S. DEPARTMENT OF THE INTERIOR,  
BUREAU OF LAND MANAGEMENT  
BRIGGS PROJECT**

Inyo County

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The California Regional Water Quality Control Board, Lahontan Region (Water Board) finds:

1. Discharger

The Briggs Project is a gold and silver mining operation consisting of an active open-pit mine, cyanide heap leaching, and a gold recovery plant, including ancillary facilities. Active mining and crushing of ore at the Briggs Project ceased in September 2015; shortly thereafter the parent company, ATNA Resources, entered bankruptcy. CR Briggs Corporation was a wholly-owned subsidiary of ATNA Resources. The CR Briggs asset, including the Briggs Project, was fully acquired by DV Natural Resources, LLC (DVNR) in late 2016.

DVNR has taken over responsibilities of day-to-day operations of the Briggs Project including compliance with Federal and State regulations. All operations are on public lands under the administration of the U.S. Department of the Interior, Bureau of Land Management (BLM). For the purposes of these Revised Waste Discharge Requirements (WDRs), DVNR and the BLM are collectively referred to as the "Discharger." As Administrator of public lands, the BLM enforces a requirement that Facility operations comply with all pertinent Federal and State regulations.

2. Location

The Briggs Project is located about eight (8) miles south of the Town of Ballarat, in the Panamint Valley, in parts of Section 11, 12, 13, and 14, Township 12 South, Range 44 East, Mount Diablo Baseline and Meridian, as shown on Attachment A.

3. Facility

The Briggs Project consists of an open-pit mine, waste rock disposal areas, heap leaching facility, gold recovery plant, surface impoundments (Process Pond, Make-up Pond, and Detoxification Pond), ancillary facilities (e.g., shops, warehouse, offices), clay borrow area, and growth media stockpiles. For the

purposes of this Order, the Briggs Project will be referred to as the "Facility." A site plan is shown in Attachment B.

The Discharger continues to circulate a diluted cyanide leach solution through the heap for gold recovery, though gold recovery is decreasing. The Discharger proposes microbial (bioleaching) processes to improve gold recovery. A secondary effect of the bioleaching is cyanide detoxification of the ore heap.

As of 2016, the ore heap leach pad reached near capacity (approximately 92 percent of total capacity), and most of the heavy equipment and crusher machinery was sold in 2015 as part of the ATNA Resources bankruptcy. Though there are no plans to construct an additional leach pad at this time, the Discharger does not intend to commence closure activities until all gold reserves in the heap have been recovered.

#### 4. Evidence of Release

The Discharger is implementing a detection monitoring program (DMP) that monitors the groundwater and unsaturated zone beneath the Facility; the purpose of the DMP is to provide the best assurance of the earliest possible detection of a release. Groundwater monitoring at the Facility indicates the presence of weak acid dissociable (WAD) cyanide in samples from groundwater monitoring well MW-6 at concentrations greater than the Water Quality Protection Standard (WQPS) concentration limit of 0.03 milligrams per liter (mg/L); this detection constitutes significant physical evidence of release. On December 8, 2015, Water Board staff requested that CR Briggs submit a technical report proposing an evaluation monitoring program (EMP) meeting the provisions of California Code of Regulations, title 27, section 20420, subdivision (k)(5). On May 31, 2016, Water Board staff received an Engineering Feasibility Study Report, which stated that the findings of the investigation were inconclusive regarding the source of the WAD cyanide release to groundwater and no corrective action was taken.

Groundwater monitoring well MW-6 is located downgradient of the surface impoundments and processing plant. WAD cyanide continues to be detected in samples from groundwater well MW-6 at concentrations above the WQPS limit. On May 6, 2019, samples collected from well MW-6 indicated a WAD cyanide concentration of 0.22 mg/L in groundwater beneath the site. Additionally, nitrate concentrations in well MW-6 have been increasing over time. Samples collected from groundwater well MW-6 on May 6, 2019 indicated a nitrate concentration of 15 mg/L in groundwater beneath the site that exceeds the drinking water maximum contaminant level of 10 mg/L for nitrate (as nitrogen).

Water Board staff has determined that beginning in October 2017, the Process Pond has been operated in a manner inconsistent with the original design, and there has been a notable increase in the volume of leachate being pumped from the leachate collection recovery system (LCRS) sump back into the pond. Additionally, the concrete floor of the gold recovery plant is showing signs of significant

deterioration and efforts to repair cracks provide a very limited and temporary solution.

5. Reason for Action

This Order is being issued to revise the WDRs to include a microbial (bioleaching) solution as an additional authorized process solution to extract gold from the ore on the heap leach pad. This Order specifies a time schedule for the Discharger to initiate an EMP to evaluate the source and extent of the releases to groundwater, and includes additional general updates to the WDRs and Monitoring and Reporting Program (MRP) to reflect existing Facility conditions.

6. Order History

- a. On July 14, 1995, the Water Board adopted a National Pollution Discharge Elimination System (NPDES) permit, Board Order No. 6-95-84.
- b. On June 13, 2001, the Water Board adopted Board Order No. 6-01-33, establishing new WDRs for the Facility and rescinding Board Order No. 6-95-84.

7. Land Uses

The Facility is surrounded by undeveloped public land owned by the BLM. The town of Ballarat, a historic mining town, is located approximately 8 miles to the north.

8. Site Topography

The Facility is located at the toe of the west-facing slopes of the Panamint Range and on the gentler alluvial slope at the foot of the mountains. The mountain slopes in the vicinity are very steep, with grades often exceeding 100 percent. These slopes are deeply incised by several canyons that drain the upland areas toward the valley floor. The Facility is located at the mouth of Redlands Canyon, a steep, narrow, V-shaped canyon. A well-developed alluvial fan occurs at the mouth of Redlands Canyon. The heap Facility is specifically located on this alluvial fan surface. The flat playa surface begins west of the Facility. The elevation of the Facility ranges from about 1,060 to 2,600 feet above mean sea level.

9. Climate

The area typically has hot summers and mild winters. The mean annual temperature is 77 degrees Fahrenheit (°F) and ranges from 107° F in the summer to 17° F in the winter. The mean annual precipitation at the site is 3.76 inches.

10. Site Geology

Two dominant types of bedrock comprise the lower slopes of the Panamint Range in the vicinity of the Facility. A detachment fault zone separates the two types of bedrock and forms an undulatory discontinuity that subparallels the west flank slope surface and lies at relatively shallow depths. The upper plate rocks, lying above the fault, are granitic and of Mesozoic age. Beneath the detachment fault is an unknown thickness of Precambrian metasedimentary and metavolcanic basement rocks, which are locally composed of gneiss and amphibolite-gneiss. A thin veneer of loose rock debris occurs over much of the west-facing slope surfaces of the range front. Alluvial fan deposits extend out from the mouth of Redlands Canyon and consist of gravel to boulder size fragments supported in a silty to sandy matrix. These materials are semi-consolidated but poorly cemented except locally, where calcium carbonate has accumulated, forming a caliche.

11. Site Hydrology

Redlands Canyon spring and associated wetlands, located approximately 3,200 feet upslope/upgradient from the Facility, are the only known perennial surface waters in the vicinity of the Facility. Surface flow of water has been observed to about 500 feet downstream of the spring (about 2,700 feet upgradient from the Facility). Based on hydrological and geological studies of the area submitted by the Discharger, Water Board staff has determined that the spring is not hydrologically connected to the Facility and, therefore, is not likely to be affected by the excavation at the mouth of the drainage. The Discharger has monitored the spring for over 10 years. This monitoring data indicates that the spring is not adversely impacted by Facility operations.

The Redlands Canyon drainage, an ephemeral stream, drains an approximately 6-square mile watershed. The Facility is located at the mouth of this drainage. Flows from the drainage are routed through the Facility via the Redlands Canyon Drainage Diversion. Based on the National Oceanic and Atmospheric Administration's Precipitation Frequency Atlas of the Western United States, the 100-year, 24-hour design storm for the Redlands Canyon watershed was estimated to be 5.3 inches. Based on the amount of precipitation, the design peak flow for Redlands Canyon Drainage through the Facility was calculated to be approximately 9,700 cubic feet per second.

The Panamint Valley playa lies downgradient from the Facility. The playa is fed by flows from several drainages along the Panamint Range, including the Redlands Canyon drainage. Water can remain on portions of the playa for several months during the cooler parts of the year. Fringe wetlands rim the playa and act as a buffer between alluvial upland areas and the playa.

12. Site Hydrogeology

Groundwater gradient at the Facility is about 0.002 feet per foot in a northwesterly direction. Depth to groundwater ranges from 70 to 293 feet in wells located around the Facility. Shallower groundwater is encountered closer to the playa and deepens to the east.

13. Groundwater Quality

Groundwater quality in the vicinity of the Facility is poor due to naturally occurring conditions and from regional sources. Elevated concentrations of chloride, sodium, sulfate, and total dissolved solids (TDS) are detected in groundwater beneath the Facility. Over the last 10 years, TDS concentrations in the groundwater have ranged from 6,550 to 10,000 mg/L. Similarly, chloride concentrations in the groundwater have ranged from 3,100 to 5,160 mg/L, and sulfate concentrations in the groundwater have ranged from 600 to 680 mg/L. The secondary MCL for TDS is 500 mg/L, and for chloride and sulfate is 250 mg/L.

14. Open Pit Mine

Mining was conducted in the North Briggs Pit and the Goldtooth Pit. The North Briggs Pit is 50 acres, with slopes up to 1,100 feet in height. The final bottom elevation is estimated to be 1,400 feet above sea level. The Goldtooth Pit is 28 acres, with slopes up to 850 feet in height. The final bottom is estimated to be 1,250 feet above mean sea level.

15. Waste Management Unit and Authorized Disposal Sites

The heap leach pad and the three surface impoundments (Process Pond, Make-up Pond, Detoxification Pond) are waste management units (WMUs) for the treatment, storage, and disposal of mining waste (Mining Unit), as defined in California Code of Regulations (CCR), title 27, section 22470.

The heap leach pad and the three surface impoundments (Process Pond, Make-up Pond, Detoxification Pond) are the only authorized disposal sites for the collection of process solution (wastewater) within the Facility boundary.

16. Waste Classification

The mining waste is classified pursuant to CCR, title 27, section 22480. The crushed ore on the heap leach pad and the process solution are both classified as Group B mining wastes; the waste rock is classified as a Group C mining waste.

Group B mining waste is defined in CCR, title 27, section 22480, subsection (2)(B) as mining wastes that consist of or contain nonhazardous soluble pollutants of concentrations which exceed water quality objectives for, or could cause, degradation of waters of the state. Group C mining waste is defined in CCR, title

27, section 22480, subsection (2)(3) as wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.

17. Description of Waste Management Units

a. Leach Pad

The heap leach pad consists of approximately 126 acres of active leach area that was constructed in 12 phases (cells); the last phase was constructed in May 2011. The western toe of the pad maintains a maximum slope of two (2) percent, while most of the pad has slopes of eight (8) percent or higher. As of 2019, the leach pad has reached 92 percent of its constructed capacity.

The heap leach pad was constructed with the following engineered liner system, from bottom to top: prepared subgrade, reworked and compacted in place; a 4-inch clay layer with a permeability of  $1 \times 10^{-6}$  centimeters per second (cm/sec); a geotextile with geosynthetic wick drains (acts as the LCRS); an 8-inch clay layer with a permeability of  $1 \times 10^{-6}$  cm/sec; and a 40-mil polyvinyl chloride (PVC) liner. The engineered alternative liner system for the heap leach pad was previously approved in Board Order No. 6-01-33.

The LCRS wick drains are placed perpendicular to the slope of each cell, spaced at 50-foot intervals, and drain to a sump filled with granular material at the toe of each cell. Each sump is equipped with a lysimeter for observation, sampling, and purging.

b. Surface Impoundments

The surface impoundments are a connected system of three evaporative ponds that consist of a Process Pond, a Make-up Pond, and a Detoxification Pond.

The Process Pond is designed primarily as two smaller ponds, the pregnant pond (collects pregnant solution draining from the heap leach pad) and the barren pond (collects barren solution from the gold recovery phase), both separated by a berm and sharing common freeboard. The Process Pond is also designed as the emergency storm water runoff pond that, when full, overflows into the Make-Up Pond, and then into the Detoxification Pond. The pond system is capable of containing runoff generated from the 100-year, 24-hour storm falling on the leach pad and the ponds and the simultaneous occurrence of 24 hours of process solution drain down from the leach pad, at a process flow rate of 3,000 to 9,000 gallons per minute.

All surface impoundments were constructed with the following engineered alternative liner system, from bottom to top: a prepared subgrade of fine-grained soils, reworked and compacted in place; a 40-mil thick high-density polyethylene (HDPE) liner; a geonet LCRS layer; and a 60-mil thick HDPE liner. The engineered alternative liner system for the surface impoundments was previously approved in Board Order No. 6-01-33.

The surface impoundments LCRS system is comprised of a geonet placed on the side slopes and the bottom of each pond between the primary and secondary HDPE liners. This geonet connects to a sump filled with granular material located in the lowest corner of each pond bottom. Each sump can be observed, sampled, and/or evacuated directly through observation ports.

c. Waste Rock Storage

The waste rock material generated from past mining operations is stacked in large piles at two locations at the Facility and can also be used as backfill into the existing pits.

d. Solid Waste

Municipal solid waste is comprised of office waste that is collected and disposed of at an offsite municipal solid waste landfill. Industrial waste such as fuel filters, oily rags, and laboratory wastes, such as cupels and slag, is collected and disposed of at offsite waste disposal facilities permitted to accept these types of wastes.

18. Description of Process Steps

a. Mining

Waste rock and ore was blasted with ammonium nitrate and fuel oil then dug out and loaded into off-highway haul trucks. The waste rock was deposited in a designated waste rock pile or backfilled into existing pit disturbance. Waste rock piles consist of native rock that has been determined to not be economic but must be moved to expose the ore. Ore was then hauled to the crusher stockpile. Ore was crushed to approximately ¼ diameter and stacked on the lined heap leach pad in 30-foot lifts, to a total height of approximately 190 feet.

b. Process Solution

This Order authorizes two process solutions to leach gold from the ore: (1) a weak cyanide solution with pH control chemicals (e.g., sodium hydroxide or lime); and (2) a solution of microorganisms (bioleaching), primarily native bacteria sourced onsite, with added nutrients (e.g., nitrate and phosphorus).

The Discharger will follow a Nutrient Management Plan to ensure that excess nutrients are not introduced to the bioleaching process solution. Dry nutrients will be delivered in 50 pounds or less and custom formulated for the nutritional needs of the individual growth stages of the microorganisms; nutrient monitoring will be done at each of the three growth stages.

c. Process Solution Application

Process solution is applied to the heap leach pad using buried-drip and sprinkler-type emitters. The process solution is allowed to percolate through the ore where it dissolves the metals into solution (pregnant solution). The pregnant solution continues to percolate to the pad liner and is directed by gravity to a solution collection system that drains to the Process Pond.

The solution collection system for the heap leach pad is bedded in a minimum 2-foot thick layer of drainage material (crushed ore) placed over the uppermost 40-mil HDPE liner. The system consists of a network of perforated pipes, placed perpendicular to the direction of the pad slope, and connected to a series of collection pipes placed parallel to the direction of the pad slope. The collection pipes connect to non-perforated pipes placed in the solution collection channel at the toe of the heap leach pad. The solution collection channel drains pregnant solution directly to the Process Pond.

d. Gold Recovery

Gold and silver are recovered from the process solution (pregnant solution) and prepared for shipping in a four-step process that includes carbon adsorption, carbon desorption, electrowinning, and refining. The gold recovery is conducted within the Processing Plant.

e. Process Solution Recycling

After the removal of precious metals, the process solution is inoculated with either cyanide or microorganisms and nutrients (barren solution) before being applied to the leach pad. The barren solution is then returned to the heap leach pad via non-perforated pipes.

19. Description of Borrow Area

To construct the clay liner for the heap leach pad, the Discharger borrowed clay from the Panamint Valley playa bed. An estimated total of 300,000 cubic yards of material was removed from the playa bed from an excavation no greater than 4-feet deep over a 40- to 50-acre site. Excavation was done when the playa was dry, and excavation work did not intercept groundwater. Access to the playa bed involved crossing a narrow band (approximately 50-feet wide) of wetlands, resulting in approximately 0.05 acres of wetland disturbance. Board Order No. 6-33-01

authorized the wetland disturbance and specified the requirement reclamation activities.

Following construction of the final phase of leach pad liner in 2011, the Discharger removed the gravel and geotextile fabric mats from the access road, lightly scarified the area to promote plant growth and increase permeability, and transplanted small shoots of predominant wetland plant species to the reclaimed area. The reclamation was done in compliance with the previously adopted Board Order No. 6-01-33. Restoration and mitigation for the borrow area is complete.

20. Ore and Waste Rock Geochemistry

a. Acid/Base Accounting

Acid generating and neutralizing potential was evaluated utilizing static testing procedures. Waste rock and raw ore samples showed a fairly high neutralizing potential vs. acid generating potential (NP:AP), with a range of 7 to 334 in the samples tested. Ore residue samples had NP:AP ranging from 1.3 to 5.0, much lower than that for the waste rock. The Discharger conducted humidity cell tests on five select ore residue samples. These humidity cell tests attempt to determine actual rock response to field conditions by subjecting samples to alternating wet and dry cycles for several months and analyzing the leachate which is formed in the test cell. The result of the tests on the five select ore residue samples showed low potential for acid formation.

b. Leachable Metals

Tests of the leachable metals in 53 samples of waste rock, ore, and the alluvial fan material were conducted, using a modified waste extraction test procedure with deionized water as the leaching solution. Results from these tests indicated that the soluble metals in all samples were extremely low, and well below hazardous concentrations.

21. Action Leakage Rates

The Discharger has requested that the Water Board allow an action leakage rate (ALR) of liquid through the upper liner of the surface impoundments into the leachate collection sumps. The respective ALRs are based on proposed design dimensions and design specifications of the surface impoundments and on a 1992, United States Environmental Protection Agency (U.S. EPA) guidance document, *Action Leakage Rates for Leak Detection Systems, Supplemental Background Document for the Final Double Liners and Leak Detection Systems Rule for Hazardous Waste Landfills, Waste Piles, and Surface Impoundments*. The ALRs are specified in the MRP and include the requirements for monitoring and reporting leakage rates into the LCRS. The requirements also describe the response actions for the Discharger if the ALRs are exceeded.

22. Water Quality Protection Standard

The Water Quality Protection Standard (WQPS) consists of monitoring parameters, constituents of concern (COCs), concentration limits, monitoring points, and the point of compliance. The WQPS applies over the active life of the Facility, closure period, and the compliance period. The COCs, monitoring points, and point of compliance for groundwater and unsaturated zone monitoring are described in MRP No. R6V-2020-0031.

23. Compliance Period

The compliance period is the number of years equal to the active life of the WMU plus any post-closure monitoring and maintenance period until the Water Board finds that the Facility no longer poses a threat to water quality. The compliance period is the minimum period during which the Discharger must conduct a water quality monitoring program subsequent to a release. The compliance period must begin anew each time the Discharger initiates an EMP. The compliance period shall be extended until the Discharger can demonstrate that the WMU has been in continuous compliance with its WQPS for a period of three years as specified in CCR, title 27, section 20410(c).

24. Detection Monitoring Program

Pursuant to CCR, title 27, 22500, the Discharger is implementing a DMP for the Facility as specified in CCR, title 27, sections 20385 and 20420. The DMP for the Facility consists of monitoring groundwater and the unsaturated zone for the presence of COCs. The DMP is specified in MRP No. R6V-2020-0031.

25. Evaluation Monitoring Program

Pursuant to CCR, title 27, 22500, an EMP may be required, as specified in CCR, title 27, sections 20385 and 20420(k)(6), whenever there is "measurably significant" evidence of a release from the Facility during a DMP or whenever there is significant physical evidence of a release from the Facility. The EMP requires the Discharger to delineate the nature and extent of the release and develop a suite of proposed corrective action measures within 90 days of establishing an EMP, unless the Discharger proposes and substantiates a longer time period for implementing the EMP. If the EMP confirms measurably significant evidence of a release or significant physical evidence of a release, then the Discharger needs to submit an Engineering Feasibility Study for corrective action pursuant to CCR, title 27, section 20425, subdivision (b), and MRP No. R6V-2020-0031.

The DMP has detected significant evidence of a release as described in Finding No. 4. This Order specifies a time schedule for the Discharger to initiate an EMP to evaluate the source and extent of the release.

26. Corrective Action Program

Pursuant to CCR, title 27, 22500, a corrective action program (CAP) to remediate released wastes from the Facility may be required as specified in CCR, title 27, sections 20385 and 20430, if results of an EMP confirm measurably significant evidence of a release or significant physical evidence of a release from the Facility.

27. Preliminary Closure and Post Closure Maintenance Plan

The Discharger submitted a revised preliminary closure and post-closure maintenance plan on December 6, 2019. The plan includes lump sum estimates to carry out the proposed closure and post-closure monitoring and maintenance activities at the Facility. The Discharger proposes to clean close the surface impoundments as outlined in regulations contained in CCR, title 27, section 20080, subsection (a). Once all fluids have been evaporated from the ponds, all residual solids will be disposed of properly based on their classifications. The liner of the process ponds will be punctured, folded into the center of the pond, and buried. The perimeter berms will be pushed into the pond to bring the pond back up to surrounding grades. Transfer pipelines will be removed and salvaged or disposed of offsite. The ore material on the heap leach pad will be detoxified when total cyanide and WAD cyanide detected in the heap materials meet regulatory limits. Generally, those regulatory limits are 1.0 mg/L total cyanide and 0.2 mg/L WAD cyanide; however, actual detoxification limits will be established in a final closure plan and approved by the Water Board in Closure WDRs.

28. Known or Reasonably Foreseeable Release

The Discharger is required to provide financial assurance for corrective action of a known or reasonably foreseeable release as specified in CCR, title 27, section 20080(a)(1). A known or reasonably foreseeable release plan was previously submitted for this Facility. The Discharger is required to update this plan if/when there is a substantial change in operations or in site conditions. At minimum, the plan must (1) describe those actions necessary to initiate and complete corrective action for a known or reasonably foreseeable release from the Facility, and (2) include a detailed cost estimate of the costs to carry out the actions necessary to perform the corrective action activities identified.

29. Financial Assurance

The Discharger needs to obtain and maintain financial instruments for closure, post-closure maintenance and monitoring, and for corrective action of a known or reasonably foreseeable release as required under CCR, title 27, sections 22207, 22212, and 20080(a)(1).

The Discharger needs to report the amount of money available in the funds as part of the annual self-monitoring report and demonstrate in an annual report that the

amount of financial assurance is adequate and to increase the amount of financial assurance, as appropriate, for inflation.

30. Storm Water

Storm water protection at the Facility is primarily accomplished through drainage controls based on the following objectives: protection from run-on; minimize exposure of pollutants to precipitation; manage run-off to minimize erosion and sedimentation; and minimize offsite migration of storm water. To achieve these objectives, the Discharger implements structural and non-structural Best Management Practices (BMPs) to mitigate potential pollution of storm water discharges and performs site compliance inspections to evaluate the effectiveness of the BMPs. The Discharger will continue to implement BMPs and perform inspections throughout the compliance period of the Facility.

This Order requires prohibitions, limitations, and provisions for storm water and non-storm water discharges at the Facility to protect both groundwater and surface water quality.

31. Basin Plan

The Water Board adopted a *Water Quality Control Plan for the Lahontan Region* (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan, as amended.

32. Receiving Waters

The receiving waters are the surface waters within the Panamint Valley Hydrologic Area (620.60) of the Ballarat Hydrologic Unit (620.00) and groundwaters within the Panamint Valley Groundwater Basin (Department of Water Resources, Groundwater Basin Number 6-58, Basin Plan, Plate 2B).

33. Beneficial Uses

The present and potential beneficial uses of groundwaters of the Panamint Valley Groundwater Basin, as set forth and defined in the Basin Plan, are:

- a. Municipal and domestic supply (MUN); and
- b. Industrial service (IND).

The present and probable beneficial uses of minor surface waters and minor wetlands of the Panamint Valley Hydrologic Area No. 620.60, as set forth and defined in the Basin Plan are:

- a. Municipal and Domestic Supply (MUN);
- b. Agricultural Supply (AGR);
- c. Industrial Service Supply (IND);

- d. Groundwater Recharge (GWR);
- e. Freshwater Replenishment (FRSH)
- f. Water Contact Recreation (REC-1);
- g. Non-contact Water Recreation (REC-2);
- h. Commercial and Sportfishing (COMM);
- i. Warm Freshwater Habitat (WARM);
- j. Cold Water Habitat (COLD);
- k. Wildlife Habitat (WILD);
- l. Water Quality Enhancement (WQE); and
- m. Flood Peak Attenuation/Flood Water Storage (FLD).

34. Statistical and Non-Statistical Methods

Statistical and non-statistical analyses of monitoring data are necessary for the earliest possible detection of a release of waste from the Facility. CCR, title 27, section 20415, subdivision (e)(7), requires statistical data analyses to determine when there is "measurably significant" evidence of a release from the Facility. CCR, title 27, section 20415, subdivision (e)(8) allows non-statistical data analysis methods that can achieve the goal of the monitoring program at least as well as the most appropriate statistical method. The monitoring parameters listed in MRP No. R6V-2020-0031 are believed to be the best indicators of a release from the Facility.

35. Discharge of Monitoring Well Purge Water

As part of the regularly scheduled groundwater sampling events, groundwater monitoring wells are purged until parameters of electrical conductivity, pH, and temperature are sufficiently stabilized to assure the collection of a representative sample. Purged groundwater is currently discharged to the ground on-site and allowed to evaporate. To protect surface waters and groundwater, the discharge to the ground of purge water is prohibited from containing concentrations of COCs and monitoring parameters, which exceed the WQPS, as described in MRP No. R6V-2020-0031.

36. Waste Management Strategy

The Water Board has determined that the proposed mining waste discharge is consistent with a waste management strategy that prevents the pollution or contamination of the waters of the state, particularly after closure of any waste management unit for mining waste.

37. California Water Code, Section 13241 Considerations

Pursuant to CWC, section 13241, the requirements of this Order take into consideration:

- a. Past, present, and probable future beneficial uses of water. This Order identifies existing groundwater quality and past, present, and probable future

beneficial uses of water, as described in Finding Nos. 13 and 33, respectively. The proposed discharge will not adversely affect present or probable future beneficial uses of water including municipal and domestic supply, agricultural supply, industrial service supply, and freshwater replenishment, because the discharge is authorized only to lined WMUs and this Order requires monitoring to detect any impacts to water quality.

- b. Environmental characteristics of the hydrographic unit under consideration including the quality of water available thereto. Finding No. 13 describes the environmental characteristics and quality of water available.
- c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area. There are no other industries or activities in the area of the project that would be factors that affect water quality in the area. The Water Board will use its existing authority and this Order to ensure protection of water quality from discharges. Compliance with the requirements of this Order is not expected to affect surface and groundwater quality.
- d. Economic considerations. Water Quality Objectives (WQOs) established in the Basin Plan for the Panamint Valley Groundwater Basin do not subject the Discharger to economic disadvantage as compared to other similar discharges in the Region. This Order will require the Discharger to submit proposals compliant with the requirements of CCR, title 27.
- e. The need for developing housing within the region. The Discharger is not responsible for developing housing within the region. This Order provides for the capacity to collect, store, and evaporate wastewater in lined waste management units.

38. Human Right to Safe, Clean, Affordable, and Accessible Water

CWC, section 106.3, establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes and directs state agencies to consider this policy when adopting regulations pertinent to those uses of water. Requirements in this Order for drainage controls, monitoring to assess water quality, and corrective action to address impacts to water quality will further promote this policy.

39. California Environmental Quality Act (CEQA) Compliance

This Order govern an existing Facility. The operation, permitting, and minor alteration of the existing structures of the Facility, involving negligible or no expansion of use, is exempt from the provisions of CEQA (Public Resource Code, Section 21000 et seq.) in accordance with CCR, title 14, Section 15301.

40. Antidegradation Analysis

State Water Resources Control Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintenance of High Quality Waters in California") requires that whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality must be maintained. Any change in the existing high quality is allowed by that policy only if it has been demonstrated to the Regional Water Board that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies. The policy further requires that Dischargers meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the state will be maintained. The existing quality of water is not a high quality water.

41. Technical and Monitoring Reports

CWC, section 13267(b) provides that: "In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharge or discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."

Technical reports are necessary to assure compliance with this Order and to assess any water quality impacts due to discharges from the Facility. Therefore, the burden, including costs, of these reports bears a reasonable relationship to the need for the report and the benefits to be obtained from the reports.

42. Right to Petition

Any person aggrieved by this action of the Water Board may petition the State Water Board to review the action in accordance with California Water Code, section 13320, and CCR, title 23, sections 2050 et. seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality), or will be provided in hard copy or electronic format upon request.

43. Notification of Interested Parties

The Water Board notified the Discharger and interested agencies and persons of its intent to adopt revised WDRs for the authorized discharge of wastes to the surface impoundments and has provided them with an opportunity to submit their written views and recommendations.

44. Consideration of Interested Parties

The Water Board, in a public meeting held on May 6, 2020, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED**, pursuant to California Water Code sections 13263 and 13267, that the Discharger shall comply with the following:

I. RECEIVING WATER LIMITATIONS

The discharge must not cause the existing water quality to be degraded nor shall the discharge cause a violation of any applicable water quality standard.

A. Under no circumstances shall the discharge cause the presence of the following substances or conditions in groundwaters of the Panamint Valley Groundwater Basin.

1. Bacteria – Groundwaters designated as MUN, the median concentration of coliform organisms, over any seven-day period, must be less than 1.1 Most Probable Number per 100 milliliters (MPN/100 mL).
2. Chemical Constituents – Groundwaters designated as MUN must not contain concentrations of chemical constituents in excess of the Primary MCL or Secondary MCL based upon drinking water standards specified in the following provisions of CCR, title 22: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64449-A of section 64449 (Secondary MCLs – Consumer Acceptance Contaminant Levels), and Table 64449-B of section 64449 (Secondary MCLs – Consumer Acceptance Contaminant Level Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

Groundwaters must not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.

3. Radioactivity – Radionuclides must not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Groundwater designated MUN must not contain concentrations of radionuclides in excess of limits specified in CCR, title 22, section 64442, Table 64442, and section 64443, Table 64443, including future changes as the changes take effect.
  4. Taste and Odors – Groundwaters must not contain taste or odor-producing substances in concentrations that cause a nuisance or that adversely affect beneficial uses. For groundwaters designated as MUN, at a minimum, concentrations must not exceed adopted Secondary MCLs as specified in CCR, title 22, section 64449, Table 64449-A (Secondary MCLs – Consumer Acceptance Contaminant Level) and Table 64449-B (Secondary MCLs – Consumer Acceptance Contaminant Levels Ranges) including future changes as the changes take effect.
- B. Under no circumstances shall the Discharger cause the presence of the following substances or conditions in surface waters of the Panamint Valley Hydrologic Area of the Ballarat Hydrologic Unit.
1. Ammonia – The neutral, unionized ammonia species ( $\text{NH}_3$ ) is highly toxic to freshwater fish. The fraction of toxic  $\text{NH}_3$  to total ammonia species ( $\text{NH}_4^+ + \text{NH}_3$ ) is a function of temperature and pH. Tables 3-1 to 3-4 from the Basin Plan were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in these tables. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas available on page 3-4 of the Basin Plan.
  2. Bacteria – Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 mL, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 mL. The USEPA recommends that the log mean should ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. However, a log mean concentration exceeding 20/100 mL for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.

3. Biostimulatory Substances – Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.
4. Chemical Constituents – Waters designated as MUN shall not contain concentrations of chemical constituents in excess of the MCL or secondary MCL based upon drinking water standards specified in CCR, title 22, chapter 15, article 1, section 64400 et. seq. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes). Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
5. Chlorine, Total Residual – For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L. Median values shall be based on daily measurements taken within any six month period.
6. Color – Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
7. Dissolved Oxygen – The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. The minimum dissolved oxygen concentration shall not be less than 4.0 mg/L as a daily minimum, 5.0 mg/L as a 7-day mean, and 6.5 mg/L as a 30-day mean.
8. Floating Materials – Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
9. Oil and Grease – Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.
10. Nondegradation of Aquatic Communities and Populations – All waters shall be free from substances attributable to wastewater or other

discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All waters shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.

11. pH – Changes in normal ambient pH levels shall not exceed 0.5 pH units. The pH shall not be depressed below 6.5 nor raised above 8.5. Compliance with the pH objective for these waters will be determined on a case-by-case basis.
12. Radioactivity – Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations.
13. Sediment – The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.
14. Settleable Materials – Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.
15. Suspended Materials – Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
16. Taste and Odor – Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.
17. Temperature – The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature shall not be altered by more than five

degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered.

18. Toxicity – All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Water Board [or the Executive Officer or his/her designee]. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for “experimental water” as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1998).
19. Turbidity – Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

## II. REQUIREMENTS AND PROHIBITIONS

### A. General

1. The discharge must not cause or threaten to cause a condition of pollution or nuisance as defined in CWC, section 13050.
2. The discharge of waste, as defined in CWC, section 13050, subdivision (d), must not cause an exceedance of any narrative or numeric WQO contained in the Basin Plan.
3. There must be no discharge, bypass, or diversion of wastes from the collection, conveyance, or WMUs to adjacent land areas or surface waters.
4. Where any numeric or narrative WQO contained in the Basin Plan is already being exceeded, any discharge which causes further degradation or pollution is prohibited.
5. Surface drainage within the heap leach pad and surface impoundments must be contained within the surface impoundments. No wastewater contained within the heap leach pad or surface impoundments is to be discharged outside the surface impoundments.

6. All facilities used for the collection, conveyance, or disposal of waste must be adequately protected against overflow, washout, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
7. The discharge of hazardous waste to the surface impoundments or generation of hazardous waste due to evaporation in the surface impoundments is prohibited.
8. The discharge of solid wastes, leachate, wastewater, or any other deleterious materials to groundwater is prohibited.
9. The discharge of waste, except to the authorized disposal areas, is prohibited.
10. The discharge must not cause any increases in the concentration of waste constituents in soil-pore liquid, soil, or other geologic materials outside of the surface impoundments if such waste constituents could migrate to waters of the State – in either liquid or gaseous phase – or cause a condition of nuisance, degradation, contamination, or pollution.
11. The discharge of waste in a manner that does not maintain a five-foot separation between the waste and the seasonal high groundwater table is prohibited as specified in CCR, title 27, section 20240, subdivision (c).
12. The integrity of the leach pad, surface impoundments, and floor of the gold recovery plant must be maintained throughout the life of the Facility and must not be diminished as a result of maintenance operation or lack thereof.
13. The discharge of pesticides to surface waters or groundwater is prohibited.
14. Water used for dust control must be limited to a minimal amount. A "minimal amount" is defined as that amount which will not result in run-off.
15. The Discharger must maintain in good working order any control system or monitoring device installed to achieve compliance with this Order.
16. The Discharger must at all times maintain adequate and viable financial assurances acceptable to the Water Board Executive Officer for costs associated with closure, post-closure maintenance and

monitoring, and for corrective action for all known or reasonably foreseeable releases.

B. Surface Impoundments

1. The surface impoundment liner systems must be constructed and maintained as described in Finding No. 17.
2. The surface impoundment freeboard, the vertical distance between the liquid surface elevation and the lowest part of the pond dike or the invert of an overflow structure, must be a minimum of two feet at all times, as specified in CCR, title 27, section 20375.
3. All lined surface impoundments must be effectively sealed to prevent the exfiltration of liquids. For this Facility, "effectively sealed" facilities are waste management units that are designed and constructed to meet the requirements of CCR, title 27, sections 20310, 20320, and 20330.
4. Within 90 days following maintenance or reconstruction of the engineered alternative liner system, a technical report must be submitted containing at least a construction quality assurance/quality control report, if liner construction occurs, the technical report must also include as-built drawings. The report must contain all field and laboratory data generated during the maintenance and construction activities. The report must also contain certification, signed by a California professional civil engineer, that the surface impoundment was constructed and suitable for operation in accordance with CCR, title 27 requirements.

C. Leachate Collection and Recovery Systems

1. If a quantity of leachate is detected in a LCRS above the ALR, as specified in MRP No. R6V-2020-0031, the Discharger must immediately take steps to locate and repair leak(s) in the liner system and comply with the Exceeding the Leakage Rates requirements presented in MRP No. R6V-2020-0031, Section IV.B.2, "Unscheduled Reports to be Filed With the Water Board." If subsequent repairs do not result in a reduction in the leakage rate to less than the ALR for any given surface impoundment, the Discharger must immediately cease the discharge of waste to that surface impoundment, including leachate, and notify the Water Board. The notification must include a timetable for remedial action to repair the liner of the surface impoundment(s).

2. The LCRS must be operated to function without clogging through the scheduled closure of the Unit and during the post-closure maintenance period.
3. Any leachate collected in the LCRS must either be returned to one of the surface impoundments or disposed at a Class II WMU.

D. Precipitation and Drainage Controls

All diversion and drainage facilities shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff as specified in CCR, title 27, section 22490, subsection (h).

E. Electronic Submittal of Information

Pursuant to CCR, title 23, section 3890, the Discharger must submit all reports, including soil and water data, prepared for the purpose of subsurface investigation or remediation of a discharge of waste to land subject to Division 2 of title 27, CCR, electronically over the internet to the State Water Board's GeoTracker system. This requirement is in addition to, and not superseded by, any other applicable reporting requirement.

III. WATER QUALITY MONITORING AND RESPONSE PROGRAMS

A. Water Quality Protection Standard

1. The WQPS consists of COCs, concentration limits, monitoring points, and the point of compliance. The COCs, concentration limits, monitoring points, and point of compliance for groundwater and unsaturated zone monitoring are described in MRP No. R6V-2020-0031.
2. The Discharger must submit a revised ROWD to the Water Board at least 120 days before initiating discharge of any new COCs to the surface impoundments or leach pad. Before a new discharge commences, the Discharger must estimate the concentration for such constituents within the wastewater stream and submit written statistical method(s) in order to detect a release of such constituents.
3. At any given time, the concentration limit for each monitoring parameter and COC must be equal to the background data set of that constituent unless a concentration limit greater than background has been established. The background data set for each monitoring point/constituent pair should be comprised of at least eight data points, collected quarterly.

4. If the Discharger or Water Board Executive Officer determines that concentration limits were or are exceeded, the Discharger may immediately institute verification procedures upon such determination as specified in Section III.F of this Order or, within 90 days of such determination, submit a technical report pursuant CWC, section 13267, subdivision (b), proposing an EMP meeting the provisions of title 27 of the CCR. In the event of a new release, the Discharger will only have 90 days once the Water Board authorizes the establishment of the EMP to complete the delineation, develop a suite of proposed corrective action measures, and submit a revised ROWD with a proposed CAP for adoption by the Water Board.
5. Monitoring of the groundwater and the unsaturated zone must be conducted to obtain background data and to provide the best assurance of the early detection of any new releases from the Facility.

B. Detection Monitoring Program

The Discharger must maintain a DMP as specified in CCR, title 27, section 20420.

C. Evaluation Monitoring Program

The Discharger must perform an EMP whenever there is measurably significant evidence and/or significant physical evidence of release as specified in CCR, title 27, section 20385, subdivision (a)(2) or (3). Within 90 days of initiating the EMP, the Discharger must delineate the nature and extent of the release, as well as develop, propose, and support corrective action measures to be implemented in a CAP.

D. Corrective Action Program

The Discharger must implement a corrective action program as specified in CCR, title 27, section 20385 and 20430(c), following completion of an EMP.

E. Data Analysis

Within 45 days after completion of sampling, the Discharger must determine at each monitoring point whether there is measurably significant evidence and/or significant physical evidence of a new release from the Facility. The analysis must consider all monitoring parameters and COCs. The Executive Officer may also make an independent finding that there is measurably significant evidence and/or significant physical evidence of a new release.

1. To determine whether there is "measurably significant" (as defined in CCR, title 27, section 20164) evidence of a new release from the Facility, the Discharger must use approved statistical data analysis

methods to evaluate point of compliance groundwater data, as specified in CCR, title 27, section 20415, subdivision (e)(7).

2. To determine whether there is significant physical evidence of a new release from the Facility, the Discharger must also use non-statistical methods. Significant physical evidence may include, but is not limited to, unexplained volumetric changes in the surface impoundments, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of spill/release, unexplained water table mounding beneath or adjacent to the surface impoundments, and/or any other change in the environment that could be reasonably be expected to be the result of a new release from the surface impoundments. Other non-statistical evidence of a release may include trends of increasing concentrations of one or more constituents over time.
3. If there is measurably significant evidence and/or significant physical evidence of a new release, the Discharger must immediately notify the Water Board by telephone as to the monitoring points and constituent(s) or parameters involved followed by written notification sent certified mail within seven days (see "Unscheduled Reports to be Filed With the Water Board," MRP No. R6V-2020-0031). The Discharger must initiate the verification procedures, as specified in this Order, Section III.F.

F. Verification Procedures

Whenever there is a determination by the Discharger or Executive Officer that there is measurably significant evidence or significant physical evidence of a new release, the Discharger must initiate verification procedures as specified below.

1. The Discharger must either conduct a composite retest using data from the initial sampling event with all data obtained from the resampling event or must conduct a discrete retest in which only data obtained from the resampling event must be analyzed to verify evidence of a release. Alternatively, the Discharger may perform a pass 1-of-3 retesting approach using quarterly samples, as an engineered alternative.
2. The verification procedure need only be performed for the constituent(s) that has shown a measurably significant evidence of a release and must be performed for those monitoring points at which a release is indicated.
3. Within seven days of receiving the results of the last laboratory analyses for the retest, the Discharger must report to the Water

Board, by certified mail, the results of the verification procedure, as well as all data collected for use in the retest.

4. If the Discharger or Executive Officer verifies that there is or was evidence of a release, the Discharger is required to submit a technical report to the Water Board within 90 days of such a determination, pursuant to CWC, section 13267, subdivision (b). The report must propose an EMP (see Section III.C above) or make a demonstration to the Water Board that there is a source other than the WMU that caused evidence of a release (see "Unscheduled Reports to be Filed With the Water Board," MRP No. R6V-2020-0031).
5. If the Discharger declines to conduct verification procedures, the Discharger must submit a technical report, as specified in this Order, Section III.G.

G. Technical Report Without Verification Procedures

If the Discharger chooses not to initiate verification procedures after there has been a determination made for evidence of a release, a technical report must be submitted pursuant to CWC, section 13267(b). The report must propose an EMP or attempt to demonstrate that the release did not originate from the surface impoundments.

H. Monitoring and Reporting

1. Pursuant to CWC, section 13267, subdivision (b), the Discharger must comply with the monitoring and reporting requirements as established in the attached MRP No. R6V-2020-0031 and as specified by the Executive Officer. The MRP may be modified by the Water Board Executive Officer.
2. The Discharger must comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of MRP No. R6V-2020-0031.

IV. PROVISIONS

A. Rescission of Waste Discharge Requirements

Board Order No. 6-01-33 and MRP No. 6-01-33 are hereby rescinded.

B. Standard Provisions

The Discharger must comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment D, which is attached to and made part of this Order.

C. Claim of Copyright or Other Protection

Any and all reports and other documents submitted to the Water Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Water Board and the State Water Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the Discharger or its contractor(s) claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Water Board's purposes and will result in the document being returned to the Discharger as if the task had not been completed.

D. Closure Plan

The preliminary closure and post-closure maintenance plan must be updated if there is a substantial change in operations or costs for closure. The Discharger must submit a report to the Water Board on or before **January 30, 2021**, and by **January 30** every year thereafter, indicating that the preliminary closure and post-closure maintenance plan is in conformance with existing Facility operations. This report may be included in the annual monitoring report as required in MRP No. R6V-2020-0031.

A final closure plan must be submitted to the Water Board for review and approval **at least 180 days prior** to beginning any partial or final closure activities, or prior to discontinuing the use of the Facility for waste treatment, storage, or disposal pursuant to CCR, title 27, section 21710(c)(5)(B). The final closure plan must be prepared by or under the supervision of either a California-licensed civil engineer or a certified engineering geologist and be in compliance with CCR, title 27, section 21400.

E. Known or Reasonably Foreseeable Release Plan

The known or reasonably foreseeable release plan must be updated if there is a substantial change in operations or in site conditions. The Discharger must submit a report to the Water Board on or before **January 30, 2021**, and by **January 30** every year thereafter, indicating that the known or reasonably foreseeable release plan is in conformance with existing Facility conditions. This report may be included in the annual monitoring report as required in MRP No. R6V-2020-0031.

F. Financial Assurance

The Discharger must submit to the Water Board a financial assurance report on or before **January 30, 2021**, and by **January 30** every year thereafter, providing evidence that adequate financial assurances has been provided for closure, post-closure maintenance, and for corrective action of all known or reasonably foreseeable releases. Evidence must include the total amount of money available in the fund developed by the Discharger. In addition, the Discharger must either provide evidence that the amount of financial assurance is still adequate or increase the amount of financial assurance by an appropriate amount. An increase may be necessary due to inflation, change(s) in regulatory requirements, change(s) in the accepted preliminary closure and post-closure maintenance plan, or other unforeseen events.

G. Modifications to the Facility

If the Discharger intends to expand the Facility or the capacity of the surface impoundments or heap leach pad, a report must be filed with the Water Board **no later than 120 days prior** to the anticipated change, containing a detailed plan for Facility expansion. This plan must include but is not limited to, a time schedule for studies, design, and other information needed to document the proposed expansion of the Facility. Pursuant to CWC, section 13260(k), a report is required on the physical and chemical characteristics of the waste that could affect its potential to cause pollution or contamination, and a report is required to evaluate the potential of the discharge of the mining waste to produce, over the long term, acid mine drainage, the discharge or leaching of heavy metals, or the release of hazardous substances.

V. TIME SCHEDULE

A. Evaluation Monitoring Program

Finding No. 4 describes significant physical evidence of release to groundwater at the Facility, pursuant to CCR, title 27, section 20385, subdivision (a)(3). The Discharger must submit to the Water Board a technical report proposing an EMP pursuant to CCR, title 27, section 20420, subdivision (k)(5) by **September 1, 2020**.

Once the Executive Officer authorizes the initiation of the EMP, the Discharger will have: (1) 90 days to delineate the nature and extent of the release (CCR, title 27, section 20425, subdivision (b)); and (2) 180 days to submit an updated Engineering Feasibility Study that evaluates different corrective action measures to remediate the release (CCR, title 27, section 20425, subdivision (c)). Alternatively, the Discharger may demonstrate that a source other than the WMU caused the release pursuant to CCR, title 27, section 20425, subdivision (f).

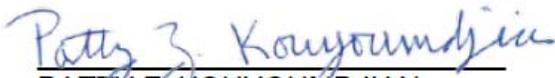
B. Financial Assurances

1. A separate Financial Assurance Instrument providing adequate funding for the closure activities, as described in the December 2019 preliminary closure and post-closure maintenance plan, must be submitted to the Water Board, pursuant to CCR, title 27, section 22207, by **October 30, 2020**.
2. A separate Financial Assurance Instrument providing adequate funding for the post-closure monitoring and maintenance activities, as described in the December 2019 preliminary closure and post-closure maintenance plan, must be submitted to the Water Board, pursuant to CCR, title 27, section 22212, by **October 30, 2020**.
3. A separate Financial Assurance Instrument providing adequate funding for corrective action of a known and reasonably foreseeable release must be submitted to the Water Board, pursuant to CCR, title 27, section 20080, subdivision (a)(1), by **October 30, 2020**.

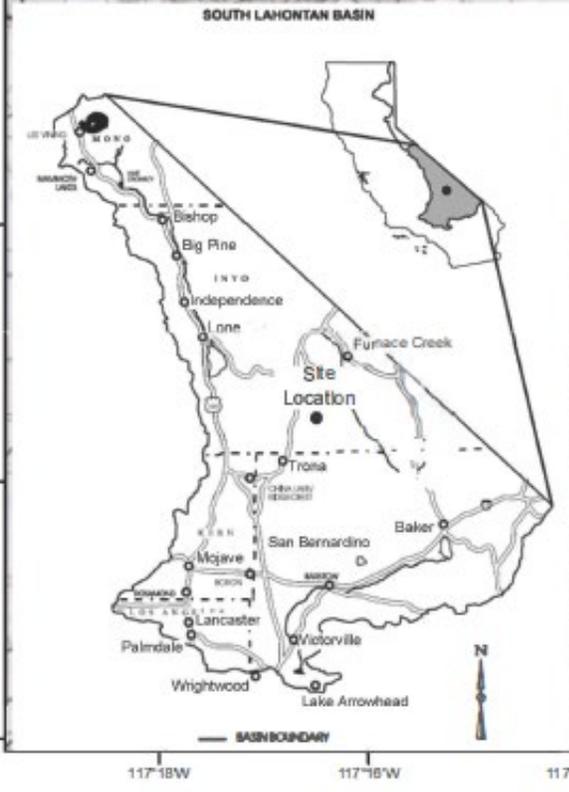
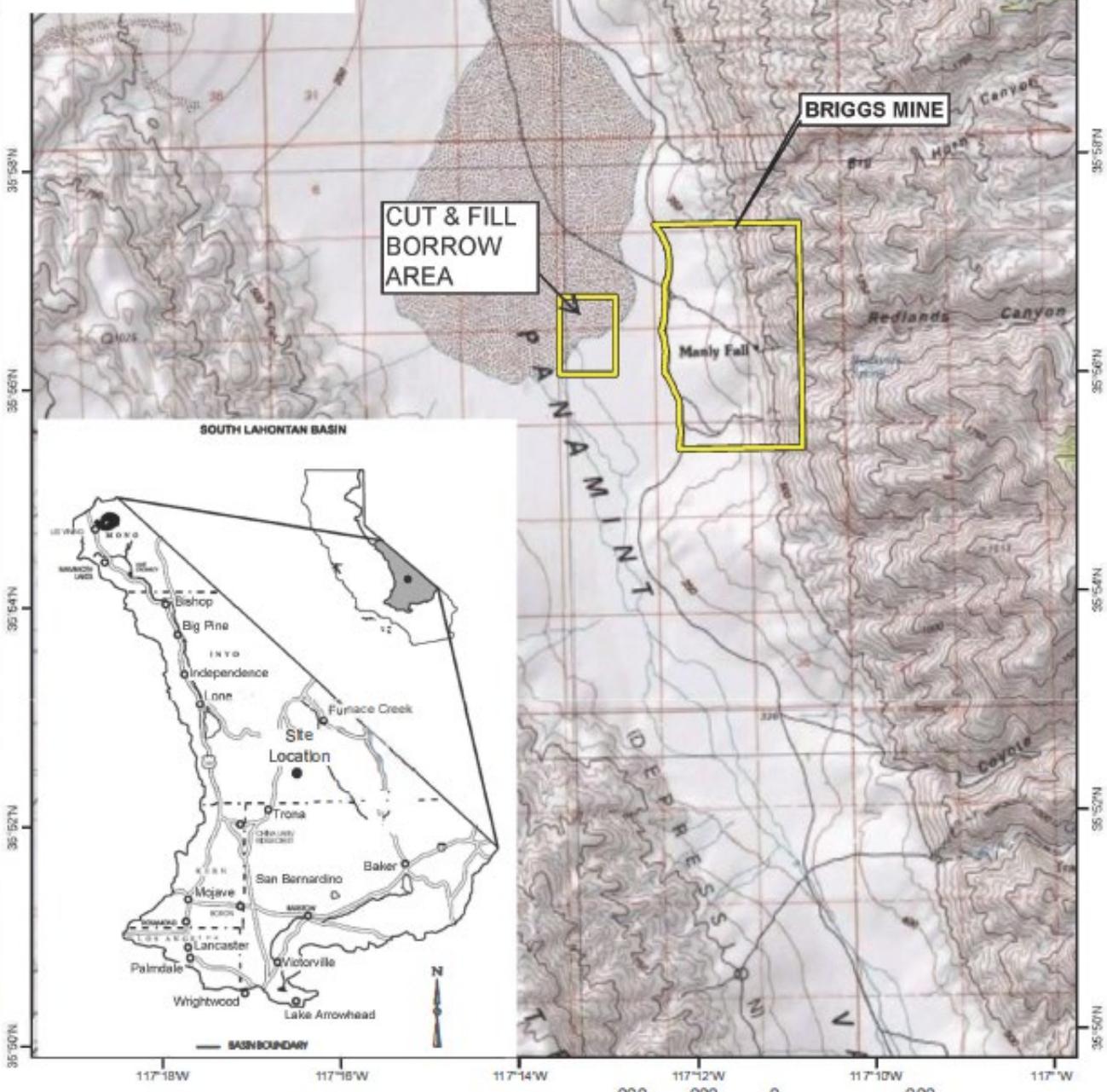
C. Concrete Resurfacing

The Discharger must submit to the Water Board a maintenance plan to resurface or effectively seal the concrete from any leaks or infiltration of process solution at the processing plant by **August 14, 2020**.

I, Patty Z. Kouyoumdjian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on May 6, 2020.

  
\_\_\_\_\_  
PATTY Z. KOUYOUMDJIAN  
EXECUTIVE OFFICER

- Attachments: A. Site Location Map  
B. Site Plan  
C. Monitoring Network and Process Ponds Layout  
D. Standard Provisions for WDRs



**LEGEND**

 Briggs Mine Permit Boundary

SCALE 1:100,000 1 INCH = 8,333 FEET  
WHEN PRODUCED A SIZE 8.5X11IN



**REFERENCES**

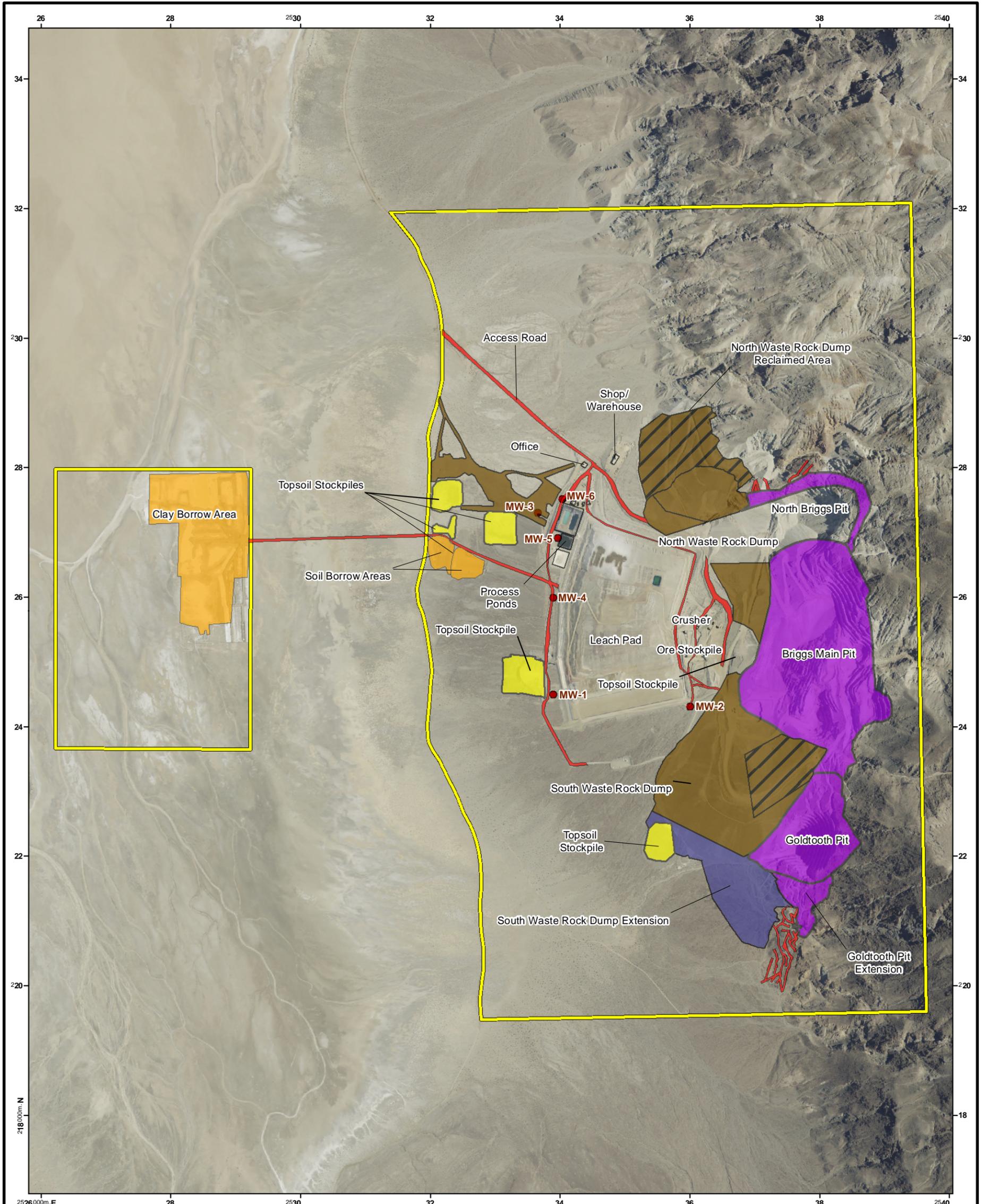
USGS. Various dates. Topo Quad (1:100,000 Scale) drawn from National Geographic TOPO! API.  
Projection: State Plane, California IV, NAD83, Feet.  
GOLDER Project No. 1547185 November 019

DV NATURAL RESOURCES, C  
BRIGGS PROJECT (BRIGGS MINE)  
INYO COUNTY, CALIFORNIA

**SITE LOCATION MAP**

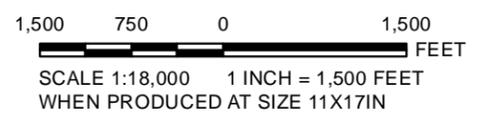
Attachment A

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**LEGEND**

- Groundwater Monitoring Location
- Permit Boundary
- ▨ Existing Reclaimed Area
- ▧ Reclaimed Area
- South Waste Rock Dump Extension
- Borrow Area
- Facility
- Mine Pits
- Road
- Topsoil Stockpile
- Waste Rock Dump



**NOTES**

USERS OF THIS ELECTRONIC VERSION ASSUME ALL RISK ASSOCIATED WITH ANY INFORMATION AND ASSUMPTIONS BASED ON THIS DRAWING. ANY RELIANCE ON THE INFORMATION PROVIDED WITHIN THE DRAWINGS BY A THIRD PARTY IS AT SUCH PARTY'S SOLE RISK. WE DO NOT WARRANT THE ACCURACY OF INFORMATION, NOR THE USE OF SEGREGATED PORTIONS OF THESE DRAWINGS. THIS FILE MAY NOT BE COPIED, RELEASED, DISTRIBUTED, OR POSTED TO A THIRD-PARTY WITHOUT THE EXPRESSED WRITTEN CONSENT OF GOLDER ASSOCIATES. THIS NOTE MAY NOT BE REMOVED FROM THIS DRAWING.

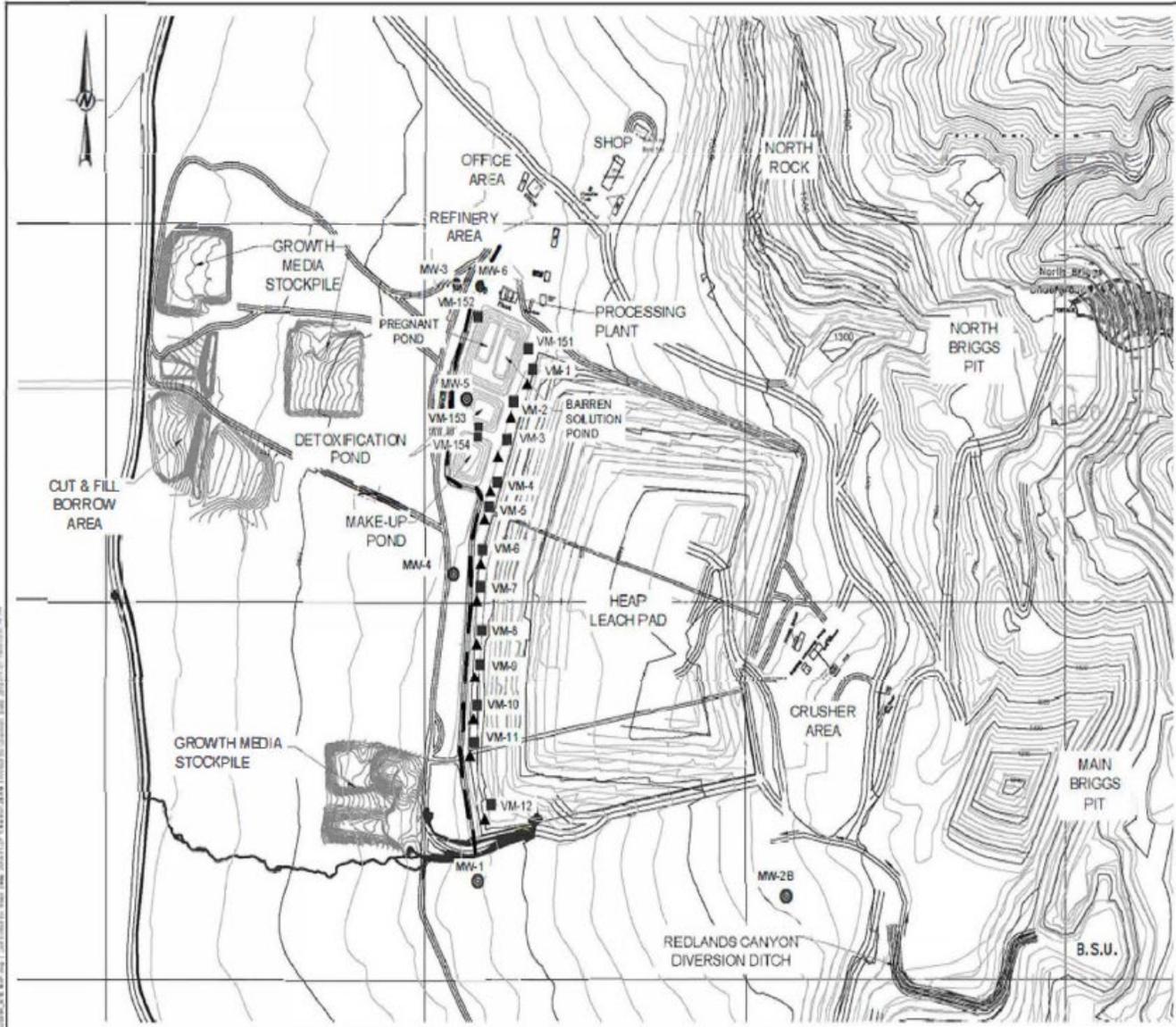
**REFERENCES**

Aerial Photography: USDA-FSA APFO, 2014.  
Projection: StatePlane, California Region IV, NAD27, Feet.  
Golder File No. 11x17\_1547185\_EFSReport\_Fig02\_SiteMap

DV NATURAL RESOURCES, LLC  
BRIGGS PROJECT (BRIGGS MINE)  
INYO COUNTY, CALIFORNIA

**SITE PLAN**

Attachment B



- LEGEND**
- MONITORING WELL (MW-1, MW-2B, MW-3, MW-4, MW-5, MW-6)
  - HEAP LEACH PAD LCRS MONITORING POINTS (VM-1, VM-2, VM-3, VM-4, VM-5, VM-6, VM-7, VM-8, VM-9, VM-10, VM-11, VM-12)
  - SURFACE IMPOUNDMENT LCRS MONITORING POINTS (VM-151, VM-152, VM-153, VM-154)
  - ▲ UNSATURATED ZONE MONITORING POINTS (VM-1, VM-2, VM-3, VM-4, VM-5, VM-6, VM-7, VM-8, VM-9, VM-10, VM-11, VM-12)
  - POINT OF COMPLIANCE



DV NATURAL RESOURCES  
BRIGGS PROJECT  
INYO COUNTY

**BRIGGS MINE PROJECT (BRIGGS MINE)  
INYO COUNTY, CALIFORNIA  
MONITORING NETWORK AND PROCESS  
PONDS LAYOUT**

WASTE DISCHARGE REQUIREMENTS  
BOARD ORDER NO. R6V-2020-0031  
WDID NO. 6B149411001

ATTACHMENT C

File Name: C:\Users\mccoy\OneDrive\Documents\Briggs Mine\GIS\Map\_Series\Briggs Mine\Monitoring Network and Process Ponds Layout.mxd  
 Date: 11/11/2020 10:00:00 AM  
 Scale: 1:5000  
 Projection: NAD83  
 Units: Feet  
 Author: mccoy

## Attachment D

### CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

#### **STANDARD PROVISIONS** FOR WASTE DISCHARGE REQUIREMENTS

##### 1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

##### 2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
  - f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.
3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.
  4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.
  5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.
  6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.
  7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**MONITORING AND REPORTING PROGRAM  
NO. R6V-2020-0031  
WDID NO. 6B149411001**

**FOR**

**DV NATURAL RESOURCES AND THE U.S. DEPARTMENT OF THE INTERIOR,  
BUREAU OF LAND MANAGEMENT  
BRIGGS PROJECT**

Inyo County

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This Monitoring and Reporting Program (MRP) No. R6V-2020-0031 is issued to DV Natural Resources (Discharger) for the Briggs Project (Facility) pursuant to California Water Code (CWC), section 13267 and incorporates requirements for groundwater and unsaturated zone monitoring and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations (CCR), title 27, section 20005, et seq. The technical reports required by Order No. R6V-2020-0031 and MRP No. R6V-2020-0031 are necessary to ensure compliance with the Waste Discharge Requirements (WDRs). Therefore, the burden, including costs, of these reports bears a reasonable relationship to the need for the report and the benefits to be obtained from the reports.

**I. WATER QUALITY PROTECTION STANDARD**

A Water Quality Protection Standard (WQPS), as specified in CCR, title 27, sections 20390 through 20415, is required to assure the earliest possible detection of a release from a waste management unit to the underlying soil and/or groundwater. The WQPS consists of all constituents of concern (COCs), the concentration limits for each COC, the point of compliance, and all water quality monitoring points. The Executive Officer shall review and approve the WQPS, or any modification thereto, for each monitored medium.

The Discharger is currently implementing a detection monitoring program (DMP) to monitor groundwater and the unsaturated zone for the Facility. Cyanide has been detected in the groundwater beneath the Facility at concentrations above the WQPS and constitutes significant evidence of a release. The Discharger is required to implement an Evaluation Monitoring Program (EMP) to determine the source and extent of the release in accordance with the time schedule specified in Order No. R6V-2020-0031. A WQPS is necessary to evaluate the effectiveness of the EMP and, as part of the DMP, to provide the best assurance of the earliest detection of any new releases from the Facility.

**A. Constituents of Concern**

The COCs include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management units (surface impoundments and

heap leach pad). The COCs for each monitored medium are listed in Attachment A, which is made part of this MRP. The Discharger must monitor all COCs at the sampling frequency and reporting frequency listed in Attachment A.

B. Monitoring Parameters

Monitoring parameters are those COCs that provide a reliable indication of a release from the surface impoundments. The monitoring parameters for each monitored medium are listed in this MRP, Attachment A. The Discharger must monitor all monitoring parameters at the sampling frequency and reporting frequency listed in Attachment A.

C. Concentration Limits

Concentration limits are established for each COC and are intended to reflect background ambient conditions of surface and subsurface media that are unaffected by a release from the existing surface impoundments. At any given time, the concentration limit for each COC must be equal to the background data set of that constituent unless a concentration limit greater than background (CLGB) has been established. CCR, title 27, section 20400 allows for various options to determine concentration limits.

1. Background concentration limits have been established in groundwater for pH, weak acid dissociable (WAD) cyanide, copper, iron, lead, and mercury and are the WQPS limits for these COCs for the DMP, as shown on the table below.

Constituent of Concern	Concentration Limit
pH	6.5 - 8.5 pH Units
WAD Cyanide	0.03 milligrams per liter (mg/L)
Copper	0.06 mg/L
Iron	0.3 mg/L
Lead	0.01 mg/L
Mercury	0.002 mg/L

2. For all other COCs, the Discharger is using the following methodologies to determine concentration limits for the groundwater monitoring program.
  - a. Interwell Comparisons – The Discharger is using historical water quality data from a background groundwater monitoring well to develop site-specific concentration limits for inorganic constituents.
  - b. Non-Statistical Comparisons – For inorganic COCs either not detected in the background well or only detected at trace

concentrations and for man-made organic COCs, the concentration limit is set at the respective practical quantitation limit (PQL) for the analytical method used.

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the Facility, the Discharger may request modification of the WQPS concentration limits to provide season-specific concentration limits (background data sets) for each COC at each monitoring point.

CLGBs for corrective action may be proposed by the Discharger in accordance with CCR, title 27, section 20430, after proposed corrective action measures reveal that it is technically and economically infeasible to achieve background water quality levels. The Discharger has not proposed CLGBs for this Facility.

D. Point of Compliance and Monitoring Points

The point of compliance and monitoring points for the groundwater and unsaturated zone systems are shown on Attachment B of this MRP. The Discharger may add monitoring points, as needed, to comply with the DMP, EMP, and corrective action program (CAP) requirements contained in Order No. R6V-2020-0031 and this MRP, and as approved by the Water Board Executive Officer.

The point of compliance is a vertical surface located at the hydraulically downgradient limit of the surface impoundments and leach pad that extends through the uppermost aquifer underlying the Facility. A groundwater monitoring network is established for the Facility. The point of compliance boundary is bound by monitoring wells MW-1, MW-3, MW-4, MW-5, and MW-6. Monitoring well MW-2B is the background monitoring well. The unsaturated (vadose) zone monitoring is comprised of lysimeters for the heap leach pad and surface impoundments.

E. Compliance Period

The compliance period is the number of years equal to the active life of the waste management unit plus any post-closure monitoring and maintenance period until the Water Board finds that the Facility no longer poses a threat to water quality. The compliance period is the minimum period during which the Discharger must conduct a water quality monitoring program subsequent to a release. The compliance period must begin anew each time the Discharger initiates an EMP. The compliance period may be extended if the Facility is not in compliance with its WQPS.

Pursuant to CCR, title 27, section 21400, the Discharger plans to clean-close all surface impoundments as specified in CCR, title 27, section 21400, subdivision (b)(1). At closure, any residual water remaining in the ponds will be allowed to evaporate and all residual wastes, including liquids, sludges, precipitates, and settled solids will be completely removed, and disposed of based on their waste classification. The cleaned liner of the ponds will be folded onto themselves, punctured, and buried in place with clean soil. The perimeter berms will be regraded to match the surrounding grades. Transfer pipelines will be removed, salvaged, or disposed of offsite. The ore material on the heap leach pad will be detoxified when total cyanide and WAD cyanide detected in the heap meet regulatory limits. Generally, those regulatory limits are 1.0 mg/L total cyanide and 0.2 mg/L WAD cyanide; however, actual detoxification limits will be established in a final closure plan and approved by the Water Board in Closure WDRs.

## II. MONITORING

The Discharger must comply with the monitoring requirements outlined below. The Discharger must monitor the groundwater and the unsaturated zone beneath the waste management units, and monitor wastewater in the surface impoundments. All monitoring and inspection activities must be documented, and all sampling must be conducted in accordance with an approved Sampling and Analysis Plan (SAP) that includes quality assurance and quality control standards and procedures, as described in the General Provisions for Monitoring and Reporting (Attachment D of this MRP).

The Discharger must operate and maintain a detection monitoring system that complies with the DMP monitoring provisions contained in CCR, title 27, sections 20380 through 20420. Monitoring of the groundwater and unsaturated zone must be conducted to provide the best assurance of the early detection of a release from the Facility. Changes to the existing monitoring systems must be designed and certified by a California-licensed professional geologist or civil engineer as meeting the requirements of CCR, title 27, section 20415(e)(1). The Discharger must collect, preserve, and transport samples in accordance with the SAP.

All samples collected in accordance with this MRP, except for field parameters, are to be analyzed by a California state-certified laboratory using United States Environmental Protection Agency (USEPA) analytical methods or the most recently approved SW-846 USEPA method or other equivalent USEPA method. An alternate method may be proposed and used if acceptable to the Executive Officer.

### A. Surface Impoundments

The surface impoundment monitoring program monitors the composition of wastes contained within the surface impoundments through the collection of liquid and solid samples for laboratory analyses. All observations and measurements must be recorded in a permanent logbook kept onsite.

1. Monitoring Points

A liquid grab sample will be collected from each surface impoundment at a location, as specified herein: opposite the discharge inlet; at a depth of one foot below the water surface elevation; and in a quiescent area of the surface impoundment.

If a surface impoundment is dry at the time of monitoring, this information must be recorded and reported to the Water Board in accordance with the reporting requirements of MRP, Section IV.A.

2. Monitoring Parameters and Constituents of Concern

The Discharger must monitor surface impoundment liquids for all COCs and monitoring parameters in accordance with the frequencies listed in Attachment A.

3. Field Parameters

The Discharger must monitor surface impoundment liquids for all field parameters in accordance with the frequencies listed in Attachment A.

4. Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of all field monitoring equipment.

5. Dikes and Liners

The Discharger must visually inspect each of the surface impoundment dikes and exposed liners at a regular frequency (such as daily) to determine if there are any indication of loss of integrity. Should the inspection indicate that any unauthorized discharge has occurred, or may occur, the Discharger must notify the Water Board within 24 hours of the inspection, followed by confirmation in writing within 7 days.

Measure freeboard (in feet), as measured from the top of the lowest part of the dike to the water surface elevation in each surface impoundment. The measurement must be done at a regular frequency (such as daily) to determine if sufficient freeboard exists and to provide information on the operation of the impoundment system.

6. Sludge

Collect a representative grab sample of the sludge (if present) of each surface impoundment, and analyze each sample for all COCs in accordance with the frequencies listed in Attachment A.

B. Leachate Collection and Recovery System (LCRS)

The LCRS monitoring program monitors the composition of liquids within the LCRS through the collection of liquid samples for laboratory analyses. All observations and measurements must be recorded in a permanent logbook kept onsite.

1. Monitoring Points

Each surface impoundment and each heap leach pad cell is equipped with in an LCRS. The LCRS monitoring point locations are shown on MRP, Attachment B. If a LCRS is dry at the time of monitoring, this information must be recorded and reported to the Water Board in accordance with the reporting requirements of MRP, Section IV.A.

2. Monitoring Parameters and Constituents of Concern

The Discharger must monitor LCRS liquids for all COCs and monitoring parameters in accordance with the frequencies listed in Attachment A.

3. Field Parameters

The Discharger must monitor LCRS liquid for all field parameters in accordance with the frequencies listed in Attachment A.

4. Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of all field monitoring equipment.

5. Inspections

Inspect the LCRS at a regular frequency (such as weekly) to determine the presence of liquids. Upon detection of liquid in a LCRS (1) at a volume greater than one-half of the Action Leakage Rate (ALR) or (2) for three consecutive liquid detections, the Discharger must immediately collect a grab sample of the liquid

and analyze the sample for all COCs and monitoring parameters listed in Attachment A.

The Discharger must record, in conjunction with the regular LCRS inspection, the volume of liquid pumped from the LCRS, the pumping rate (in gallons per day), date, and discharge location(s) of liquids pumped from the LCRS.

6. Surface Impoundment Action Leakage Rates and Rapid and Large Leak Rates

The Action Leakage Rates (ALRs) and Rapid and Large Leakage Rates (RLLRs) for the surface impoundments are shown in Table 1 below. The ALRs and RLLRs for the surface impoundments were derived from the 1992 USEPA guidance document, *Action Leakage Rates for Leak Detection Systems, Supplemental Background Document for the Final Double Liners and Leak Detection Systems Rule for Hazardous Waste Landfills, Waste Piles, and Surface Impoundments*. Per the USEPA guidance document, the standard ALR is 1,000 gallons per day (gpd) per acre, and in no instance may the RLLR exceed the maximum capacity of the leak detection system. To be conservative, 500 gpd is the ALR for all surface impoundments; the RLLRs are calculated based on LCRS design maximum capacity, which in this case is 800 gallons for each sump.

**Table 1. LCRS Action Leakage Rates and Rapid and Large Leakage Rates**

Surface Impoundment	Surface Area (Acres)	Action Leakage Rate (gpd)	Rapid and Large Leakage Rate (gpd)
Pregnant Pond	0.54	500	800
Barren Pond	0.88	500	800
Make-Up Pond	1.18	500	800
Detoxification Pond	0.88	500	800

Notes: gpd = gallons per day

If liquids are detected in the LCRS, the Discharger must take the response actions described in Table 2, LCRS Action and Response Levels.

**Table 2. LCRS Action and Response Levels for Surface Impoundments**

Unit Flow Rate	Action/Response
Less than Action Leakage Rate	Record weekly flow rate and submit recorded flow rates with the next regularly scheduled monitoring report. If detection of liquid in the LCRS (1) at a volume greater than one-half of the ALR or (2) for three consecutive liquid detections, the Discharger must immediately collect a grab sample of the liquid and analyze the sample for all COCs and monitoring parameters listed in Attachment A.
Greater than or equal to Action Leakage Rate	Notify the Water Board immediately (within 24 hours). Cease discharge to the affected surface impoundment and repair the liner.
Greater than or equal to Rapid and Large Leakage Rate	Notify the Water Board immediately (within 24 hours). Cease discharge to the affected surface impoundment, remove the contents of the surface impoundment and LCRS until the leakage rate is no longer exceeded and repair the liner. A sample must be collected and analyzed for the COCs and the monitoring parameters identified in Attachment A.

7. Heap Leach Pad LCRS Action and Response Plan

If liquids are detected in the Heap Leach Pad LCRS, the Discharger must take the response actions described in Table 3, LCRS Action and Response Plan for Heap Leach Pad.

**Table 3. LCRS Action and Response Plan for Heap Leach Pad**

Unit Flow Rate/Cumulative WAD Cyanide	Action/Response
Less than 10 gpad	No action required. Record weekly flowrate and submit with annual report.
Greater than or equal to 10 gpad	Notify the Water Board immediately (within 24 hours). Calculate recovered cyanide weekly, initiate cumulative calculation. Submit recorded flow rates and cumulative WAD Cyanide quantity with next regularly scheduled monitoring report.

Unit Flow Rate/Cumulative WAD Cyanide	Action/Response
Greater than or equal to 10 gpad and greater than 6 pounds Cumulative WAD Cyanide	Notify the Water Board immediately (within 24 hours). Calculate recovered cyanide weekly, initiate cumulative calculation, and identify contributions from individual cell(s). Submit recorded flow rates and cumulative WAD Cyanide quantity with next regularly scheduled monitoring report.
Greater than or equal to 10 gpad and greater than 8 pounds Cumulative WAD Cyanide	Notify the Water Board immediately (within 24 hours). Calculate recovered cyanide weekly, initiate cumulative calculation, and identify portions of individual cell(s) contributing to flow and concentration. Submit recorded flow rates and cumulative WAD Cyanide quantity with next regularly scheduled monitoring report.
Greater than or equal to 10 gpad and greater than 10 pounds Cumulative WAD Cyanide	Notify the Water Board immediately (within 24 hours). Shutoff problem cell(s) and submit remedial action plan to the Water Board.

Notes: gpad = gallons per acre per day

When a remedial action plan has been successfully completed, the cumulative WAD cyanide level will be reset to zero (0).

C. Unsaturated Zone

The unsaturated (vadose) zone monitoring program monitors the composition of soil-pore liquids beneath the surface impoundments and leach pad through the collection of liquid samples for laboratory analyses and field measurements.

1. Monitoring Points

The unsaturated zone is monitored for soil-pore liquids using lysimeters located directly beneath the LCRS of each surface impoundment and along the toe of the leach pad. Unsaturated zone monitoring point locations are shown on MRP, Attachment B. If a lysimeter is dry at the time of monitoring, this information must be recorded and reported in the Water Board in accordance with the reporting requirements of MRP, Section IV.A.

2. Monitoring Parameters and Constituents of Concern

The Discharger must monitor soil-pore liquids for all COCs and monitoring parameters in accordance with the frequencies listed in Attachment A.

3. Field Parameters

The Discharger must monitor soil-pore liquids for all field parameters in accordance with the frequencies listed in Attachment A.

4. Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of all field monitoring equipment.

5. Retest and Notification

If cyanide is detected at any of the unsaturated zone monitoring points, the Discharger must perform a retest for cyanide at that monitoring point within 48 hours of detection. The Discharger must also notify the Water Board in accordance with the Notice of Tentative Release requirements outlined in MRP, Section IV.B.1.

D. Groundwater

The groundwater monitoring program monitors the quality of groundwater that passes through the point of compliance as well as monitors the quality of groundwater upgradient, cross-gradient, and downgradient of the surface impoundments through the collection of groundwater samples for laboratory analysis and field measurement of water quality parameters.

1. Monitoring Points

Groundwater monitoring points are shown on MRP, Attachment B.

2. Depth to Groundwater

Prior to purging and sampling, the Discharger must measure and record the depth below the ground surface of the static groundwater elevation (feet below ground surface [bgs]) in all groundwater monitoring wells. The measurements must be accurate to the nearest 0.01 foot.

3. Groundwater Purging and Sampling

Prior to sampling, all groundwater monitoring wells must be purged using either standard or low-flow techniques until temperature, electrical conductivity, and pH of extracted well water have stabilized. These parameters will be considered stable when three consecutive readings have pH values within +/- 0.1 pH units, temperature values within +/- two (2) degrees Celsius, and electrical conductivity values within +/- three (3) percent.

4. Monitoring Parameters and Constituents of Concern

The Discharger must monitor, at each groundwater monitoring well, all COCs and monitoring parameters in accordance with the frequencies listed in Attachment A. Should any non-monitoring parameter COC exceed their respective concentration limit by a measurably significant amount at any given monitoring point, that non-monitoring parameter COC will become a monitoring parameter at that monitoring point.

5. Field Parameters

The Discharger must monitor the groundwater for all field parameters in accordance with the frequencies listed in Attachment A.

6. Aquifer Characteristics

The Discharger must calculate, and illustrate on a site plan and/or aerial photograph, the following aquifer characteristics: the depth to groundwater (feet bgs) in each groundwater monitoring well; the static water level (feet above mean sea level) in each groundwater monitoring well; the slope of the groundwater gradient (feet/feet); the direction of the groundwater gradient beneath and around the Facility (degrees from true north); the velocity of groundwater flow (feet/year); and the current groundwater isocontours for that monitoring period.

7. Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of the field monitoring equipment.

E. Storm Water Monitoring and Reporting Program

Waste in discharges of storm water must be reduced or prevented to achieve the best practical treatment level using controls, structures, and best management practices (BMPs) for areas associated with mining operations at the Facility. At minimum, the Discharger must: develop and implement a site-

specific storm water pollution prevention plan (SWPPP); conduct monitoring, including visual observations and periodic collection of samples for analytical analysis; evaluate storm water monitoring data; implement appropriate response actions when monitoring data indicate non-compliance with the storm water monitoring program; and provide annual reports to the Water Board.

1. Storm Water Pollution Prevention Plan

The Discharger must develop and implement a site-specific SWPPP (or an equivalent document) that contains, at minimum, the following elements. A copy of the SWPPP (and amendments thereto) must be maintained at the Facility so as to be available to site personnel at all times. The Discharger is required to submit a copy of the SWPPP to the Water Board in accordance with the schedule specified in MRP, Section IV.C.

a. Facility Information

A list of site contacts including those persons responsible for assisting with the implementation of the SWPPP.

b. Site Map

A site map that illustrates: the Facility boundary; all storm water drainage areas within the Facility and the flow direction of each drainage area; locations of storm water collection and conveyance systems, including associated discharge locations and directions of flow; locations of storm water monitoring points; locations of structural control measures that affect run-on; and locations of all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources.

c. List of Industrial Materials

A list of industrial materials<sup>1</sup> handled at the Facility, the locations where each material is stored and handled, as well as the typical quantities and handling frequency must be included in the SWPPP.

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<sup>1</sup> Includes, but is not limited to: raw materials, recyclable materials, intermediate products, final products, by-products, waste products, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances; pesticides; and waste products such as ashes, slag, and sludge and that are used, handled, stored, or disposed in relation to a facility's industrial activity.

d. Potential Pollutant Sources

A description of all potential pollutant sources including industrial processes, material handling and storage areas, dust and particulate generating activities, non-storm water discharges, and erodible surfaces.

e. Best Management Practices

A narrative description of each minimum and/or advanced BMP being implemented at the Facility, as well as a summary table that identifies each area of industrial activity, the associated pollutant sources and pollutants, and the specific BMPs being implemented.

The following minimum BMPs must be implemented and maintained to reduce or prevent pollutants in industrial storm water discharges: good housekeeping; preventative maintenance; spill and leak prevention response; material handling and waste management; erosion and sediment controls; an employee training program; and quality assurance and record keeping.

Advanced BMPs may be necessary to reduce or prevent discharges of pollutants in storm water discharges in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include: exposure minimization BMPs; storm water containment and discharge reduction BMPs; treatment control BMPs; or other advanced BMPs based on site-specific criteria.

f. Storm Water Monitoring Plan

The SWPPP must include a storm water monitoring plan that meets the requirements outlined in MRP, Section II.E.2 below.

2. Storm Water Monitoring

a. Monitoring Points

The storm water discharge monitoring locations must be selected such that samples collected are representative of storm water discharge leaving each drainage area identified for the Facility. The storm water discharge monitoring locations must be identified on the site plan in the SWPPP.

b. Storm Water Sampling

During storm events, stormwater runoff from the site must be sampled. The Discharger must collect storm water samples from each storm water discharge monitoring location and analyze for all monitoring parameters.

All storm water samples, with the exception of pH, are to be analyzed by a California state-certified laboratory using the most recently approved SW-846 USEPA method or other equivalent USEPA method. An alternate method may be proposed and used if acceptable to the Executive Officer.

c. Visual Observations

Monthly, the Discharger must visually observe and document, during normal operating hours, each drainage area for the following: the presence or indications of prior, current, or potential non-storm water discharges and their sources; authorized non-storm water discharges, their sources, and associated BMPs; and all potential pollutant sources.

Visual observations must also be conducted at the same time that storm water sampling occurs. At the time a storm water sample is collected, the Discharger must observe and document the discharge for the following.

- i. Visually observe and record the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash/debris, and source(s) of any discharged pollutants.
- ii. In the event that a discharge location is not visually observed during the sampling event, the Discharger must record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.

d. Monitoring Parameters

During storm events, the Discharger must monitor each storm water discharge monitoring location for all parameters in accordance with the frequencies listed in Attachment A.

e. Water Quality Thresholds

The specific water quality thresholds that apply to the storm water monitoring parameters are listed in the table below.

<b>STORM WATER MONITORING</b>	
<b>Parameter</b>	<b>Water Quality Thresholds</b>
Cadmium	Storm water discharges shall not contain cadmium at concentrations in excess of 0.10 mg/L.
Copper	Storm water discharges shall not contain copper at concentrations in excess of 0.3 mg/L.
WAD Cyanide	Storm water discharges shall not contain detectable concentrations of WAD cyanide.
Lead	Storm water discharges shall not contain lead at concentrations in excess of 0.6 mg/L.
Mercury	Storm water discharges shall not contain mercury at concentrations in excess of 0.002 mg/L.
Oil and Grease, Total	Storm water discharges shall not contain oils and greases at concentrations in excess of 15 mg/L.
pH	Measured pH shall not be lower than 6.0 nor greater than 9.0.
Total Suspended Solids	Storm water discharges shall not contain total suspended solids in excess of 30 mg/L.
Zinc	Storm water discharges shall not contain dissolved iron at concentrations in excess of 1.5 mg/L.

f. Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of any field monitoring equipment.

3. Storm Water Data Evaluation and Response Actions

The storm water monitoring data (storm water sampling and analytical data and visual observations) must be evaluated to determine the following: the effectiveness of BMPs in reducing or preventing pollutants in the storm water discharges; compliance with the monitoring parameter water quality thresholds; and the need to implement additional BMPs and/or SWPPP revisions.

The results of all storm water sampling and analytical results from each distinct sample must be directly compared to the water quality threshold for the corresponding monitoring parameter. An exceedance of one or more water quality threshold requires the Discharger to implement the following response actions:

- a. The Discharger must notify the Water Board verbally or via email within 30 days of obtaining laboratory results whenever a determination is made that a water quality threshold is exceeded for one or more storm water monitoring parameters;
- b. Identify the pollutant sources that may be related to the exceedance and whether the BMPs in the SWPPP have been properly implemented and perform BMP maintenance, if necessary;
- c. Assess the SWPPP and its implementation to determine whether additional BMPs or SWPPP measures are necessary to reduce or prevent pollutants in storm water discharges; and
- d. Revise or amend the SWPPP, as appropriate, to incorporate the additional BMPs or SWPPP measures necessary to reduce or prevent pollutants in storm water discharges and implement the revised SWPPP no later than 60 days following the reported exceedance; or
- e. Demonstrate, to the satisfaction of the Executive Officer, that the exceedance(s) is attributed solely to non-industrial pollutant sources and/or to natural background sources.

#### F. Wetlands Monitoring

On a monthly basis, the Discharger must measure the depth to groundwater beneath the fringe wetlands along the edge of the playa to ensure that Facility operations do not have a negative effect on wetland vegetation. A total of five (5) piezometers are currently monitored by the Discharger (Attachment C). If the piezometers indicate a sustained two (2) foot drop against the baseline levels, then vegetative monitoring must be undertaken. If vegetative monitoring shows a 30 percent decrease in the inland saltgrass ground cover combined with either the absence of rhizome sprouting or the presence of leaf rolling, wetland mitigation will be undertaken.

The Discharger must provide a summary of wetlands monitoring in each quarterly monitoring report.

### III. DATA ANALYSES

All data analyses methods (statistical and non-statistical) must meet the requirements of CCR, title 27, section 20415, subdivisions (e)(8) and (9).

A. Site-Specific Statistical Analysis Methods

To determine whether there is "measurably significant" evidence of any new releases from the Facility, evaluation of data will be conducted using statistical methods. For detection monitoring, the Discharger must use statistical methods to analyze COCs and monitoring parameters that exhibit concentrations that equal or exceed their respective concentration limit. The Discharger may propose and use any data analyses that meets the requirements of CCR, title 27, section 20415, subdivision (e)(7). *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (USEPA, 2009) or subsequent versions may also be used to select the statistical test to use for comparing detection monitoring data to background monitoring data.

B. Non-Statistical Analysis Methods

To determine if any releases occur from the Facility, data evaluation must also be conducted using non-statistical methods. Non-statistical analyses shall be as follows.

1. Physical Evidence

Physical evidence can include, but is not limited to, unexplained stress in biological communities such as vegetation loss, soil discoloration, or groundwater mounding. Each quarterly and annual report must comment on such physical elements.

2. Time-Series Plots

Non-statistical evidence of a release may include trends of increasing concentrations of one or more constituents over time, as depicted in time-series plots. Each quarterly and annual report must include time-series plots. Time-series plots are not required for parameters that have never been detected above their MDL (as specified by the applicable USEPA method).

IV. REPORTING REQUIREMENTS

The Discharger must comply with the following reporting requirements.

A. Scheduled Reports to be Filed with the Water Board

The following periodic reports, including all water and soil monitoring data collected during the corresponding reporting period, must be submitted electronically to the Water Board by uploading to the State Water Board's GeoTracker system, per the following schedule. The laboratory data must be uploaded in Electronic Deliverable Format (EDF).

<b>MONITORING REPORTING SCHEDULE</b>		
<b>Report Name<sup>1</sup></b>	<b>Sampling and Reporting Period</b>	<b>Report Due Date</b>
First Quarter Monitoring Report	January 1 – March 31	April 30
Second Quarter Monitoring Report	April 1 – June 30	July 30
Third Quarter Monitoring Report	July 1 – September 30	October 30
Fourth Quarter Monitoring Report	October 1 – December 31	January 30
Annual Monitoring Report	January 1 – December 31	January 30
Annual Storm Water Report	July 1 – June 30	July 30
Three-Year Constituent of Concern Report <sup>2</sup>	January 1 – June 30	July 30
	July 1 – December 31	January 30

<sup>1</sup> Reports with same due dates may be combined.  
<sup>2</sup> Sampling and reporting period will alternate between January 1 through June 30 for one three-year sampling event and July 1 through December 31 for the next three-year sampling event. The July 30 report due date corresponds to the January 1 through June 30 sampling and reporting period; the January 30 report due date corresponds to the July 1 through December 31 sampling and reporting period. The next three-year constituent of concern report is due January 30, 2023.

1. Quarterly Monitoring Reports

Each quarterly report must include, but not be limited to, the following information.

- a. All data collected during the reporting period in accordance with the approved SAP for the surface impoundments, LCRS, unsaturated zone, groundwater, and wetland monitoring, as outlined in MRP, Section II.
- b. Tabulated results of sampling and laboratory analyses for each groundwater monitoring point, including historical (last ten years at minimum) and current reporting period data, as well as the concentration limit for each monitoring parameter and an identification of each sample that exceeds its respective concentration limit by a measurably significant amount at any given monitoring point.
- c. Tabulated results of sampling and laboratory analyses for each of the following monitoring points including historical (last ten years at minimum) and current reporting period data.
  - i. All unsaturated zone monitoring points
  - ii. All LCRS monitoring points
  - iii. All surface impoundment monitoring points
  - iv. All wastewater effluent monitoring points

- d. A map and/or aerial photograph showing the surface impoundment perimeter and ancillary facilities as well as locations of monitoring points and background monitoring points, observation stations, and the surface trace of the point of compliance.
- e. Describe, calculate and illustrate on a map and/or aerial photograph the static groundwater surface elevation (feet above mean sea level) in each groundwater monitoring well, the groundwater gradient (feet/feet) and the direction of the groundwater gradient beneath and around the surface impoundments, the velocity of groundwater flow (feet/year), and the current groundwater isocontours for that monitoring period.
- f. All data and visual observations associated with monitoring of the surface impoundments, solution collection channel conveyance system, and an evaluation of the effectiveness of the LCRS facilities.
- g. A narrative description of any modifications to, additions to, maintenance of, or operational problems associated with the wastewater conveyance system or surface impoundment disposal facilities.
- h. Copies of all field monitoring and well sampling data sheets.
- i. Time-series plots of the analytical results from the groundwater, unsaturated zone, LCRS, and surface impoundment monitoring at each monitoring point for each COC detected during the monitoring period as well as available historical data (minimum of last ten years of data). Time-series plots must include, as horizontal lines, the COCs concentration limit as derived in accordance with the WQPS for the respective COC/monitoring point pair (if applicable), as well as the PQL and MDL for the analytical method used.
- j. A letter transmitting the essential points of each report, including a discussion of any violations found since the last report was submitted and describing actions taken or planned for correcting those violations.
  - i. If the Discharger has previously submitted a detailed time schedule for correcting violations, a reference to the correspondence transmitting this schedule will suffice.
  - ii. If no violations have occurred since the last submittal, this must be stated in the letter of transmittal.

2. Annual Monitoring Reports

Each annual report must include, but not be limited to, the following information.

- a. All data reported in accordance with this MRP, Section IV.A.1.
- b. A narrative of the items described in the General Provisions for Monitoring and Reporting (Attachment D of this MRP).
- c. A list of all monitoring point/monitoring parameter pairs (pairs), by medium, which have exhibited a verified measurably significant increase, together with the respective date (for each) when that increase occurred. Any pairs that have shown an increase within that (prior) year shall be bold-underlined. In addition, by medium, list any non-monitoring parameter COCs that, during testing that year (tested every three years), have exceeded their respective concentration limit by a measurably significant amount and, as a result, have become monitoring parameters, together with the date when the transition occurred.
- d. Four maps, one for each quarterly monitoring period of the last reporting year, showing (1) the groundwater elevation isocontours determined for that monitoring period, (2) all monitoring points, (3) the surface trace for each waste management unit, (4) all observation stations, and (5) the surface trace of the Facility's point of compliance. The maps must be to scale, be labeled, and include a legend.
- e. Graphical and tabular data for the monitoring data obtained for the previous calendar year (January – December). Each table must summarize the historical and most recently detected constituent concentrations for all locations sampled and compare these data to both the given monitoring point/COC pair's respective statistical concentration limit and (if applicable) MCL and be labeled appropriately. Each such graph must be plotted using raw data, and at a scale appropriate to show trends or variations in water quality. For graphs showing trends of similar constituents (e.g., volatile organic compounds), the scale must be the same.
- f. Calibration methods and any discrepancies of any meters used for field parameter evaluations after calibration is performed.

- g. An evaluation of the effectiveness of both the groundwater and unsaturated zone monitoring programs and any proposed modifications necessary to improve the detection monitoring.
- h. A brief chronological summary of dates of any operational problems and maintenance activities that may impact water quality at the site.
- i. The compliance record and the corrective actions taken or planned, which may be needed to bring the Facility into full compliance with the discharge requirements.
- j. Evidence that adequate financial assurance for (1) closure and post-closure monitoring and maintenance and (2) corrective action for all known or reasonably foreseeable releases is still in effect. Evidence may include a copy of the renewed financial instrument or a copy of the receipt for payment of the financial instrument.
- k. Evidence that the financial assurance amount is adequate or increase the amount of financial assurance by an appropriate amount, if necessary, due to inflation, a change in the preliminary closure plan, or other unforeseen events.
- l. The Discharger must review the preliminary closure plan and corrective action plan for all known or reasonably foreseeable releases annually to determine if significant changes in the operation of the Facility warrant an update to these plans. Any proposed changes to these plans must be outlined in the annual report.
- m. The Discharger has established background concentration limits in the WQPS for detection monitoring. These limits may be revised annually. The revised limits must be included in the annual report.

3. Annual Storm Water Reports

Annual storm water reports must be submitted to the Water Board no later than **July 30** of each year in accordance with the frequency listed in Attachment A, and may be combined with the second quarter monitoring report. Annual storm water reports must include, but not be limited to, the following information:

- a. All data collected during the reporting period in accordance with the storm water monitoring plan, as outlined in MRP, Section II.E.2.

- b. Tabulated results of sampling and laboratory analyses for each storm water discharge monitoring location, including historical and current reporting period data, as well as the water quality threshold for each monitoring parameter and an identification of each sample that exceeds its respective water quality threshold at any given discharge monitoring location.
  - c. A copy of the current site map from the SWPPP.
  - d. Copies of all field monitoring, storm water sampling, and visual observation data sheets. An explanation shall be provided in the Annual Report for uncompleted sampling event visual observations.
  - e. Calibration methods and any discrepancies of any meters used for field parameter evaluations after calibration is performed.
  - f. A summary of the actions taken in response to a water quality threshold exceedance, including monitoring parameter and pollutant source(s) involved, additional BMP and/or SWPPP measures taken, and associated dates and timelines for implementing the response action; or a demonstration that the exceedance(s) is attributed to a non-industrial pollutant source and/or to a natural background source.
  - g. A copy of any SWPPP amendments and/or revisions for the reporting period.
  - h. A summary of significant spills and/or leaks that occurred at the Facility during the reporting period and the response taken by the Discharger, including dates.
  - i. A summary of employee storm water related trainings performed during the reporting period, including dates and content.
4. Three-Year Constituent of Concern Monitoring and Reporting Program

Pursuant to CCR, title 27, section 22500, and as specified in CCR, title 27, 20420, subdivision (g), every three years the Discharger must sample a suite of non-monitoring parameter COCs. Groundwater samples must be collected at all groundwater monitoring points and submitted for laboratory analyses once every three years for volatile organic compounds, semi-volatile organic compounds, and CAM-17 metals in accordance with this MRP, Attachment A. Successive monitoring efforts must be carried out alternately during January 1 through June 30 of one three-year sampling event and July 1 through

December 31 of the next three-year sampling event, and every third year, thereafter. The three-year COC sampling event must be reported no later than 45 days following the monitoring period. The last three-year sampling event was scheduled to occur in the first half of 2019 and reported in 2019; therefore, the next three-year sampling event is scheduled to occur in second half of 2022 and reported to the Water Board no later than **January 30, 2023**.

B. Unscheduled Reports to be Filed with the Water Board

The following reports must be submitted to the Water Board as specified below.

1. Notice of Tentative Release from the Facility

Should the statistical or non-statistical data analyses or field verification testing indicate, for any given COC, that a release is tentatively identified, the Discharger must follow these requirements.

a. Physical or Measurably Significant Evidence of a Release from the Facility

The Discharger must immediately (within 24 hours) notify the Water Board verbally whenever a determination is made that there is significant physical or “measurably significant” evidence of a release from the Facility. This verbal notification must be followed by written notification via certified mail within seven days of such determination. Upon such notification, the Discharger may initiate the verification procedures (as outlined in Order No. R6V-2020-0031, Section III.F) or demonstrate that another source other than the surface impoundments caused evidence of a release in accordance with MRP, Section IV.B.1.b.

The notification must include the following information:

- i. The potential source of the release;
- ii. General information including the date, time, location, and cause of the release;
- iii. An estimate of the rate and volume of waste involved;
- iv. A procedure for collecting samples and description of laboratory tests to be conducted;

- v. Identification of any water body or water-bearing media affected or threatened;
  - vi. A summary of proposed actions; and
  - vii. For a physical evidence of a release – the physical factors that indicate evidence of a release; or
  - viii. For a measurably significant evidence of a release – the monitoring parameters and/or COCs that are involved in the measurably significant evidence of a release from the Facility.
- b. Other Source That May Cause Evidence of a Release from the Facility

The Discharger may make a demonstration that a source other than the Facility caused evidence of a release. For this case, the Discharger must notify the Water Board of the intention to make this demonstration. The notification must be sent to the Water Board by certified mail within seven days of determining physical or measurably significant evidence of a release.

2. Exceeding the Leakage Rates for Surface Impoundments

Exceeding the ALR for the surface impoundment LCRS is an Adverse Condition. The Discharger must immediately notify the Water Board verbally within 24 hours whenever a determination is made that leakage into the LCRS exceeds the ALR for the respective surface impoundment. This oral notification must be followed by written notification via certified mail within 7 days of such determination. This written notification must then be followed by a technical report via certified mail within 30 days of such determination. The technical report must describe the actions taken to abate the Adverse Condition and describe any proposed actions to abate future potential Adverse Conditions.

Exceeding the RLLR is also an Adverse Condition. In addition to the requirements above for exceeding the Action Leakage Rate, the technical report must include sampling results and a comparison of the wastewater in the surface impoundment and the leachate in the LCRS, as described in MRP, Section II.B.6, Table 2.

3. Exceeding Unit Flow Rate and Cumulative WAD Cyanide for Heap Leach Pad

Exceeding the Unit Flow Rate and Cumulative WAD Cyanide for the

heap leach pad LCRS is an Adverse Condition. The Discharger must immediately notify the Water Board verbally within 24 hours whenever a determination is made that leakage into the LCRS exceeds the Unit Flow Rate and corresponding cumulative WAD cyanide concentration for any given heap leach cell. This oral notification must be followed by written notification via certified mail within 7 days of such determination. This written notification must then be followed by a technical report via certified mail within 30 days of such determination. The technical report must describe the actions taken to abate the Adverse Condition and describe any proposed actions to abate future potential Adverse Conditions.

4. Evaluation Monitoring

The Discharger must, within 90 days of verifying a release, submit a technical report and amended report of waste discharge to establish an Evaluation Monitoring Program (EMP) pursuant to CWC, section 13267, subdivision (b), proposing an EMP meeting the provisions of CCR, title 27, section 20420, subdivision (k)(5). If the Discharger decides not to conduct verification procedures or decides not to make a demonstration that a source other than the Facility is responsible for the release, the release will be considered verified. The EMP must include the following information:

- a. COC Concentrations – the maximum concentration of each COC at each monitoring point as determined during the most recent COC sampling event (i.e., under CCR, title 27, section 20420, subdivision (g) or (k)[1]). Any COC that exceeds its concentration limit is to be retested at that monitoring point. Should the results of the retest verify that the COC is above the concentration limit, then that COC will become a monitoring parameter at that monitoring point;
- b. Proposed Monitoring System Changes – any proposed changes to the groundwater and unsaturated zone monitoring systems necessary to meet the provisions of CCR, title 27, section 20425;
- c. Proposed Monitoring Changes – any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods, or statistical methods used at the Facility necessary to meet the provisions of CCR, title 27, section 20425; and
- d. Proposed Delineation Approach – a detailed description of the measures to be taken by the Discharger to assess the nature and extent of the release from the Facility.

5. Engineering Feasibility Study Report

Within 180 days of verifying the existence of any new release, the Discharger must submit a revised Engineering Feasibility Study report meeting CCR, title 27, section 20420, subdivision (k)(6), proposing corrective action measures that could be taken to achieve background concentrations for all COCs involved in the release. This report will be the basis for a later expanded Engineering Feasibility Study submitted under the EMP, as specified in CCR, title 27, section 20425, subdivision (b).

6. Monitoring Well Logs

All monitoring wells (including groundwater and unsaturated zone monitoring wells) and all other borings installed to satisfy the requirements of this MRP must be drilled by a licensed drilling contractor and must be logged during drilling under the direct supervision of either a California-licensed professional geologist or civil engineer with expertise in stratigraphic well logging, as indicated in CCR, title 27, section 20415, subdivision (e)(2). Such logs must be submitted to the Water Board within 90 days following completion of fieldwork.

7. Significant Earthquake Event

After a significant<sup>2</sup> or greater earthquake event at or near the Facility, the Discharger shall notify the Water Board within 48 hours, and within 45 days submit to the Water Board a detailed written post-earthquake report describing any physical damages to the containment features or groundwater and/or unsaturated zone monitoring systems or to report no damage to the Facility was sustained. The Discharger shall closely examine the surface impoundments and appurtenant wastewater piping, inspect the slope conditions, drainage control system, and surface grading for signs of cracking or depressed/settled areas following the earthquake event. If cracking or depressed areas are identified, the Discharger shall make repairs to those areas within 30 days from the date of the earthquake event. Repairs and maintenance must be consistent with Order No. R6V-2020-0031.

C. Technical Reports

Pursuant to CWC, section 13267, subdivision (b), the Discharger must submit by **July 31, 2020**, a SWPPP that meets the requirements outlined in

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<sup>2</sup> A significant earthquake is a seismic event classified according to the United States Geological Survey (USGS) Earthquake Hazard Program as a moderate earthquake measuring between 5 and 5.9 on the Richter scale, or higher. The Discharger may use the Modified Mercalli Intensity Scale VI or higher for equivalent ground shaking generated by a significant earthquake of Richter magnitude 5.0 or higher as contained with the USGS Earthquake Hazard Program Magnitude/Intensity Comparison chart found at <https://earthquakes.usgs.gov>.

MRP, Section II.E.1. The report must be certified by a California-licensed professional geologist or civil engineer.

D. General Provisions

The Discharger must comply with Attachment D, "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of this MRP.

E. Failure to Furnish Reports

Any person failing or refusing to furnish technical or monitoring reports or falsifying any information provided therein is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation pursuant to CWC, section 13268.

F. Violations

If monitoring data indicate a violation of a specific requirement in these WDRs, the Discharger must report the violation in the scheduled report for the corresponding reporting period and provide information indicating the cause of violation(s) and the action taken or planned to bring the discharge into compliance.

G. Electronic Reporting Requirements

Pursuant to CCR, title 23, section 3890, the Discharger must submit reports, including soil and water data, prepared for the purpose of subsurface investigation or remediation of a discharge of waste to land subject to Division 2 of CCR, title 27, electronically over the internet to the State Water Resources Control Board's GeoTracker system. This requirement is in addition to, and not superseded by, any other applicable reporting requirement. The Discharger must provide all monitoring reports to the Water Board, as specified in this MRP, and upload the full monitoring report into GeoTracker, as stipulated by CCR, title 23.

For all other types of documents and correspondence, please send it to the Water Board's email address at [Lahontan@waterboards.ca.gov](mailto:Lahontan@waterboards.ca.gov) and include the WDID No. and Facility name in the subject line.

Ordered by: Patty Z. Kouyoumdjian Dated: May 6, 2020  
PATTY Z. KOUYOUMDJIAN  
EXECUTIVE OFFICER

- Attachments:
- A. Water Quality Monitoring Program
  - B. Briggs Mine Project (Briggs Mine), Inyo County, California, Monitoring Network
  - C. Briggs Mine Project (Briggs Mine), Inyo County, California, Piezometer Location Map
  - D. General Provisions for Monitoring and Reporting, September 1, 1994

**ATTACHMENT A – WATER QUALITY MONITORING PROGRAM**

<b>SURFACE IMPOUNDMENT</b>				
<b>Parameter</b>		<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
<b>Field Parameters</b>				
pH		pH units	quarterly	quarterly
Electrical Conductivity		µmhos/cm	quarterly	quarterly
<b>Constituents of Concern - Liquid</b>				
<b>Monitoring Parameters<sup>1</sup></b>	Arsenic	milligrams/liter	quarterly	quarterly
	Copper	milligrams/liter	quarterly	quarterly
	WAD Cyanide	milligrams/liter	quarterly	quarterly
	Iron	milligrams/liter	quarterly	quarterly
	Lead	milligrams/liter	quarterly	quarterly
	Mercury	milligrams/liter	quarterly	quarterly
	Nitrate	milligrams/liter	quarterly	quarterly
	Sulfate	milligrams/liter	quarterly	quarterly
	Total Dissolved Solids	milligrams/liter	quarterly	quarterly
<b>Constituents of Concern - Sludge (CAM 17 Metals<sup>2</sup>)</b>				
Antimony		milligrams/kilogram	annual	annual
Arsenic		milligrams/kilogram	annual	annual
Barium		milligrams/kilogram	annual	annual
Beryllium		milligrams/kilogram	annual	annual
Cadmium		milligrams/kilogram	annual	annual
Chromium		milligrams/kilogram	annual	annual
Cobalt		milligrams/kilogram	annual	annual
Copper		milligrams/kilogram	annual	annual
Lead		milligrams/kilogram	annual	annual
Mercury		milligrams/kilogram	annual	annual
Molybdenum		milligrams/kilogram	annual	annual
Nickel		milligrams/kilogram	annual	annual
Selenium		milligrams/kilogram	annual	annual
Silver		milligrams/kilogram	annual	annual
Thallium		milligrams/kilogram	annual	annual
Vanadium		milligrams/kilogram	annual	annual
Zinc		milligrams/kilogram	annual	annual

<b>LEACHATE COLLECTION AND RECOVERY</b>				
<b>Parameter</b>		<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
<b>Field Parameters</b>				
pH		pH units	quarterly	quarterly
Electrical Conductivity		µmhos/cm	quarterly	quarterly
<b>Constituents of Concern</b>				
<b>Monitoring Parameters<sup>1</sup></b>	Arsenic	milligrams/liter	quarterly	quarterly
	Copper	milligrams/liter	quarterly	quarterly
	WAD Cyanide	milligrams/liter	quarterly	quarterly
	Iron	milligrams/liter	quarterly	quarterly
	Lead	milligrams/liter	quarterly	quarterly
	Mercury	milligrams/liter	quarterly	quarterly
	Nitrate	milligrams/liter	quarterly	quarterly
	Sulfate	milligrams/liter	quarterly	quarterly
Total Dissolved Solids		milligrams/liter	quarterly	quarterly

<b>UNSATURATED ZONE</b>				
<b>Parameter</b>		<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
<b>Field Parameters</b>				
pH		pH Units	monthly	quarterly
Electrical Conductivity		µmhos/cm	monthly	quarterly
<b>Constituents of Concern</b>				
<b>Monitoring Parameters<sup>1</sup></b>	WAD Cyanide	milligrams/liter	monthly	quarterly
	Nitrate	milligrams/liter	monthly	quarterly
	Total Dissolved Solids	milligrams/liter	monthly	quarterly

GROUNDWATER					
Parameter		Units	Sampling Frequency	Reporting Frequency	
<b>Field Parameters</b>					
Depth to Groundwater		feet below ground surface	quarterly	quarterly	
pH		pH units	quarterly	quarterly	
Electrical Conductivity		µmhos/cm	quarterly	quarterly	
Temperature		degrees Fahrenheit or Celsius	quarterly	quarterly	
<b>Constituents of Concern</b>					
Monitoring Parameters <sup>1</sup>	Arsenic		milligrams/liter	quarterly	quarterly
	Copper		milligrams/liter	quarterly	quarterly
	WAD Cyanide		milligrams/liter	quarterly	quarterly
	Iron		milligrams/liter	quarterly	quarterly
	Lead		milligrams/liter	quarterly	quarterly
	Mercury		milligrams/liter	quarterly	quarterly
	Nitrate		milligrams/liter	quarterly	quarterly
	Sulfate		milligrams/liter	quarterly	quarterly
	Total Dissolved Solids		milligrams/liter	quarterly	quarterly
<b>Three Year Constituents of Concern</b>					
Antimony		milligrams/liter	3 year	3 year	
Arsenic		milligrams/liter	3 year	3 year	
Barium		milligrams/liter	3 year	3 year	
Beryllium		milligrams/liter	3 year	3 year	
Cadmium		milligrams/liter	3 year	3 year	
Chromium		milligrams/liter	3 year	3 year	
Cobalt		milligrams/liter	3 year	3 year	
Copper		milligrams/liter	3 year	3 year	
Lead		milligrams/liter	3 year	3 year	
Mercury		milligrams/liter	3 year	3 year	
Molybdenum		milligrams/liter	3 year	3 year	
Nickel		milligrams/liter	3 year	3 year	
Selenium		milligrams/liter	3 year	3 year	
Silver		milligrams/liter	3 year	3 year	
Thallium		milligrams/liter	3 year	3 year	
Vanadium		milligrams/liter	3 year	3 year	
Zinc		milligrams/liter	3 year	3 year	
Semi-volatile Organic Compounds		micrograms/liter	3 year	3 year	
Volatile Organic Compounds		micrograms/liter	3 year	3 year	

STORM WATER MONITORING			
Parameter	Units	Sampling Frequency	Reporting Frequency
<b>Parameters</b>			
Cadmium	milligrams/liter	four qualifying storm events per year <sup>3</sup>	annual
Copper	milligrams/liter		
WAD Cyanide	milligrams/liter		
Electrical Conductivity	µmhos/cm		
Lead	milligrams/liter		
Mercury	milligrams/liter		
Nitrate	milligrams/liter		
Oil and Grease, total	milligrams/liter		
pH	pH Units		
Temperature	degrees Fahrenheit or Celsius		
Total Suspended Solids	milligrams/liter		
Zinc	milligrams/liter		

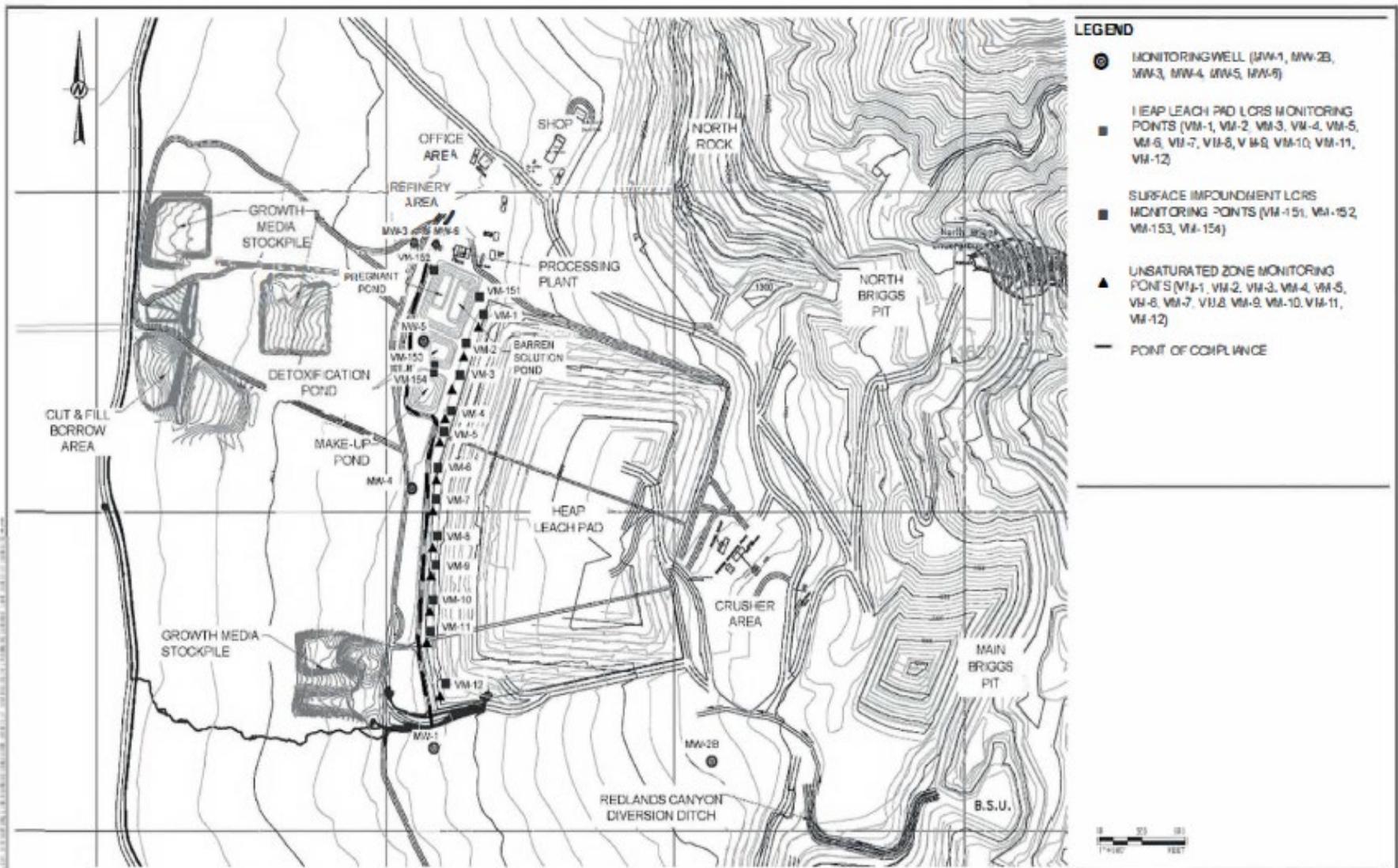
1 - Laboratory analytical data is uploaded to GeoTracker quarterly, and monitoring reports are submitted quarterly.

2 - CAM 17 Metals as defined in California Code of Regulations, title 22, section 66261.24.

3 - A qualifying storm event is a precipitation event that produces a storm water discharge for at least one drainage area and is preceded by 48 hours with no discharge from any drainage area. The Discharger shall collect and analyze storm water samples from two qualifying storm events within the first half of each reporting year (July 1 to December 31) and from two qualifying storm events within the second half of each reporting year (January 1 through June 30). If a sufficient number of qualifying storm events do not occur within a given reporting year, the Discharger must document and report that information in the regularly scheduled Annual Storm Water Report.

µmhos/cm - micromhos per centimeter

NTU - Nephelometric Turbidity Units

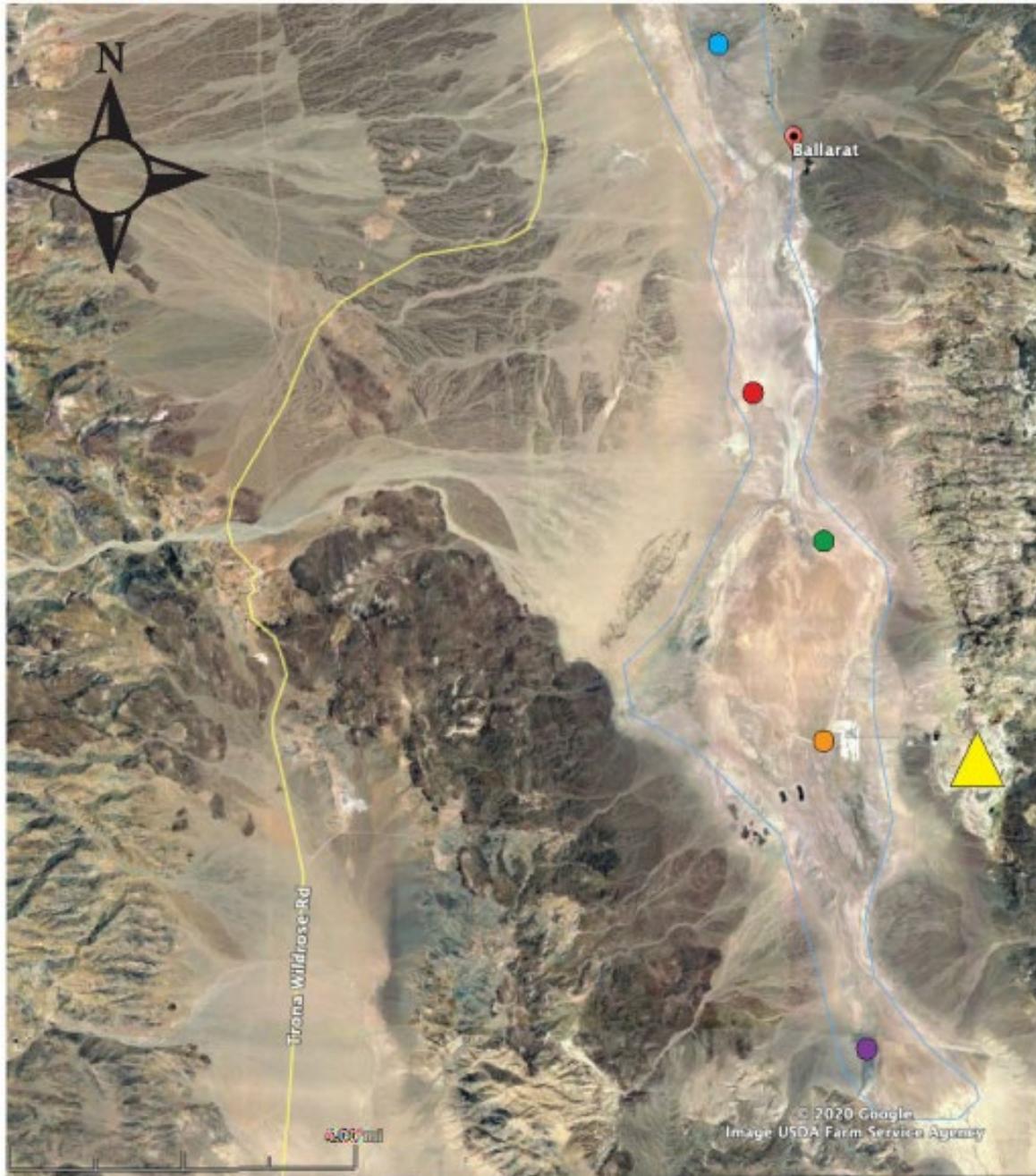


DV NATURAL RESOURCES  
BRIGGS PROJECT  
INYO COUNTY

**BRIGGS MINE PROJECT (BRIGGS MINE)  
INYO COUNTY, CALIFORNIA  
MONITORING NETWORK**

MONITORING AND REPORTING PROGRAM  
BOARD ORDER NO. R6V-2020-0031  
WDID NO. 68149411001

ATTACHMENT B



**LEGEND**

- |  |   |
|--|---|
|  Briggs Mine        |  Briggs Piezometer |
|  Post Piezometer    |  Eckert Piezometer |
|  Park Piezometer    |   |
|  Big Hom Piezometer |   |

DV NATURAL RESOURCES, LLC  
BRIGGS PROJECT (BRIGGS MINE)  
INYO COUNTY, CALIFORNIA

**Piezometer Map**

Attachment C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

**GENERAL PROVISIONS**  
FOR MONITORING AND REPORTING

1. **SAMPLING AND ANALYSIS**

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
  - i. Standard Methods for the Examination of Water and Wastewater
  - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

## 2. OPERATIONAL REQUIREMENTS

### a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

### b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

## 3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
  - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
  - ii. In the case of a partnership, by a general partner;
  - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
  - i. Name and telephone number of individual who can answer questions about the report.
  - ii. The Monitoring and Reporting Program Number.
  - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

#### 4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mrp