CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2016-XXXX
FOR
MERIDIAN BEARTRACK CO.
MERIDIAN GOLD COMPANY
ROYAL MOUNTAIN KING MINE
CALAVERAS COUNTY

This monitoring and reporting program (MRP) is issued to Meridian Beartrack Co. (Discharger) pursuant to California Water Code section 13267 and incorporates requirements for groundwater, surface water, and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations, title 27, section 20005, et seq. (hereafter Title 27), Waste Discharge Requirements (WDRs) Order No. R5-2016-XXXX, and the Standard Provisions and Reporting Requirements dated April 2016 (SPRRs). Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer. Failure to comply with this MRP, or with the SPRRs, constitutes noncompliance with the WDRs and with Water Code Section 13267, which can result in the imposition of civil monetary liability.

A. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and leachate in accordance with Standard Monitoring Specifications in Section I of the SPRRs. All monitoring shall be conducted in accordance with the March 2015 *Sample and Analysis Plan*, which includes quality assurance/quality control standards.

All compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as indicated and listed in Tables 1 through 4.

The Discharger shall use USEPA test methods with the lowest achievable detection limit for that constituent taking any matrix interferences into account. The reporting limit shall be no higher than the practical quantitation limit. The Discharger shall report all trace concentrations that are between the detection limit and the practical quantitation limit. All metals analyses shall be for dissolved metals.

The monitoring program of this MRP includes:

Section	Monitoring Program
A.1	Groundwater Monitoring
A.2	Surface Water Monitoring
A.3	Skyrocket Pit and North Pit Water Monitoring
A.4	ODS Seeps
A.5	Floatation Tailings Reservoir (FTR) to Skyrocket Pit Water Transfer Monitoring
A.6	Skyrocket Pit to North Pit Water Transfer Monitoring
A.7	Skyrocket Pit Treatment Monitoring
A.8	LCRS Monitoring, Action Leakage Rate, and Annual LCRS Testing
A.9	Facility Monitoring

1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27, sections 20415 and 20420. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater detection monitoring system meets the applicable requirements of Title 27.

The current groundwater monitoring network shall consist of the following:

Well	Status	Units Being Monitored
FPZ-3*	Detection	FTR
FPZ-4*	Detection	FTR
FPZ-5*	Detection	FTR
FPZ-6*	Detection	FTR
FPZ-7A*	Detection	FTR
GWM-2	Detection	FTR
GWM-9	Detection	West ODS
GWM-10	Detection	West ODS, Skyrocket Pit
GWM-10	Detection	Gold Knoll ODS
GWM-12	Detection	Skyrocket Pit
GWM-15	Detection	Process Water Pond
GWM-16	Detection	West ODS
GWM-21	Detection	Skyrocket Pit, Gold Knoll ODS
GWM-25	Detection	Process Water Pond
GWM-26	Detection	Up-gradient of Gold Knoll ODS
GWM-30R	Detection	FTR ODS
GWM-31	Detection	Gold Knoll ODS
GWM-32	Detection	West ODS
GWM-34	Detection	Gold Knoll ODS
GWM-37	Detection	Skyrocket Pit
PZ-1	Detection	Gold Knoll ODS

Well	Status	Units Being Monitored
PZ-4	Detection	Skyrocket Pit

* Monitored for groundwater elevation only

Groundwater samples shall be collected from the background wells, detection monitoring wells, and any additional wells added as part of the approved groundwater monitoring system. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected and analyzed for the monitoring parameters in accordance with the specifications in Table 1:

Table 1: Groundwater Monitoring

Parameters	Units	Monitoring Frequency[2]	Reporting Frequency
Field Parameters			
Groundwater Elevation	feet & hundredths, MSL	Semiannually[1]	Semiannually
Temperature	°C	Semiannually	Semiannually
Electrical Conductivity	umhos/cm	Semiannually	Semiannually
pH	pH units	Semiannually	Semiannually
Monitoring Parameters			
Lab pH	pH units	Semiannually[3]	Semiannually
Total Dissolved Solids	mg/L	Semiannually[3]	Semiannually
Chloride	mg/L	Semiannually[3]	Semiannually
Sulfate	mg/L	Semiannually[3]	Semiannually
Calcium	mg/L	Semiannually[3]	Semiannually
Sodium	mg/L	Semiannually[3]	Semiannually
Magnesium	mg/L	Semiannually[3]	Semiannually
Nitrate as N	mg/L	Semiannually[3]	Semiannually
Chromium	mg/L	Every 5 years	Every 5 years
Copper	mg/L	Every 5 years	Every 5 years
Arsenic	mg/L	Semiannually[3]	Semiannually
Bicarbonate	mg/L	Semiannually[3]	Semiannually
Iron	mg/L	Semiannually[3]	Semiannually
Manganese	mg/L	Semiannually[3]	Semiannually
Selenium	mg/L	Semiannually[3]	Semiannually
Nickel	mg/L	Every 5 years	Every 5 years
Zinc	mg/L	Every 5 years	Every 5 years

[1] The Discharger shall measure the groundwater elevation in each well **semi-annually**, determine groundwater flow direction, and estimate groundwater flow rates in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation monitored. The results shall be reported semiannually, including the times of expected highest and lowest elevations of the water levels in the wells, pursuant to Title 27, section 20415(e)(15).

[2] Piezometers FPZ-3, FPZ-4, FPZ-5, FPZ-6, and FPZ-7A shall be monitored for groundwater elevation only.

[3] Monitoring wells GWM-2, GWM-12, GWM-21, GWM-11 and GWM-26 shall be monitored annually.

2. Surface Water Monitoring

The Discharger shall operate a surface water detection monitoring system for any facility where runoff from waste management unit areas flows or could flow to waters of the United States. The monitoring system shall comply with the applicable provisions of Title 27, sections 20415 and 20420. At the Royal Mountain King Mine runoff from waste management unit areas flows and discharges to Littlejohns Creek. The current surface water detection monitoring system meets the applicable requirements of Title 27.

The current surface water monitoring points for the facility are:

Mon Pt.	Status
SWM-1	Littlejohns Creek – Upstream of FTR storm water runoff channel
SWM-2	Tributary to Littlejohns Creek – Downstream of Skyrocket Pit
SWM-6	Littlejohns Creek – Upstream of Skyrocket Pit
SWM-8	Unnamed drainage to Clover Creek, Downstream of West ODS
SWM-9	Gold Knoll Creek – Downstream Gold Knoll ODS
SWM-10	Littlejohns Creek Diversion – Downstream of Skyrocket Pit
SWM-13	Littlejohns Creek Diversion – Downstream of Skyrocket Pit
Love Pond Spring	Spring north of main haul road across from Love Pond

Flow data from all surface water flow gauging stations within or adjacent to the facility site shall be reported to the Regional Water Board on a semi-annual basis. For surface water detection monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the methods and frequency specified in the following table.

Table 2: Surface Water Monitoring

Parameters	Units	Monitoring Frequency	Reporting Frequency
Field Parameters			
Flow Rate	gpm	Semiannually	Semiannually
Dissolved Oxygen	mg/L	Semiannually	Semiannually
Temperature	^{o}C	Semiannually	Semiannually
Electrical Conductivity	umhos/cm	Semiannually	Semiannually
pH	pH units	Semiannually	Semiannually
Turbidity	NTU	Semiannually	Semiannually
Monitoring Parameters			
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Lab pH	pH units	Semiannually	Semiannually
Bicarbonate	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as N	mg/L	Semiannually	Semiannually
Arsenic	mg/L	Semiannually	Semiannually
Calcium	mg/L	Semiannually	Semiannually
Chromium	mg/L	Semiannually	Semiannually
Copper	mg/L	Semiannually	Semiannually
Iron	mg/L	Semiannually	Semiannually
Magnesium	mg/L	Semiannually	Semiannually
Manganese	mg/L	Semiannually	Semiannually
Nickel	mg/L	Semiannually	Semiannually
Selenium	mg/L	Semiannually	Semiannually
Sodium	mg/L	Semiannually	Semiannually
Zinc	mg/L	Semiannually	Semiannually

3. Skyrocket Pit and North Pit Water Monitoring

For Skyrocket Pit and North Pit detection monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the methods and frequency specified in the following table.

Table 3: Pit Water Monitoring

Parameters	Units	Monitoring Frequency[2]	Reporting Frequency
Static Water Level	Feet MSL	Semiannually	Semiannually
pH (field)	pH units	Semiannually	Semiannually
Temperature	^{o}C	Semiannually	Semiannually
Electrical Conductivity	umhos/cm	Semiannually	Semiannually
Lab pH	pH units	Semiannually	Semiannually
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Bicarbonate	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as N	mg/L	Semiannually	Semiannually
Arsenic[1]	mg/L	Semiannually	Semiannually
Calcium	mg/L	Semiannually	Semiannually
Iron	mg/L	Semiannually	Semiannually
Magnesium	mg/L	Semiannually	Semiannually
Manganese	mg/L	Semiannually	Semiannually
Nickel[1]	mg/L	Every 5 years	Every 5 years
Selenium[1]	mg/L	Semiannually	Semiannually
Sodium	mg/L	Semiannually	Semiannually
Zinc	mg/L	Semiannually	Semiannually

1 An appropriate Atomic Absorption (AA) method shall be used for analysis of this constituent.
2 The North Pit will be monitored annually until water is transferred from Skyrocket Pit to the North Pit. Following the transfer activities, North Pit monitoring will be increased to semi-annually.

4. ODS Seeps

Seepage from the West and Gold Knoll ODSs at the locations listed below shall be monitored quarterly for the constituents listed above in Table 2 excluding copper, chromium, and zinc.

Station	Location
Gold Knoll ODS Seep	Southwest side of Gold Knoll ODS
West ODS 2	West side of northern portion of West ODS
West ODS 5	Southeast of southern portion of West ODS

5. Flotation Tailings Reservoir (FTR) to Skyrocket Pit Water Quality Transfer Monitoring

In accordance with WDRs R5-2016-XXXX, leachate collected from the FTR LCRS shall be transferred to Skyrocket Pit or handled in some other manner consistent with Title 27, Section 20340 (g). If the Discharger chooses to transfer leachate to Skyrocket Pit then wastewater will be transferred directly from the FTR LCRS pump. The sampling station location will be the outlet pipe from the FTR to the Skyrocket Pit.

The following constituents shall apply to the Flotation Tailings Reservoir transfer water to Skyrocket Pit water quality monitoring station:

Table 4: FTR to Skyrocket Pit Water Quality Transfer Monitoring

Parameters	Units	Monitoring Frequency	Reporting Frequency
Pumping or flow rate	gpm	Daily	Semiannually
pH (field)	pH units	Monthly	Semiannually
Temperature	^{o}C	Monthly	Semiannually
Electrical Conductivity	umhos/cm	Monthly	Semiannually
Total Dissolved Solids	mg/L	Monthly	Semiannually
Sulfate	mg/L	Monthly	Semiannually
Sodium	mg/L	Monthly	Semiannually
Calcium	mg/L	Monthly	Semiannually
Magnesium	mg/L	Monthly	Semiannually
Bicarbonate	mg/L	Monthly	Semiannually
Chloride	mg/L	Monthly	Semiannually
Arsenic[1]	mg/L	Monthly	Semiannually
Chromium (Total)	mg/L	Monthly	Semiannually
Copper[1]	mg/L	Monthly	Semiannually
Nickel[1]	mg/L	Monthly	Semiannually
Selenium[1]	mg/L	Monthly	Semiannually

[1] An appropriate Atomic Absorption (AA) method shall be used for analysis of this constituent.

6. Skyrocket Pit to North Pit Water Quality Transfer Monitoring

In accordance with WDRs R5-2016-XXXX, if the Discharger cannot meet the requirements of the NPDES permit for discharge into Littlejohns Creek Diversion Channel and Skyrocket Pit is at risk of overflowing, the Discharger is allowed to reduce the Skyrocket Pit water level by transferring water to North Pit. In the event that transferring water to North Pit is necessary, the Discharger shall sample Skyrocket and the North Pits weekly beginning one week before water transfer operations begin and ending one week after water

transfer operations end. The samples shall be analyzed for the parameters listed in Table 4. Additionally, pumping rates and volumes shall be recorded daily during transfer operations.

7. Skyrocket Pit Treatment Monitoring

In accordance with WDRs R5-2016-XXXX, the Discharger may treat Skyrocket Pit with ferrous sulfate to reduce arsenic concentrations. If the Discharger chooses to treat Skyrocket Pit with ferrous sulfate, the Discharger shall monitor and/or sample Skyrocket Pit if required by Water Board staff and in accordance with all applicable requirements of this MRP. The samples shall be analyzed for the parameters listed in Table 4. Additionally, pumping rates, ferrous sulfate concentrations, and volumes shall be recorded daily during treatment operations.

8. LCRS Monitoring, Action Leakage Rate, and Annual LCRS Testing

LCRS Monitoring: The Discharger shall operate and maintain leachate collection and removal system (LCRS) sumps and conduct annual testing of each LCRS in accordance with Title 27 and this monitoring program.

The current LCRS leachate sump monitoring points are:

Mon Pt.	Unit Where Sump is Located
FTR Sump	FTR LCRS
LCRF Sump	LCRF LCRS
PWP Sump	PWP LCRS

All LCRS sumps shall be inspected semiannually for the presence of leachate, and flow shall be recorded in accordance with the following table.

Table 5: LCRS Monitoring

Parameters	Units	Monitoring Frequency	Reporting Frequency
Field Parameters			
Presence of leachate	observation	Semiannually	Semiannually
Flow Rate[1]	gallons/day	Semiannually	Semiannually
Electrical Conductivity	umhos/cm	Annually	Annually
pH	pH units	Annually	Annually
Monitoring Parameters			
Total Dissolved Solids	mg/L	Annually	Annually
Chloride	mg/L	Annually	Annually
Sulfate	mg/L	Annually	Annually
Nitrate as N	mg/L	Annually	Annually
Dissolved Metals (Barium, Copper, Lead)	ug/L	Annually	Annually
Volatile Organic Compounds	ug/L	Annually	Annually

[1] Flow in gallons per day from LCRS sump back to surface impoundment.

Annual LCRS Testing: All LCRSs shall be tested annually pursuant to Title 27, section 20340(d) to demonstrate proper operation. The results of these tests shall be reported to the Central Valley Water Board in the Annual Monitoring Report and shall include comparisons with earlier tests made under comparable conditions.

9. Facility Monitoring

a. Annual Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for liner systems; LCRS pumps, piping and control systems; drainage control systems; groundwater monitoring wells; and shall assess preparedness for winter conditions including but not limited to the required surface impoundment capacity and erosion and sedimentation control. The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. Annual facility inspection reporting shall be submitted as required in Section B.5 of this MRP.

b. Major Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all waste management unit berms for damage **within 7 days** following major storm events capable of causing damage or significant erosion. Freeboard in Skyrocket and North Pits shall be measured and recorded within 24 hours after onsite rainfall of greater than two inches in a 24 hour period. The Discharger shall take photos of any problems areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. Notification and reporting requirements for major storm events shall be conducted as required in Section B.6 of this MRP.

c. Rainfall Monitoring

The Discharger shall monitor and record onsite rainfall data using an automated rainfall gauge. Data shall be used in establishing the severity of storm events and wet seasons for comparison with design parameters used for waste management unit design and conveyance and drainage design. Daily data and onsite observation shall be used for establishing the need for inspection and repairs after major storm events. Rainfall data shall be reported in the semiannual monitoring reports as required by this MRP under “Reporting”.

B. REPORTING

The Discharger shall submit the following reports in accordance with the required schedule:

Reporting Schedule

Section	Report	End of Reporting Period	Due Date
B.1	Semiannual Monitoring Report	30 June, 31 December	**1 August, 1 February**
B.2	Annual Monitoring Report	31 December	**1 February**
B.3	Skyrocket Pit to North Pit Transfer Report	Continuous	**45 days following transfer period**
B.4	Annual Facility Inspection Report	31 October	**15 November**
B.5	Major Storm Event Reporting	Continuous	**7 days from damage discovery**
B.6	Financial Assurances Report	31 December	**1 June**

Reporting Requirements

The Discharger shall submit monitoring reports **semiannually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order No. R5-2016-XXX and the Standard Provisions and Reporting Requirements (particularly Section I: "Standard Monitoring Specifications" and Section J: "Response to a Release"). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made. In addition, the Discharger shall enter all monitoring data and monitoring reports into the online Geotracker database as required by Division 3 of Title 27.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility. Such records shall be legible and shall show the following for each sample:

a) Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;

b) Date, time, and manner of sampling;

c) Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

d) Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

e) Calculation of results; and

f) Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

Required Reports

1. **Semiannual Monitoring Report:** Monitoring reports shall be submitted semiannually and are due on **1 August** and **1 February**. Each semiannual monitoring report shall contain at least the following:

   a) For each groundwater monitoring point addressed by the report, a description of:

      1) The time of water level measurement;

      2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

      3) The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;

      4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and

      5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.

   b) A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

   c) The estimated quarterly groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)].

   d) Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, LCRS/leachate, surface water, Skyrocket and North Pits, Skyrocket Pit treatment, Skyrocket Pit to North Pit transfer monitoring, ODS seeps and FTR LCRS discharges to Skyrocket Pit. Concentrations below the laboratory reporting limit shall not be reported as “ND” unless the reporting limit is also given in the table. Otherwise they shall be reported “<” the reporting limit (e.g., <0.10). Units shall be as required in Tables 1 through 5 unless specific justification is given to report in other units. Refer to the SPRRs Section I “Standard Monitoring Specifications” for requirements regarding MDLs and PQLs.

   e) Laboratory statements of results of all analyses evaluating compliance with requirements.

   f) An evaluation of the concentration of each monitoring parameter as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit. Report any actions

taken under Section J: Response to a Release in the SPRRs for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.

g) A summary of all Facility Monitoring including onsite rainfall data for the reporting period required in Section A.9 of this MRP.

h) A summary of Skyrocket Pit treatment activities.

i) A summary of water transferred from Skyrocket Pit to North Pit.

j) Tabulated monthly quantities of water discharged to Skyrocket Pit from each ODS and the FTR LCRS.

k) Copies of the Division of Dam Safety inspection reports.

l) A summary of Skyrocket Pit ferrous sulfate treatment procedures, quantity of ferrous sulfate discharged into Skyrocket Pit, and tabulated Skyrocket Pit water quality data with associated analytical laboratory reports, if water quality data was requested by Board Staff during treatment.

2. **Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **1 February** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the second semiannual report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. Each Annual Monitoring Report shall contain the following additional information beyond what is required for semiannual monitoring reports:

a) All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

b) An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.

c) All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.

d) Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation

of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

e) A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

f) A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.

g) The results of the annual testing of the LCRS.

h) Updated concentration limits for each monitoring parameter at each monitoring well based on the new background data set.

3. **Skyrocket Pit to North Pit Transferring Report:** The Discharger shall submit a report to the Central Valley Water Board within **45 days** following the end of water transfer from Skyrocket Pit to North Pit, documenting the emergency transfer operations including: cause of the emergency, gallons of water transferred, tabulated water quality date with associated analytical laboratory reports, summary of the changes to North Pit water quality, and a list of best management practices to implement to reduce the potential for future emergency transfer operations.

4. **Annual Facility Inspection Reporting:** By **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.9.a of this MRP, above.

5. **Major Storm Event Reporting:** The Discharger shall notify Central Valley Water Board staff within 24 hours after a storm event of greater than two inches in 24 hours as to the status of freeboard in Skyrocket and North Pits. The Discharger shall also notify Central Valley Water Board staff within **7 days** after major storm events of any damage or significant erosion and report any needed repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.9.b of this MRP above for requirements for performing the inspection and conducting the repairs.

6. **Financial Assurances Report:** By **1 June** of each year, the Discharger shall submit a report to the Central Valley Water Board that reports the balance of both the closure and corrective action funds or the amounts of the Guarantees and the adjustments to account for inflation in accordance with Title 27 Section 22236. Refer to Financial Assurances Specifications F.1 through F.3 of the WDRs.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit, the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each constituent of concern, the

verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard other than annual update of the concentration limits shall be submitted in a report for review and approval.

The report shall:

a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.

b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.

c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).

e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. 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 site, the Discharger may request modification of the Water Quality Protection Standard.

The Discharger proposed the methods for calculating concentration limits in the July 2015 *Water Quality Protection Standards* in Appendix K of the Report of Waste Discharge. The limits are calculated using Intrawell tolerance limits at

95% confidence and 95% coverage based on the historical monitoring data at each surface and groundwater point of compliance. Non-detect results were replaced by one-half of the detection limit for calculations.

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in the tables in Section A of this MRP specified monitored medium.

3. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or

b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

The methods for calculating concentration limits were included in the *Water Quality Protection Standards* in Appendix K of the Report of Waste Discharge submitted July 2015. The limits are calculated using Intrawell tolerance limits at 95% confidence and 95% coverage based on the historical monitoring data at each surface and groundwater point of compliance. Non-detect results were replaced by one-half of the detection limit for calculations.

The most recent concentration limits for select parameters as reported in the *Water Quality Protection Standards* in Appendix K of the Report of Waste Discharge submitted July 2015 were as follows:

Monitoring Location	Analysis Type	pH (Std units)	TDS[1] (mg/L)[2]	Sulfate (mg/L)	Nitrate as N (mg/L)	Arsenic (mg/L)	Selenium (mg/L)
GWM-9	Intrawell	8.3 - 8.9	2,370	480	0.04	0.012	0.0003
GWM-10	Intrawell	7.9 - 8.3	10,000	3,230	0.090	0.010	0.0026
GWM-11	Intrawell	7.9 - 8.2	1,500	740	14.8	0.002	0.0148
GWM-15	Intrawell	7.7 - 8.3	680	210	1.96	0.006	0.0027
GWM-19	Intrawell	7.5 – 8.0	3,260	1,980	20.5	0.004	0.0499
GWM-20	Intrawell	7.7 - 7.9	13,900	3,860	0.35	0.02	0.0007
GWM-24	Intrawell	8.1 - 8.4	1,200	520	0.19	0.020	0.0128
GWM-25	Intrawell	7.7 - 8.3	1,580	700	0.05	0.011	ND (<0.0001)
GWM-26	Intrawell	8.0 - 8.4	360	30	15.7	0.001	0.0013

Monitoring Location	Analysis Type	pH (Std units)	TDS[1] (mg/L)[2]	Sulfate (mg/L)	Nitrate as N (mg/L)	Arsenic (mg/L)	Selenium (mg/L)
GWM-30	Intrawell	7.8 - 8.4	2,970	1,740	11.4	0.006	0.0329
GWM-31	Intrawell	7.9 - 8.1	8,790	2,860	5.0	0.047	0.0304
GWM-32	Intrawell	7.9 - 8.2	490	100	2.8	0.002	0.0026
GWM-33	Intrawell	8.1 - 8.3	260	50	3.8	0.004	0.0009
GWM-34	Intrawell	8.1 - 8.4	460	170	5.0	0.003	0.0030
GWM-37	Intrawell	8.0 - 8.4	690	200	0.08	0.022	0.0002
PZ-1	Intrawell	8.2 - 8.5	500	65	0.09	0.015	0.0021
PZ-4	Intrawell	7.8 - 8.3	2,428	1,200	1.228	0.00394	0.0226
SWM-1	Intrawell	8.1 - 8.3	152	18.8	1.278	0.00029	0.00018
SWM-2	Intrawell	8.062 - 8.098	2,722.5	1,260	2.3	0.005	0.0065
SWM-6	Intrawell	7.7885 - 8.415	292.5	124.45	2.75	0.003495	0.03
SWM-8	Intrawell	6.497 - 7.985	2,206.5	904	1.155	0.00199	0.00343
SWM-9	Intrawell	8.052 - 8.584	934	432	0.217	0.00157	0.00106
SWM-10	Intrawell	7.67 - 8.3	3,410	1,652	1.0475	0.007575	0.00351

[1] Total Dissolved Solids
[2] Milligrams per liter

4. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Standard Monitoring Specification I.43 of the SPRRs, then:

a. For analytes that are detected in less than 10% of the background samples (such as non-naturally occurring constituents), the Discharger shall use the non-statistical retesting procedure required in Standard Monitoring Specification I.44 of the SPRRs.

b. For analytes that are detected in 10% or greater of the background samples (naturally occurring constituents), the Discharger shall use one of the statistical retesting procedure as required in Standard Monitoring Specification I.45 of the SPRRs.

5. Point of Compliance

The point of compliance for the water standard at each waste management unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the unit. For waste management units located within the de-designation and variance area, the point of compliance is considered the vertical surface located at the hydraulically downgradient limit of the de-designation and variance area that extends through the uppermost aquifer underlying the de-designation and variance area. The following are monitoring locations at the point of compliance:

Cell or Module	Point of Compliance Monitoring Wells
LCRF and PWP	GWM-25
North Pit	None
BPA Zone	GWM-9, GWM-10, GWM-31, GWM-32, PZ-1

Wells within the BPA de-designation area not identified as Point of Compliance wells may be used for investigative purposes, but not for purposes of Title 27 investigative or corrective action. There are no groundwater wells in the current groundwater monitoring network that would make an appropriate Point of Compliance well for the North Pit. The closest downgradient well to the North Pit is GWM-30R. GWM-30R has been impacted from mining operations and is directly downgradient from the FTR making it difficult to discern water quality changes from the North Pit in this well. When mine impacted water is transferred from Skyrocket Pit to the North Pit a new Point of Compliance may need to be identified for the North Pit.

6. Compliance Period

The compliance period for each waste management unit shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program [Title 27, section 20410].

7. Monitoring Points

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

D. TRANSMITTAL LETTER FOR ALL REPORTS

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____
(Date)

AAH/WMH