CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0900

TIME SCHEDULE ORDER REQUIRING

MERIDIAN BEARTRACK COMPANY
MERIDIAN GOLD COMPANY
AND FELIX MINING COMPANY
ROYAL MOUNTAIN KING MINE FACILITY
CALAVERAS COUNTY

TO COMPLY WITH REQUIREMENTS PRESCRIBED IN
REGIONAL WATER BOARD ORDER NO. R5-2001-0040 AND
STATE WATER BOARD ORDER NO. 97-03-DWQ (NPDES PERMIT CAS000001)

The Executive Officer of the California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

REGULATORY BACKGROUND

1. On 15 March 2001, the Regional Water Board adopted Closure Waste Discharge Requirements (WDRs) Order No. 5-01-040 prescribing requirements for the Royal Mountain King Mine (RMKM), which is owned and operated by Meridian Beartrack Company, Meridian Gold Company, and Felix Mining Company (hereafter jointly known as Discharger).

2. WDRs Order No. 5-01-040 provides, in part, the following:

   *"**A. DISCHARGE PROHIBITIONS***

      2. The discharge of waste to groundwater, surface water, or surface water drainage courses is prohibited except as specified by this Order.

   B. DISCHARGE SPECIFICATIONS

      1. The treatment or disposal of waste shall not cause pollution or a nuisance as defined in the California Water Code, Section 13050.

      2. The discharge of wastes shall not cause water quality degradation by allowing a statistically significant increase over background or baseline concentrations.

      3. Waste materials shall be confined to the waste management units designated for that waste as shown on Attachment B except as specified by this Order.

3. There are three areas within the Overburden Disposal Sites (ODSs) where underflow, infiltration, and surface runoff are captured (captured flows). The captured flows contain metals and salts. The underflow flow component is natural and considered authorized non-storm water. This underflow, or springs associated with these flows, emerge in the winter when the groundwater table reaches land surface at base of the canyons. Infiltration is rainfall that migrates through the ODS rock, and is a portion of the captured flows. In order to prevent discharges of infiltration flows to surface waters, the Discharger collects the captured flows and recirculates these flows for evaporation back on top of the ODSs using spray systems.

4. In November 2004, the Discharger proposed revisions to its Storm Water Pollution Prevention Plan (SWPPP) to cover the winter discharges that may occur under its General Industrial Storm Water Permit. In March 2005, staff responded that the discharge of ODS captured flows to surface waters cannot be covered by the General Industrial Storm Water Permit. By letter dated 29 November 2005, the Discharger states that its existing ODS recirculation systems may pose a threat to water quality when operated in conjunction with severe wet weather conditions.

5. An interim transfer of captured flows to Skyrocket Pit Lake was therefore deemed necessary to avoid the potential for discharges from the recirculation systems or the areas where the captured flows are collected, and to protect water quality. Because the Regional Water Board was unable to consider the amended WDRs prior to the 2005-2006 rainy season, the Discharger requested in its 29 November 2005 letter that it be allowed to transfer collected ODS water to Skyrocket Pit Lake pursuant to a Time Schedule Order (TSO).

6. On February 2, 2006, the Executive Officer issued TSO No. R5-2006-0900, allowing the requested transfer of captured flows from the ODS recirculation systems for a short time period, extending to 30 June 2007, to (a) prevent uncontrolled discharge from the ODS springs (*captured flows*) to surface waters during rain events; and (b) collect data to evaluate the water quality effects of the transfer on the surface and groundwater in the vicinity of Skyrocket Pit Lake. Such data was necessary to support a future NPDES permit and/or modifications to the WDRs, as well as to evaluate whether it is appropriate to authorize a long-term transfer of the captured flows to Skyrocket Pit Lake. TSO No. R5-2006-0900 requires that transfers of captured flows shall discontinue if either of the following occur: (a) the freeboard in Skyrocket Pit Lake, as measured at the lowest point of overflow at the dam spillway, is less than or equal to two feet; or (b) salts and/or metals concentrations increase in Littlejohns Creek Diversion or Littlejohns Creek to a statistically significant level. Where TSO No. R5-2006-0900 and TSO No. R5-2007-0900 conflict regarding Skyrocket Pit Late freeboard or water quality impacts on Littlejohns Creek, TSO No. R5-2007-0900 shall supercede the previous TSO.

7. The Discharger has in place a SWPPP, implementing State Water Resources Control Board Water Quality Order No. 97-03-DWQ (General Industrial Storm Water Permit) that includes Best Management Practices (BMPs) to minimize the contact of storm water and authorized non-storm water with wastes and wastewater. The BMPs include diversion, surface ditches and subsurface sumps to isolate clean runoff from poor quality water that is collected and managed (captured flow), recirculation and spray evaporation systems to dispose of the captured flow, and seasonal storage of the captured flow in Skyrocket Pit Lake, which is filled with rainfall and runoff, ground water and wastewater that was transferred in the past. Maintenance of drainage systems and erosion controls are also included as BMPs.

8. The Discharger submitted an NPDES permit application on 29 September 2005 and a final Alternatives Analysis in support of that permit application received on 6 October 2006 after this analysis was requested by the Regional Water Board staff. The NPDES permit application proposes to permanently address water management at RMKM by regulating the discharge of water from Skyrocket Pit Lake. Regional Water Board staff is presently evaluating the Discharger's NPDES permit application. Because the Regional Water Board will be unable to issue a final NPDES permit prior to the beginning of the 2006-2007 rainy season, the Discharger has requested that it be allowed to implement the contingency measure outlined in its Water Management Report (RMK Mine Closure – TSO R5-2006-0900: 2006/07 Winter Water Management Plan Update And Site Data Evaluation Report - prepared by Strategic Engineering & Science, Inc., November 8th, 2006) under a TSO and in accordance with the requirements of the General Industrial Storm Water Permit.

9. The Water Management Report states that the interim transfer of captured flows to Skyrocket Pit Lake has resulted in the increased storage of water in Skyrocket Pit Lake and that the increased volume of water threatens to cause uncontrolled flow over the dam spillway in the event of extreme wet weather conditions during the 2006-2007 rainy season ending May 31, 2007. As a result, the Water Management Report proposes an interim contingency measure to protect the water quality in Littlejohns Creek from uncontrolled releases from the SPL in the event extreme weather conditions are experienced. Specifically, the Discharger requested that, under controlled conditions and in compliance with interim water quality standards, it be permitted to initiate emergency releases of storm water to prevent uncontrolled overflows across the spillway of SPL.

10. The <u>uncontrolled</u> release of SPL water has the potential to impact the quality of Littlejohns Creek as demonstrated by the water quality information provided in the table below. However, <u>interim controlled</u> releases from SPL to Littlejohns Creek can be performed in a manner that does not cause exceedances of applicable water quality standards in Littlejohns Creek. Controlled releases during flood conditions in Littlejohns Creek can be mixed to meet interim water quality standards; whereas uncontrolled releases will continue to occur during lower flows in Littlejohns Creek between rain storm events, and have the potential to significantly increase concentrations to above the interim water quality standards. The Regional Water Board proposes to apply the Interim Water Quality

Standards provided in Attachment B, No. 8, and which were developed by the Discharger (Royal Mountain King Mine: Alternatives Analysis Report-Management of Spring and Pit Lake Water, prepared by SES Inc., September 30,2006), and summarized in Attachment A.

11. Title 27 requires that Waste Management Units (WMUs) that contain wastes which have the potential to impact water quality (Group B wastes) have the ability to contain 24-hour rain events that occur once in 1,000 years. Model predictions performed by the discharger (Water Management Report, Page 1) show that an uncontrolled release can occur from SPL during a wet season corresponding to the one-in-20 year event. Once the uncontrolled releases occurs it will probably continue for a period of several days or weeks after the rainfall has subsided, because of continuing groundwater inflows and the transferred captured flows into the SPL. During this period, flows in Littlejohns Creek that can dilute the released flows from the SPL would have subsided substantially, resulting in a significant increase of salts and other constituents in Littlejohns Creek. The discharger has evaluated other alternatives including treatment, cessation of the transferred captured flows, and transfer of SPL or captured flows to North pit. The discharger has concluded that none of the evaluated alternatives present a viable interim alternative for minimizing water quality impacts

REGULATORY CONSIDERATIONS

12. Section 13300 of the California Water Code (CWC) states: "*Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements*."

13. Section 13267(b) of the CWC 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 discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

14. The General Industrial Storm Water Permit *"authorizes storm water and authorized non-storm water discharges from facilities that are required to be covered by a storm water*

permit" and *"prohibits discharges of material other than storm water (non-storm water discharges) that are not authorized by the permit and discharges containing hazardous substances in excess of reportable quantities established at 40 CFR 117.3 and 40 CFR 302.4."* The General Industrial Storm Water Permit requires the control of pollutant discharges using best available technology economically achievable and best conventional pollutant control technology to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards.

15. The technical reports required by this Order are necessary to ensure compliance with this Time Schedule Order, WDRs Order No. No. 5-01-040, TSO No. R5-2006-0900, the General Industrial Storm Water Permit, all applicable provisions of the California Water Code and CCR Title 27, and to ensure the protection of the public health and safety. The Discharger owns and operates the facility that discharges waste subject to this Order.

16. This Time Schedule Order was requested by the Discharger to regulate the procedure for initiating a discharge of water from Skyrocket Pit Lake, performing the discharge in the event a discharge becomes necessary, and monitoring to ensure that any discharge does not cause an exceedance of downstream interim water quality objectives. Issuance of this Order does not constitute acceptance of the interim discharge measure or interim limitations as a long-term solution for water quality issues related to the Mine. Water quality issues related to surface water discharges to Little Johns Creek will be evaluated through the ongoing NPDES Permit process.

17. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act, pursuant to Section 15321(a) (2), Title 14, and California Code of Regulations.

18. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions are available at http://www.waterboards.ca.gov/water_laws/cawtrcde/wqpetition_instr.html and will also be provided upon request.

IT IS HEREBY ORDERED THAT pursuant to CWC Sections 13300 and 13267, Meridian Beartrack Company, Meridian Gold Company, and Felix Mining Company shall comply with the following time schedule to ensure future compliance with WDRs Order No. 5-01-040, TSO No. R5-2006-0900, State Water Board Order No. 97-03-DWQ (NPDES Permit CAS000001), and Title 27 California Code of Regulations (CCR):

Any person signing a document submitted under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the

information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

1. By **1 March 2007**, the Discharger shall submit a *Contingency Measure Water Management and Monitoring Plan*. The Plan shall describe the operational changes, best management practices and monitoring requirements, as described in Attachment B, which is attached hereto and made part of this Order by reference.

2. The Discharger shall notify the Regional Water Board (verbally or by e-mail) within 24 hours of initiating an emergency discharge and within 24 hours of ceasing the discharge. Within 30 days after the cessation of each emergency discharge, the Discharger will submit a full report to the Regional Water Board.

In addition to the above, the Discharger shall comply with existing WDRs Order No. 5-01-040, TSO No. R5-2006-0900, State Water Board Order No. 97-03-DWQ (NPDES Permit CAS000001), and all applicable provisions of the California Water Code and CCR Title 27 that are not specifically referred to in this Order.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order may result in the assessment of an Administrative Civil Liability up to $1,000 per day or up to $10,000 per day of violation, depending on the violation, pursuant to the California Water Code, including sections 13268, 13271, and 13350. The Regional Water Board reserves its right to take any enforcement actions authorized by law.

This Order is effective upon the date of signature.

Pamela C. Creedon
Executive Officer

6 February 2007
(Date)

Parameter	**SPL Releases and Median Water Concentrations**	**Littlejohns Creek Median Concentrations and Flows Without a SPL Release**		**Description of Impacts**
		During Flood Conditions	**Low Flows In Between Rain Storm Events During Rainy Season**	
Typical Flow Rates	<u>Uncontrolled:</u> From 0 to several 10,000s gpm, depending on storm intensity. <u>Controlled:</u> Between 0 and 10,000 gpm and is set to allow sufficient dilution in Littlejohns Creek to meet water quality objectives.	Greater than Low Flows, and can reach 600,000 gpm or more.	Typically 1,000 to 4,000 gpm.	During large storm events the uncontrolled or controlled releases from SPL would not measurably increase flood levels or flow velocities in Littlejohns Creek and would not cause any increased erosion downstream.
Total Dissolved Solids (TDS) – mg/L	2,460	200	1,060	During uncontrolled releases TDS concentrations in Littlejohns Creek would increase due to mixing with higher TDS water from SPL; 2,460 mg/L compared to 1,060 mg/L. During controlled releases these increases would be limited and would be maintained below the Interim Water Quality Standard of 1,000 mg/L.

Parameter	**SPL Releases and Median Water Concentrations**	**Littlejohns Creek Median Concentrations and Flows Without a SPL Release**		**Description of Impacts**
		During Flood Conditions	**Low Flows In Between Rain Storm Events During Rainy Season**	
Arsenic – mg/L	0.103	0.0017	0.0032	During uncontrolled releases arsenic concentrations in Littlejohns Creek would increase due to mixing with higher arsenic water from SPL and could cause exceedances of the Interim Water Quality Standard 0.017 mg/L. During controlled releases these increases would be limited and would be maintained below the Water Quality Objective.
Nitrate– mg/L	4.4	0.96	0.35	During uncontrolled releases, nitrate concentrations in Littlejohns Creek would increase due to mixing with higher nitrate water from SPL; 4.4 mg/L compared to 0.35 mg/L, but would not cause an exceedance of the Interim Water Quality Standard of 5 mg/L. During controlled releases these increases would be lessened.

Parameter	**SPL Releases and Median Water Concentrations**	**Littlejohns Creek Median Concentrations and Flows Without a SPL Release**		**Description of Impacts**
		During Flood Conditions	**Low Flows In Between Rain Storm Events During Rainy Season**	
Selenium– mg/L	0	Not Detected	0.002	During uncontrolled releases, selenium concentrations in Littlejohns Creek would increase due to mixing with higher selenium water from SPL; 0.01 mg/L compared to 0.002 mg/L but would not cause exceedances of the Interim Water Quality Standard of 0.011 mg/L. During controlled releases these increases would be lessened.
Zinc– mg/L	0.024			

Attachment B
Time Schedule Order No. R5-2007-0900

Operational Changes and Monitoring Requirements to be Incorporated in Contingency Measure Water Management and Monitoring Plan

This attachment contains the operational changes which are required to be incorporated under Time Schedule Order No. R5-2007-0900.

Operational Changes and Monitoring Requirements:

The Discharger shall:

1. Minimize use of the available storage between the freeboard level in Skyrocket Pit Lake (SPL) (i.e., two feet below the spillway crest level), for storage of water and captured ODS flows this winter. Continue to transfer captured flows to the SPL as necessary when the SPL level is above the freeboard level.

2. Minimize the discharge of wastewater to Littlejohns Creek by:
    a. diverting stormwater away from areas of potential contact with wastes so that the stormwater can be discharged directly to Littlejohns Creek,
    b. maximizing the land disposal of wastewater,
    c. applying reasonable management practices and technology to enhance evaporation of wastewater, and
    d. continuing to apply captured ODS water on top of each ODS during the dry season.

3. Establish and install a monitoring system that will be used to analyze and detect flows in Littlejohns Creek during high flow periods and to analyze downstream water quality in the event that an emergency discharge becomes necessary.

4. Report the SPL water balance and level projections at the end of each month. Each time, reassess the risk of flow occurring over the spillway.

5. Identify a supplier of a 10,000 gpm pump and discharge pipeline that can mobilize the equipment to site within a one week period and secure access to that equipment for the 2006-2007 rainy season.

6. Mobilize the pumps if the SPL level reaches two feet below the spillway crest and there is a forecast of additional precipitation.

7. Under controlled conditions, and in compliance with Interim Water Quality Standards (Attachment B, No. 8) initiate an emergency discharge from SPL when its level exceeds two feet below the spillway crest, and before the lake level overflows the spillway.

Utilize the following Interim Water Quality Standards: TDS of 1,000 mg/L, arsenic of 0.0017 mg/L (current background levels), and nitrate of 5 mg/L to be met downstream of the point of complete mixing.

The Alternative Analysis Report concludes that meeting these standards will ensure all other constituent standards are met. These values are based on Interim Water Quality Standards that are proposed in the Alternative Analysis Report.[1]

The system to measure high flows in Littlejohns Creek will be used to calculate appropriate SPL discharge water pumping rates. The system will be located at the existing SWM-15[2] stream gauging weir, which can accurately measure relative flows up to approximately 400 cubic feet per second (cfs), or 130,000 gpm. Equations are available to estimate higher flows at a reduced accuracy.

The 130,000 gpm threshold value is significant. At or above these flows, and at the proposed maximum discharge rate of 10,000 gpm from SPL, this value achieves a blending ratio of 12 or more and meets the receiving interim water TDS standard of 1,000 mg/L.

Monthly updates of SPL water balance projections will be submitted to the Regional Water Board and will be used to forecast:

- The likelihood of the SPL level reaching the spillway crest level during the following month;
- The amount of time it would take to reach this level based on current levels;
- Confirm the Trigger Level at which the emergency discharge pumping system should be mobilized.

The exact amount that can be discharged, and the period over which it can be discharged, depends on the adequacy of the flow in Littlejohns Creek, as it would be the Discharger's intent to meet the 1,000 mg/L TDS Interim Standard in the receiving water. The Discharger will also target to reduce SPL levels to more than two (2) feet below the spillway crest elevation. At 10,000 gpm, it would take approximately 30 hours to reduce the pit lake level by one (1) foot.

Site personnel will be trained to operate this equipment to meet receiving water quality objectives. The procedures will include:

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[1] *Strategic Engineering and Science (SES) Inc., Royal Mountain King Mine Alternatives Analysis Report – Management of Spring and Pit Lake Water, Prepared for Meridian Beartrack, Inc., Prepared by Strategic Engineering and Science, Inc., September 30, 2006.*

[2] *SWM-15 requires re-calibration for low flows, not the high flows that are expected to occur during an emergency release.*

- Prior to discharge, the conductivity of the Littlejohns Creek water just upstream of the discharge point will be measured at least twice and at least ½ hour apart. A water sample will be collected and analyzed in a certified laboratory for as a minimum, the constituents listed in Attachment A.

- Discharge will occur when the SPL level reaches or exceeds two feet below the spillway crest as confirmed by the monthly water balance assessments, and there is sufficient dilution to meet or exceed the Interim Standard of 1,000 mg/L TDS or 1,400 umhos/cm conductivity. Meeting the Interim TDS Standard is expected to also meet the arsenic and nitrate interim standards, and will be confirmed by sampling.

- During the discharge period, the discharge flows will be checked and adjusted on an hourly basis, and flows at gauge SWM-15, conductivity in Littlejohns Creek up- and downstream of the discharge point and the SPL discharge flow will be measured hourly.

- Water samples will be collected from the discharge and from both up-stream and down-stream in Littlejohns Creek at least once per day during the discharge. The downstream sampling location shall be located a minimum of 300 yards downstream from the point of discharge. The samples will be analyzed in a certified laboratory for as a minimum, the constituents listed in Attachment A. Pit lake water samples will be collected once prior to initiating discharges and analyzed for the same constituents.

The total amount of water discharged will equal the lesser of that which can be discharged during a storm event while meeting the water quality standards, or sufficient to reduce the SPL level to 2.5 feet below the spillway crest level.

After the emergency discharge is completed, the Discharger will revert to the normal operating procedures with the changes noted above and continue the monthly SPL water balance and level projections. If necessary the emergency discharge procedure can be repeated.