

**RMR Aggregates, Inc.**



Mid-Continent Quarry

**STORMWATER MANAGEMENT PLAN**

**In Conformance with the Guidelines set by:**

Colorado Department of Public Health and Environment

Water Quality Control Division

Prepared for:

RMR Aggregates, Inc.

Date:

July 2019



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## **STORMWATER MANAGEMENT PLAN (SWMP)**

<b>Facility Name:</b>	Mid-Continent Quarry
<b>Facility Type:</b>	Limestone Quarry
<b>Date Initial Operations Started:</b>	1982
<b>Facility Mailing Address:</b>	RMR Aggregates, Inc. 4601 DTC Blvd, Suite 130, Denver, CO 80237 720-614-5213
<b>Facility Location Address:</b>	Mid-Continent Quarry 1001 Transfer Trail Glenwood Springs 81601
<b>Stormwater Administrator</b>	Robert Wagner Office: 720-614-5213 Emergency: 720-614-5213

This plan was created using sound engineering practices by Ben Langenfeld of Greg Lewicki and Associates on 7/1/2019. Greg Lewicki and Associates is located at 3375 West Powers Circle, Littleton, CO 80123. Phone: (303) 346-5196.

**Permittee Certifying Statement:**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Name:**

**Company:**

**Title:**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## **I. INTRODUCTION**

This Stormwater Management Plan is prepared to mitigate potential impacts to Waters of the U.S. (Colorado River) resulting from the operations at the Mid-Continent Quarry by RMR Aggregates, Inc. in Garfield County, Colorado. Water quality, drainage, monitoring and pollution control are addressed in this Plan. Adherence to this plan will allow RMR Aggregates, Inc. to contain potential pollutants on the site and have a plan of action for minimizing the risk of contaminating surface waters. This Plan includes stormwater, process water and groundwater.

### **Key Elements of this Plan**

- **Process Water** (water used for rock washing, dust control, and surface runoff) shall be contained within disturbed areas with sumps and sediment ponds. The active mining bench sump will typically not discharge. Occasional discharges due to large runoff events will occur. Process water on the mill level will be contained in the sediment pond on that level. Discharges from any sump or pond will only take place following settling of sediment in said sump or pond. Water is recycled as much as possible on-site, further reducing discharge. The SWMP Maps show the location of all stormwater control structures and discharge points.
- **Stormwater** from rainfall or snowmelt shall be contained within sediment ponds and sumps. The active mining bench will have sufficient sump capacity to contain the stormwater runoff of the bench and immediate upslope disturbed areas. The nature of the mining sequence will regularly renew the location of the sump, negating the need for most maintenance and cleanout. The mining bench sump will be able to be pumped out to the main drainage on the existing hillside. This discharge will take place if a particularly large runoff event necessitates it. All stormwater from the mill level will be trapped in the sediment pond located on said level. This sediment pond will be in existence the entire life of the operation and will discharge offsite through an approved discharge point. Periodic inspections of the sediment pond will be made. Maintenance will take place as needed to maintain the necessary capacity and freeboard for the sump to operate effectively.
- Any discharge to surface waters or to groundwater will be regulated through the National Pollutant Discharge Elimination System (NPDES) for discharges associated with aggregate production operations for stormwater and process water and requires a permit. RMR Aggregates, Inc. will maintain a Discharge Permit with Colorado Department of Public Health and Environment to allow discharge of **Process Water** from the pit.
- Any discharge of from the site shall be sampled and tested for any and all analytes as dictated by the CDPHE Discharge Permit. The person sampling the discharge shall evaluate the flow rate and look for the presence of any oils (oily sheen).
- The only acceptable methods of managing on-site stormwater runoff are to contain it for **Use in Operations**, for **Infiltration** into the ground, for **Evaporation** into the

air, or **Discharge** to the River.

- **Sediment is classified by the State as a potential pollutant** that can negatively affect the quality of stormwater discharges. Loose sediment from mining, removal of topsoil, rock washing, etc. will be contained on-site completely and not be allowed to be carried off-site by stormwater. Miscellaneous stormwater structures will be maintained onsite to control stormwater.
- The best method of managing site runoff water quality is to **remove and properly dispose of any site contaminants** that could be transported by stormwater runoff. All activities that could produce pollutants will be restricted to specific areas or have secondary containment. The designated areas for this site are on the active mining bench and the mill level. Equipment and vehicle maintenance shall be performed over hard-packed gravel, hard rock, or paved areas graded that drain to a specific collection area. See the SWMP Maps for the location of these areas. Drips, leaks and spills will be cleaned up regularly. Equipment washing will be restricted to a portion of the active mining bench or mill level which will drain to the sump on said bench/level. More detail on these items is provided later in this Plan.
- All fuel tanks, petroleum product storage and other chemicals will be regulated under the SPCC plan for the site.

## **II. INDUSTRIAL ACTIVITY DESCRIPTION**

### **A. GENERAL**

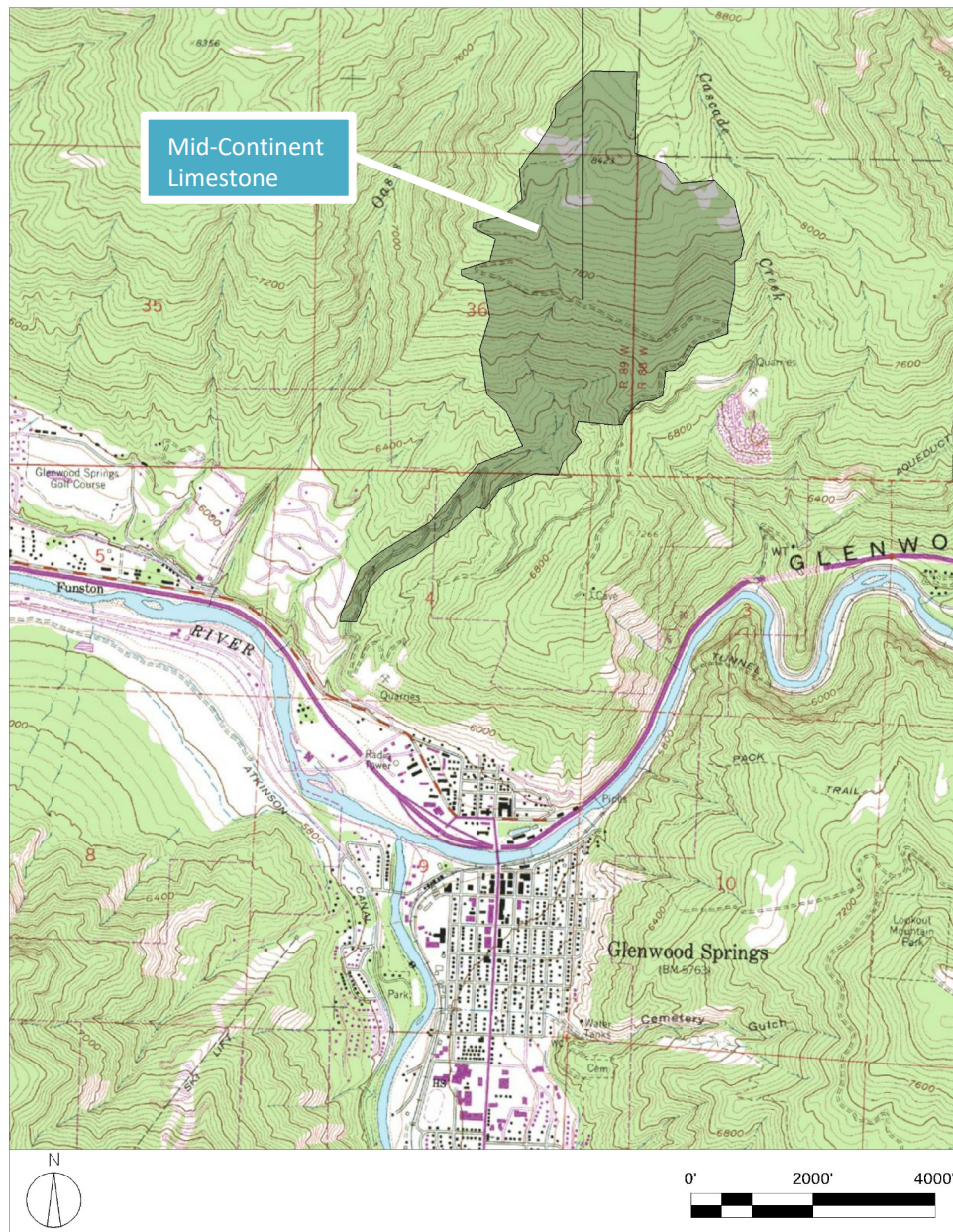
#### **Project Name and Location**

Mid-Continent Quarry  
1001 Transfer Trail  
Glenwood Springs 81601

The proposed Mid-Continent Quarry is a limestone quarry operation located 2 miles north of Glenwood Springs, Colorado. See the **General Location Map** for the location of the site. The site is bordered by public lands in all directions. These lands are all alpine forests and open land.

The bulk of the property is located in Section 36 and 13, Township 5 South, Range 88 West, 6th P.M.

## General Location Map



### **Owner Name and Address**

The Mid-Continent Quarry is operated and owned by:

RMR Aggregates, Inc.  
4601 DTC Blvd, Suite 130,  
Denver, CO 80237  
720-614-5213  
Contact Person: Robert Wagner

### **Site Description**

The Mid-Continent Quarry is a limestone quarry operation located 2 miles north of Glenwood Springs, Colorado.

The limestone deposit is approximately 175 feet thick and is overlain by soil and overburden ranging from 0 to 48 inches. The entire operation takes place within the limestone deposit, which sits atop the hill knob located between Cascade and Oasis Creeks. Surface water drainage for the site is toward the Colorado River. No portions of the site are located within the 100 year flood plain. The total permit area is 447 acres.

Primary crushing and screening on the active mining bench is portable and moves throughout the site as active mining moves across the site. Some processing takes place in the mill building on the mill level. Production of stone products for the local market also takes place on the mill level. See the SWMP Maps for locations.

### **B. STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES**

<b>SIC CODE</b>	<b>INDUSTRY DESCRIPTION</b>
1422	Mining and Processing of Crushed Limestone

### **C. DESCRIPTION OF OPERATIONS**

RMR Aggregates, Inc. will conduct aggregate operations under a Division of Mining, Reclamation and Safety Permits (M-1982-121).

RMR Aggregates, Inc. is permitted for the following uses on the Mid-Continent Quarry:

- Mining, crushing, screening/washing, and stockpiling of limestone;
- Storage and maintenance of heavy equipment.

Facilities include crushing/screening, equipment storage, and fuel storage. Brief descriptions of these operations are provided below:

#### **MINING OF THE PIT**

Mining of the limestone is conducted via drilling and blasting followed by excavation by loaders of the blasted material. This blasted material is then loaded into the primary crusher/screener plant located on the active mining bench. Material is then transported

down to the mill bench for further processing. Since the limestone deposit sits at an angle atop the hill knob, facing the south, mining consists of mining horizontal slices of the limestone deposit from the top down, in roughly 25-foot-tall benches. Each bench covers the exposed limestone from the natural visual berm on the front (south) side to the underlying rock on the back slope (north) side. See the SWMP Maps for further details.

### **Fuel Storage**

Fuel is located on-site to serve construction and mining equipment, generators and other miscellaneous equipment. Storage of diesel and gasoline is necessary to support operations. All storage tanks are above ground and are surrounded by isolation berms or have double walls to contain spills if they occur. Spills and drips outside of isolation berms will be removed when identified on daily inspections. The main fuel storage area is located outside the 100 year floodplain. A separate SPCC Plan will be prepared for this site.

The fuel tanks located onsite will consist of the following:

- 1) A pair of 10,000-gallon tanks for off-highway diesel will be located at the mill level. Each tank will be double-walled. A fuel truck will take diesel from these tanks to supply equipment on the production bench.
- 2) A single, 2,000-gallon off-highway diesel tank will be located on the production bench. This tank will be double-walled and mounted on a mobile flat trailer for easy transportation. This tank will provide fuel for production bench equipment in the event of a disruption of the fuel truck from the mill bench.
- 3) Used oil in drums will be kept within a shipping container at the mill level. Used oil will be transferred to the drums by hand.

Small containers of oil and lubricants will be stored in the shipping container with the used oil drums. The container will provide the secondary containment. All other tanks are directly associated with portable plants and are covered by their SPCC plans.

### **Chemical Storage**

No additional chemical storage takes place at Mid-Continent Quarry.

### **Shop/Equipment Maintenance Activities**

All equipment maintenance occurs outside and takes place at the mill level. Vehicles and equipment may be rinsed on-site as needed. Runoff from equipment washing is collected in the same stormwater controls as the rest of the site runoff in the area where washing takes place.

## **D. BASIN DESCRIPTIONS FOR AREAS OF INDUSTRIAL ACTIVITY**

### **Drainage Basins to site discharge points**

A roughly 376-acre area drains to the bottom of the quarry. Most of this area is, and will continue to be, vegetated during the life of the operation. The active mining bench will contain the vast majority of runoff from the hillside above, including all disturbance related to said mining bench. At the mill level, the sediment pond will contain the drainage area of the mill level separately from the rest of the site. The mill level has a drainage area of 6.6 acres.

The active mining bench will not typically discharge, as the sump will be completely contained within a depression that is at least 25 feet deep. From time to time, large storm events may need to be discharged from the mining bench following sediment settling. The active mining bench will then be pumped to the large natural drainage onsite. From this drainage the water will be diverted around the mill level to the natural drainages offsite to the southwest. The mill level discharges through a discharge point downhill at the terminus of the drainage that sits immediately south of the mill level. Transfer Trail, the public road accessing the site, also has a discharge point at its furthest downhill end. See the Map C-2B shows both of the specific discharge locations.

The access roads will drain to Transfer Trail from the entrance to the mill bench. This will be in a controlled manner via ditches along the side of each access road segment. The ditch systems associated with Transfer Trail will serve to collect stormwater and trap sediment.

The pipe conveyor and associated maintenance road will collect uphill stormwater from roughly 130 feet of undisturbed ground above the pipe conveyor. This is the slope between the expansion mining area and the pipe conveyor itself. The conveyor road will be sloped into the hillside to trap runoff along it. Small sumps will be installed at least every 300 feet along the west side of the conveyor road to collect stormwater and allow sediment settling. These sumps will not discharge.

### **Drainage Basin to Colorado River**

All discharges from the site will eventually reach the Colorado River just west of Glenwood Springs, CO.

### **Off-site Sources**

Uphill drainage area for the hillside will be intercepted by the active mining bench during operations. Following reclamation, the area will discharge off site to the south as prior to mining.

### **On-Site Stormwater and Process Water Runoff**

Stormwater volume was determined using the calculations below as described in "Procedures for Determining Peak Flows in Colorado," that includes and supplements Technical Release No. 55 "Urban Hydrology for Small Watersheds."

## Stormwater Calculations

### Runoff Curve Numbers (CN) for Watershed Area – Active Mining Bench

Description	Hydrologic Soil Group	Area (acres)	CN
Pinyon-Juniper	Group C Soils	192.6	73
Pinyon-Juniper	Group B Soils	169.8	58
Active Mining Bench	Group C Soils	14.5	95
Overall		376.8	67.1

An area of 376.8 acres will drain to the discharge point for the worst case disturbance of the site. This worst case scenario is when the active mining bench is at the level just above the mill level, and therefore intercepts the runoff from the whole hillside above it plus the bench itself. The ground feeding this runoff will be a mixture of reclaimed ground (pinyon-juniper community) and active mining area.

### Hydrologic Soil Group

<b>Group A Soils:</b>	High infiltration (low runoff). Sand, loamy sand, or sandy loam. Infiltration rate > 0.3 inch/hr when wet.
<b>Group B Soils:</b>	Moderate infiltration (moderate runoff). Silt loam or loam. Infiltration rate 0.15 to 0.3 inch/hr when wet.
<b>Group C Soils:</b>	Low infiltration (moderate to high runoff). Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.
<b>Group D Soils:</b>	Very low infiltration (high runoff). Clay loam, silty clay loam, sandy clay, silty clay, or clay. Infiltration rate 0 to 0.05 inch/hr when wet.

## **Runoff Curve Number and Runoff – Active Mining Bench**

**Project:** Mid-Continent Quarry      **By:** GLA

### **1. Runoff curve number (CN)**

CN = 67.1

### **2. Runoff**

<b>Frequency</b>	100 yr
<b>Rainfall, P (24-hour)</b>	2.82 in
<b>Runoff, Q</b>	0.50 in
<b>Runoff Volume</b>	15.7 Acre-Ft

Total stormwater runoff during the worst-case scenario is 15.7 acre-feet. This worst-case bench level is near the end of the quarry, when the largest portion of the site drains into the active mine bench. It will be a bench similar to that shown on Map C-2F. Since the entirety of the area above the active mining bench drains to it during operations, the volume of the active mining bench must be greater than the amount of runoff.

The active mining bench will be bound a natural barrier of at least twenty-five feet in height or a stormwater berm that it is at least five feet tall. Over 14.5 acres, this provides over 72.5 acre-feet of stormwater storage (14.5 acres x 5 foot minimum). This is sufficient volume to store the stormwater runoff of 15.7 acre-feet in this scenario.

**Runoff Curve Numbers (CN) for Watershed Area – Mill Level**

<b>Description</b>	<b>Hydrologic Soil Group</b>	<b>Area (acres)</b>	<b>CN</b>
<b>Active Mining Bench</b>	<b>Group C Soils</b>	<b>12.1</b>	<b>95</b>
<b>Overall</b>		<b>12.1</b>	<b>95</b>

An area of 12.1 acres will drain to the discharge point for the entire life of the mill level.

**Hydrologic Soil Group**

<b>Group A Soils:</b>	High infiltration (low runoff). Sand, loamy sand, or sandy loam. Infiltration rate > 0.3 inch/hr when wet.
<b>Group B Soils:</b>	Moderate infiltration (moderate runoff). Silt loam or loam. Infiltration rate 0.15 to 0.3 inch/hr when wet.
<b>Group C Soils:</b>	Low infiltration (moderate to high runoff). Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.
<b>Group D Soils:</b>	Very low infiltration (high runoff). Clay loam, silty clay loam, sandy clay, silty clay, or clay. Infiltration rate 0 to 0.05 inch/hr when wet.

## **Runoff Curve Number and Runoff – Mill Level**

**Project:** Mid-Continent Quarry      **By:** GLA

### **3. Runoff curve number (CN)**

CN = 95

### **4. Runoff**

<b>Frequency</b>	100 yr
<b>Rainfall, P (24-hour)</b>	2.82 in
<b>Runoff, Q</b>	2.28 in
<b>Runoff Volume</b>	2.30 Acre-Ft

Stormwater runoff at the mill level will be collected within a sediment pond located at the southwest portion of the mill level, as shown on Map C-2. The sediment pond has a capacity of 3.0 acre-feet. This is sufficient to hold the entire 100-Year event runoff from the mill level, which is 2.30 acre-feet. The discharge from this sediment pond will be down to the Transfer Trail stormwater controls, where it will eventually flow the NPDES discharge point at the end of Transfer Trail to the south of quarry. All surrounding disturbed areas drain to this sediment pond

### **Active Bench Sump Discharge Diversion Channel**

Channel Design (Non-Erodible) Fri Jun 28 16:14:36 2019

Project: Glenwood Springs Quarry

Channel Type: Triangular, Unequal Side Slopes

Dimensions: Left Side Slope 0.50:1

Right Side Slope 10.00:1

Wetted Perimeter: 4.91 ft

Area of Wetted Cross Section: 1.02 sq. ft.

Channel Slope: 15% (steepest section)

Manning's n of Channel: 0.0305

Discharge: 6.70 cfs (3000 gpm)

Depth of Flow: 0.44 ft

Velocity: 6.60 fps

Channel Lining: Excavated, No Vegetation

Freeboard: 0.50 feet

The active bench sump will be dewatered from time to time using a pump at a rate of 3000 gpm. This flow will drain down the hillside through the large natural channel to the Diversion Channel. The Diversion Channel identified northeast of the mill level on Map C-2B. This channel then discharges into the natural hillside drainages to the southwest.

### **Pipe Conveyor Road Sumps**

Runoff Curve Number and Runoff  
Project: Glenwood Springs Quarry

Mon Jul 01 08:10:42 2019

Project: Pipe Conveyor Sump  
Location: Mid-Continent Quarry  
Developed

By: B Langenfeld Date: 07/01/19

#### **1. Runoff Curve Number (CN)**

Cover description	CN	Soil Group	Area(Sq.Ft.)
Pinyon-Juniper (Fair)	73	C	39000 (130x300)

CN (weighted): 73.0  
Total Area: 39000 Sq.Ft.

#### **2. Runoff**

Return Period: 10 YEAR  
Rainfall, P: 1.90 in  
Runoff, Q: 0.2771 in  
Runoff Volume: 0.02 Acre-Ft = 871.2 cu.ft.

Each sump will need to hold roughly 870 cubic feet of water for the 10-YR 24-HR storm event. A minimum total depth of 3.5 feet for a 348 sq.ft. sump will be sufficient. This includes freeboard.

## **Process Water**

Process water consists of water used in either the primary crushing/screen circuit on the active mining bench. On the active mining bench, the process water will be collected in the same sump as the stormwater. Mill processing is dry.

## **E. SUMMARY OF EXISTING DISCHARGE SAMPLING DATA**

The Mid-Continent Quarry discharges from the mill level sediment pond following storm events. Records of sampling are kept on-site and are available upon request by an inspector. The sample form is included in Appendix A.

## **F. DESCRIPTION OF SAMPLING POINTS**

The Mid-Continent Quarry has two discharge points that will be sampled upon discharge. They are shown on the SWMP maps. These discharge points are permitted with the Colorado Department of Public Health and Environment's (CDPHE) sand and gravel construction discharge permit. Parameters to be sampled are listed below in the following table.

<b>Effluent Parameter</b>	<b>Measurement Frequency</b>	<b>Sample Type</b>
Flow, MGD	Continuous	Recorder
Total Flow	Continuous	Calculated
Oil and Grease, visual	Twice / Month	Visual
Oil and Grease, mg/l	Contingent	Grab
pH, s.u.	Twice / Month	Grab
Total Suspended Solids, mg/l	Twice / Month	Grab
Total Dissolved Solids, mg/l	Quarterly	Grab
Iron, total recoverable, ug/l	Twice / Month	Grab

## **Monitoring Procedures**

Samples will be collected in a manner that represents the discharge of each discharge location. They will be made with a clean, clear glass or plastic container and examined in a well-lit area for: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of pollution. Records of sampling results will be maintained with the SWMP. All monitoring is conducted under the supervision of the SWMP administrator.

### III. STORMWATER MANAGEMENT CONTROLS

#### A. SWMP ADMINISTRATOR

The SWMP Administrator is responsible for the daily Stormwater Management Plan (SWMP) administration at this site. This designated person is listed at the beginning of this document along with their contact information.

#### B. RISK IDENTIFICATION AND ASSESSMENT

No stormwater discharge will occur for any stormwater events prior to being allowed to settle in the settling pond.

A summary of estimated risks if a discharge were to occur is presented below:

##### Potential for Discharge from Basin:

Pollutant	
Oil and Grease	Low
Total Dissolved Solids	Low
Total Suspended Solids	Low
pH (Outside Range 6.5 to 9.0)	Low

##### Identification of Potential Pollutant Sources

###### 1. Disturbed and Stored Soils

Topsoil and overburden stripped from area to be disturbed will either be stockpiled for future reclamation, or directly placed on areas undergoing concurrent reclamation.

###### 2. Vehicle Tracking of Sediment

The site will have haul truck traffic from the mill level. A small amount of traffic will access the active mining bench but consists almost entirely of employees. These activities have the potential to discharge sediment laden water but the Best Management Practices (BMPs) outlined in this Plan make a sediment laden discharge a remote possibility. Sediment tracking is prevented principally by vehicle tracking pads at the entrances to both the active mining bench from Transfer Trail and the mill level from Transfer Trail.

###### 3. Management of Contaminated Soils

The site has no contaminated soils. If a spill occurs, any contaminated soils will be isolated to prevent discharge. These materials will be treated or hauled off-site in conjunction with the procedures of the SPCC Plan.

#### **4. Loading and Unloading Operations**

Finished product is loaded at the mill level. All unloading/loading areas are contained within the drainage area of the sediment pond for that level, therefore no spilled material will leave the site. Fines generated during processing area will be collected and used in reclamation backfill.

#### **5. Outdoor Storage Activities (Storage of Chemicals)**

Various diesel tanks and used oil are stored onsite. Without BMP's there is a significant potential to discharge pollutant laden water but the BMP's outlined in this Plan make polluted discharges a remote possibility from this source. The primary BMP's are secondary containment of the tanks and the inspection/training/maintenance procedures outlined in the SPCC Plan. Many chemicals listed in the section above are located in the mill building where the building is secondary containment.

#### **6. Vehicle and Equipment Maintenance and Fueling**

There are various diesel tanks, used oil, and chemical tanks on-site that are usually used at least once per day. Without BMP's there is a significant potential to discharge pollutant laden water but the BMP's outlined in this Plan make polluted laden discharges a remote possibility from this source. The primary BMP's are a) secondary containment of tanks, b) containment of areas on-site where fueling and maintenance occurs and c) the inspection/training/maintenance procedures outlined in the SPCC Plan. Internal isolation berms detain any potential pollution from the fueling area before it can reach the dewatering trench below.

#### **7. Significant Dust or Particle Generating Processes**

Mining, crushing or screening activities will primarily occur with raw material that is dry. This material is generally sand size and greater and produces little dust. Raw materials fed into the crushing plants will be wetted with water sprays to minimize dust. Active dust control using non-water methods may also be used. Quarry equipment with diesel engines and trucks have potential to release particulates. Without BMP's there is a significant potential to discharge sediment laden water but the BMP's outlined in this Plan make polluted laden discharges a remote possibility from this source. The primary BMP's are the fully contained operation of plants, containment of areas on-site where dust producing activities occur, and coarse gravel roads.

#### **8. Routine Maintenance Activities involving Fertilizers, Pesticides, Detergents, Fuels, Solvents, Oils, etc.**

Dispensing of fuels from various diesel tanks are discussed above. No fertilizers or detergents are used. Herbicide may be used once per year or every other year to reduce weed infestations on-site. Without BMP's there is a slight potential to discharge pollutant laden water but the BMP's outlined in this Plan make polluted laden discharges a remote possibility from this source. The primary BMP's are the secondary containment of the tanks, containment of the areas on-site where the fueling and maintenance occurs and

the inspection/training/maintenance procedures outlined in the SPCC Plan.

## **9. On-site Waste Management Practices**

The mill level and active mining bench have small garbage bins that are picked up by the local waste management company and disposed of in approved landfills. Pickup may occur weekly during periods of high activity on the site. Without BMP's there is a slight potential to discharge pollutant laden water but the BMP's outlined in this Plan make polluted laden discharges a remote possibility from this source. The primary BMP's are the integrity of waste bins and the pickup of waste by the approved waste management company serving Glenwood Springs.

## **10. Non-Industrial Waste Sources such as Worker Trash and Portable Toilets**

Port-a-potties exist on-site and are serviced as needed by the local contractor. Worker trash is disposed of in waste bins that are taken to the approved landfill by the local waste management company. Without BMP's there is a slight potential to discharge pollutant laden water but the BMP's outlined in this Plan make pollutant laden discharges a remote possibility from this source. The primary BMP's are the factory supplied waste trash bins and port-a-potties with proper disposal of trash and port-a-potty waste.

## **11. Building Roofs**

The roofs of fixed structures could potentially hold materials that stormwater would mobilize. Without BMPs there is a slight potential to discharge minor pollutants to local surface water, but the BMPs outlined in this Plan make pollutant laden discharges a remote possibility from this source. The primary BMP is the containment of the stormwater within the site prior to passing through a permitted and monitored discharge point.

## **12. Other Areas or Procedures Where Potential Spills Can Occur**

Other than the tanks identified in this Plan and the SPCC Plan, there are no other tanks or other sources that could result in a spill other than a rupture of hydraulic lines and diesel tanks associated with the mobile equipment on-site. Without BMP's there is a reasonable potential to discharge pollutant laden water but the BMP's outlined in this Plan make pollutant laden discharges a remote possibility from this source. The primary BMP's are a) the fact that the quantities of fluids on mobile equipment are small, less than 330 gallons of diesel fuel and 60 gallons of oil, b) the SPCC Plan requires spill kits that will be used to mop up any spill from the mobile equipment, and c) the ability to shut the pit pump off until any mobile equipment spill is cleaned up.

### **C. PREVENTATIVE MAINTENANCE**

The below listed are the inspection and maintenance practices that will be implemented to control stormwater runoff quality:

- The SWMP Administrator will be responsible for inspections, maintenance and oversight of any required repair operations. SWMP inspections will occur at least 2 times per year and records of these inspections will be kept on-site with the SWMP.
- Ground slopes will be minimized to limit erosion and slow down flow during a stormwater event.
- Final backfilled disturbed areas and stockpiles will be reseeded promptly to minimize erosion and sediment transport.
- Inspect all tanks for leaks, proper dispensing equipment and adequate secondary containment in conjunction with the SPCC Plan.
- Inspect and clean out settling pond as required to maintain settling volume.
- Inspect all Isolation berms on-site for disruption, erosion or any other fault that requires maintenance.
- Proper operation of crushing/screening plants and general site activities are covered under air emissions permits that are approved for all site plants and activities.

### **D. GOOD HOUSEKEEPING**

The following good housekeeping practices will be employed at the site:

- Substances stored on-site will be stored in a neat, orderly manner in their appropriate containers.
- Open containers of non-hazardous materials shall be covered to prevent mixing with stormwater.
- The Safety Coordinator is responsible for day-to-day site operations and directing spill prevention, cleanup, and reporting. See Mid-Continent Quarry SPCC Plan.
- Waste oil will be stored within a designated above ground storage tank or in covered areas to prevent mixing of stormwater and oil. RMR Aggregates, Inc. will encourage proper waste disposal practices.
- If drip pans are used they will be cleaned on a regular basis and will not be allowed to fill with stormwater. The contents will be disposed in a landfill approved to handle

such waste.

- Oil-water separators will be cleaned of accumulated oil on a regular basis to prevent an overflow of oil out of the tank. Oil will be collected and hauled off-site by a contractor approved to handle such waste.
- Hazardous materials will be stored in accordance with the Uniform Fire Code and placards will be visible to identify the potential hazards. The classification of any material stored on-site shall be made by the fire department.

## **E. BEST MANAGEMENT PRACTICES**

This Stormwater Management Plan was developed to improve the water quality of stormwater runoff. BMPs are intended to provide erosion control measures to avoid high sediment load transport into receiving streams and to avoid transport of on-site contaminants into waterways. Implementation of BMPs will improve water quality in discharges from this industrial site.

### **BMPs FOR THE SITE ARE:**

- 1) Stormwater encountered within the disturbed areas will be drained to the appropriate sump or sediment pond.
- 2) The sediment pond at the mill level and the sumps on the active mining bench will act as secondary protection against discharging water with high sediment levels.
- 3) Non-paved roads are well compacted and covered with aggregate road base.
- 4) Unused topsoil stockpiles in place are seeded and mulched are promptly seeded and mulched.
- 5) Topsoil and overburden stockpiles will have erosion control structures such as silt fences or ditches around their perimeter to prevent sediment loss.
- 6) Vehicle maintenance will be conducted in the facilities area that drains to a sump that is not discharged.
- 7) Petroleum products are stored in double walled tanks in the fuel farm(s).

## **F. EMPLOYEE TRAINING**

RMR Aggregates, Inc., through the Stormwater Administrator, will train and educate current and new employees on appropriate stormwater management, spill response, good housekeeping and materials storage practices. Best management practice training programs should also be conducted regarding improving the water quality of stormwater runoff.

## **G. TESTING FOR NON-STORMWATER DISCHARGES**

No non-stormwater discharge is anticipated.

## **H. AMENDMENTS**

This SWMP must be amended whenever there is a change in facility design, construction, operation, or maintenance that materially affects RMR Aggregates, Inc. potential for discharge of pollutants (sediment, oils, etc.) into or upon waters of the United States. Such amendments must be implemented no later than six months after the change occurs. Any amendments to the SWMP will be certified by a Registered Professional Engineer.

## **IV.FINAL SITE STABILIZATION**

All slopes shown on the approved Map F-1 Reclamation Plan will be revegetated for final stabilization and reclamation. Final successful reclamation will eliminate the need for sediment control structures.

## **V. COMPREHENSIVE INSPECTION**

The SWMP Administrator will conduct regular inspections of the site for stormwater management controls, spill control, maintenance, and cleanup. Inspections during at least the spring and fall of each year shall be conducted and the records of such inspections shall be maintained in files at the site together with the SWMP. The inspections shall incorporate a complete review of all BMP's outlined in this plan and will report on any BMP's that are not functioning and/or require maintenance. Any discharges that are out of compliance with the Discharge permit shall also be reported with corrective actions outlined.

### **A. PERFORMATIVE STANDARDS**

Performative standards for each stormwater control structure are as follows:

- **SUMPS:** All sumps will be maintained to have sufficient freeboard to trap the events as described in this SWMP while maintaining at least one foot of freeboard.
- **CHANNELS/DITCHES:** All channels and/or ditches built for the conveyance of stormwater will maintain sufficient depth to carry the depth of flow calculated in their design plus at least six inches of freeboard.
- **BERMS:** All stormwater berms will be maintained to the height necessary to prevent the uncontrolled discharge of stormwater past them. All berms will have a minimum height of two feet.
- **STORMWATER CONTROL DEVICES:** All stormwater control devices (silt fences, hay bales, etc.) will be maintained within good working order according to manufacturer recommendations. All such devices must be intact and sufficient to prevent the passage of uncontrolled stormwater flows past them.

## **VI.RECORD KEEPING AND INTERNAL REPORTING PROCEDURE**

Incidents such as spills or other discharges, together with other relevant information describing the quality/quantity of stormwater, will be included in records maintained at the site. Inspection records and maintenance records will be maintained at the site.

At least two comprehensive Stormwater Management Plan inspections (spring and fall) will be conducted each year for annual reporting to the Colorado Department of Public Health and Environment. The reports shall include the date of the inspection, findings and actions taken, and submitted with the Annual Stormwater Report due **March 1** each year.

## **VII. CONSISTENCY WITH OTHER PLANS**

The SPCC Plan will be consistent with the SWMP and will be available on-site. Necessary discharge permits will be acquired and maintained with CDPHE. If other permits affecting stormwater are required of the site in the future, the SWMP will be modified to ensure consistency. These plans will also maintain consistency with the BLM and DRMS permits.

## **VIII. ALLOWABLE NON-STORMWATER DISCHARGES**

There are no allowable non-stormwater discharges.

## **APPENDIX A FLOW MEASUREMENTS AND CALCULATIONS**

### ***STORMWATER DISCHARGE***

The site discharges from three discharge points. All points can be seen on the SWMP Maps.

Discharge is via an engineered weir, a Parshall flume, or a pump water line. All three allow for the accurate calculation of flowrate during a discharge. The SWMP Administrator is responsible for the accuracy of all calculations and measurements as part of this plan.

The flow data measured on-site using the procedures described above will be recorded on the form below. The completed forms are available on-site with this SWMP.

[illegible]

## Recording Form for Flow Measurements

## **DISCHARGE PERMIT SAMPLING REQUIREMENTS**

The Mid-Continent Quarry will have three discharge points. These points are shown on the SWMP Maps. Sampling of all discharges will be done in accordance with the approved CDPHE discharge permit. The waterways surrounding the Mid-Continent Quarry will also be inspected for visible sheen produced from oil or grease. Typical parameters to be sampled are listed below in the following table. These parameters/analytes maybe revised if there are changes to the CDPHE discharge permit for the site.

<b>Effluent Parameter</b>	<b>Measurement Frequency</b>	<b>Sample Type</b>	<b>Unites</b>
Total Flow	Continuous	Calculated	Report
Flow, MGD	Continuous	Recorder	Report
Oil and Grease	Twice / Month	Visual	Report
Oil and Grease	Twice / Month	Grab	Mg/L (contingent)
pH, s.u.	Twice / Month	In-situ	pH, s.u.
Total Suspended Solids, mg/l	Twice / Month	Grab	mg/l
Total Dissolved Solids, mg/l	Quarterly	Grab	mg/l
Iron, Total Recoverable, mg/l	Twice / Monthly	Grab	mg/l

**VISUAL SAMPLING RECORD SHEET**

Sample Location	
Collection Date/Time	
Assessment Date/Time	
Sampler (print & sign)	
Visual Assessor (print & sign)	
Nature of Discharge	
Discharge Observations	
Source of Any Observed Contamination	
Was the Sample Taken Within 30 Minutes of Discharge? If, NO, why not?	

## **APPENDIX B - MSDS**

## **APPENDIX C – DISCHARGE MECHANISM INFORMATION**

## **APPENDIX D - CDPHE DISCHARGE PERMIT**

## **APPENDIX E - SWMP MAPS**

Map C-2B Stage 1 Mining Plan

Map C-4 Mill Facilities

Map F-1 Reclamation Plan