HALEY ALDRICH

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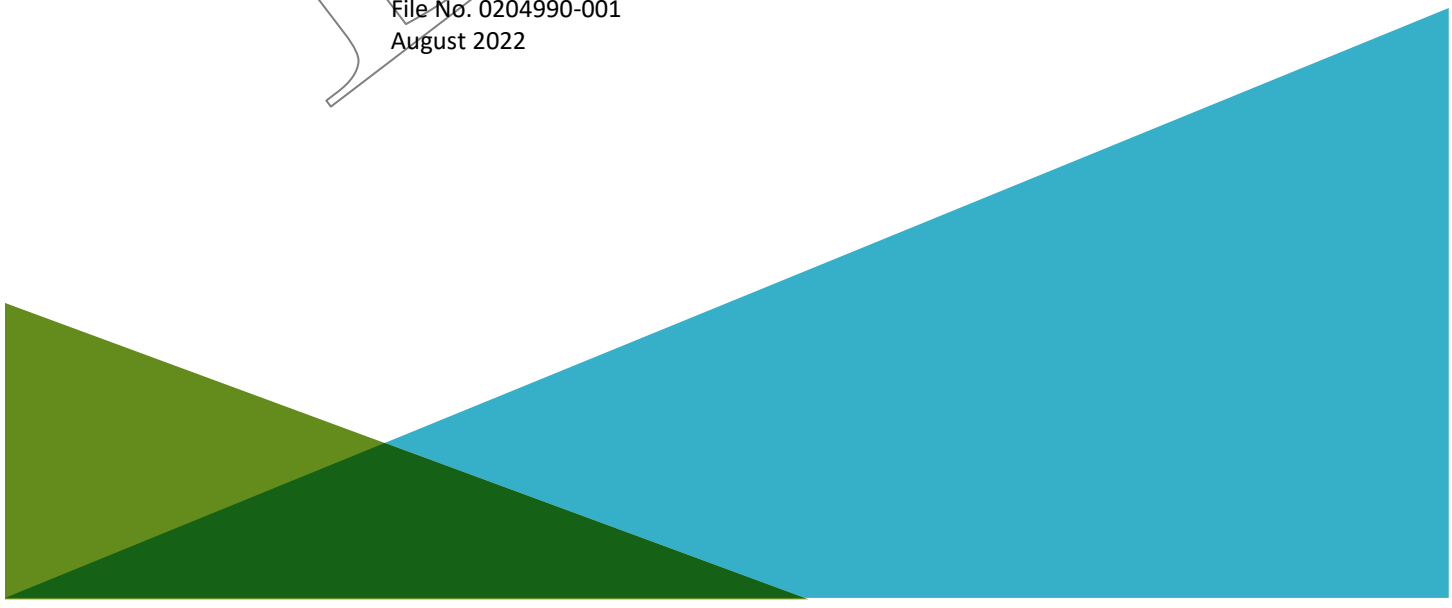
REPORT ON

STORMWATER MANAGEMENT PLAN
SOLBERG PIT
PEYTON, COLORADO

by
Haley & Aldrich, Inc.
Greenwood Village, Colorado

for
Pioneer Landscaping Materials, Inc.
Peyton, Colorado

File No. 0204990-001
August 2022



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11 August 2022
File No. 0204990-001

Pioneer Landscaping Materials, Inc.
Solberg Aggregate Mine
Peyton, Colorado 80831

Attention: Dr. Angela Bellantoni

Subject: Stormwater Management Plan
Solberg Aggregate Mine
Peyton, Colorado

Dear Dr. Bellantoni:

Haley & Aldrich, Inc., on behalf of Pioneer Landscaping Materials, Inc., is submitting this Stormwater Management Plan as part of the greater permit submittal for an existing sand and gravel mining operation in Peyton, Colorado. The enclosed Stormwater Management Plan presents our analysis of the potential pollutants of the site and best management practices in support of the Colorado Department of Public Health and Environment's (CDPHE) Colorado Department of Public Safety (CDPS) General Permit COG500000 Discharges from Sand and Gravel Mining and Processing permit submittal for the proposed expansion of the existing operation. Thank you for the opportunity to assist Pioneer Landscaping Materials, Inc. with this important project. Please direct any questions to Zach Smith at (720) 621-6536.

Sincerely yours,
HALEY & ALDRICH, INC.

Zachary J. Smith, P.E. (CO)
Senior Engineer

Christopher G. Langham, P.E. (AZ), CFM
Technical Expert

Enclosures:
Report on Stormwater Management Plan, Solberg Pit, Peyton Colorado

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SIGNATURE PAGE FOR

REPORT ON

STORMWATER MANAGEMENT PLAN
SOLBERG PIT
PEYTON, COLORADO

PREPARED FOR

ROBERT SOLBERG
SOLBERG GRAVEL LLC
PEYTON, COLORADO

QUALIFIED STORMWATER MANAGER

JASON ULMER
PIONEER LANDSCAPING MATERIALS, INC.
PEYTON, COLORADO

CONTRACTOR INFORMATION

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PEYTON, COLORADO

PREPARED BY:

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Senior Engineer
Haley & Aldrich, Inc.

REVIEWED AND APPROVED BY:

Christopher G. Langham, P.E. (AZ), CFM
Technical Expert
Haley & Aldrich, Inc.

Table of Contents

Table of Contents

List of Tables

List of Appendices

1. General Location and Description

1.1 LOCATION

The existing Pioneer Landscaping Materials, Inc. (Pioneer) Solberg Pit and proposed 79-acre expansion area (Site), adjoining the existing permitted acreage to the west, is located on private lands on Curtis Road in Peyton, Colorado. The Site is located in a rural portion of the County with surrounding land uses of ranches and low density homesites. No existing facilities exist near the Site. The mine entrance is located on Curtis Road south of Garrett Road. Other streets near the Site include Jones Road to the south and McCandlish Road, Renneberger Road, and Good Fortune Road to the north. The legal description of the Site is the west ½ of the northwest ¼ of Section 21, Township 13 South, Range 64 West of the 6th prime meridian in El Paso County, Colorado.

1.2 VICINITY MAP

A site vicinity map has been included below.

SITE AERIAL
MAP SOURCE:IMAGE DATED 6 OCTOBER 2019
TAKEN ELECTRONICALLY FROM GOOGLE EARTH PRO.

2. Site Conditions

2.1 DESCRIPTION OF PROPERTY

The existing construction materials mining operation has a permitted area of approximately 234 acres, and the proposed amendment area is approximately 79 acres, for a total area of approximately 313 acres. The area is composed of slightly rolling hills with an elevation range of 6,724 feet to 6,628 feet.

Mining at the Site began in 1982 and is considered an existing, legal, non-conforming land use. The plan of operations for the Site consists of excavating unconsolidated surficial materials down to a depth of approximately 35 feet below ground surface (bgs). Materials excavated from the pit area are taken to the processing plant. At the processing plant, the materials are washed and sorted to remove unwanted silts and clays and to separate out the sand and gravel. Sand and gravel separated during this process are dewatered and stockpiled. The stockpiled sand and gravel are then transported from the Site via haul truck.

Mining has occurred in the eastern portion of the Site and is gradually expanding towards the west. Site features include an existing quarry and associated processing, washing, and material stockpile areas. Operations areas include maintenance and fueling areas, truck scales and scale house, and multiple process water settling ponds.

2.2 VEGETATION

The existing Site is currently a mining operation with onsite conditions consisting of little to no vegetation based on visual inspection and historical imagery.

2.3 DRAINAGE CHARACTERISTICS

The Site is located within the Chico Creek (CH) drainage basin, and the current and expanded mine area is between two unnamed tributaries of the West Black Squirrel Creek (WS). The Site is in a rural portion of the county with widely spaced residential homes and farming/ranch land.

Current land use along the Site is rural, with surrounding properties shown on Drawing C-100 of the drawing set provided in Appendix A. The existing land use and proposed expansion is to be used for construction aggregate mining.

The Chico Creek drainage basin is about 736 square miles and is located in the southeastern portion of El Paso County and the northeastern portion of Pueblo County, east of the Fountain Creek Watershed. The Site is located in the Upper Black Squirrel Subbasin of the Chico Creek drainage basin. The upper Black Squirrel Subbasin is made up of many existing districts, developed areas, and rural/agricultural areas. The Upper Black Squirrel Subbasin is primarily a rural area, with a couple of small clusters of single-family homes.

Flow that exits the Site will ultimately enter the Black Squirrel Creek and drain into Chico Creek. Chico Creek then flows into the Arkansas River in Pueblo County. The upper and middle portions of Black Squirrel Creek are ephemeral streams that flow only in response to thunderstorms, snowmelt, and prolonged rainfall. There is perennial flow only along the lower portions of the creek.

The Site is located within a designated Federal Emergency Management Agency (FEMA) effective Zone A floodplain as identified on FEMA Flood Insurance Rate Map (FIRM) Nos. 08041C0562G, 08041C0564G, 08041C0566G, and 08041C0568G, all of which are dated 7 December 2018 (Appendix B). There are no creeks or stream crossings located within the project area.

2.4 PROPOSED SITE ACTIVITIES

Proposed activities at the Site are limited to the mining of surficial materials and related mineral processing activities. These include the use of temporary structures, construction of haul roads, excavation of materials, and the processing and stockpiling of materials. Existing mining occurs on the eastern 234 acres of the Site. The proposed expansion of the Site includes a single 79-acre parcel to the west. In the expansion area surficial mining and related mineral processing activities will continue to occur.

At closure of the Site, final reclamation of the Site will occur. In accordance with the existing reclamation plan, the Site will be returned to a rangeland. The naturalized open space will be revegetated, and the drainages of the Site will be re-established. Pit slopes and other excavations at the Site are to be graded to a final reclamation slope of 3H:1V (Horizontal:Vertical) and re-vegetated to allow for long-term stormwater quality. The Site is not proposing any importation of inert backfill onsite.

2.5 ANTICIPATED SITE SCHEDULE

The Site is an active mine site. Currently, mining operations are occurring in the existing Site boundary. Once approved, the mining operation is going to expand to the west. Mining operations are anticipated to continue for the next 20 years. Site reclamation and long-term stabilization will occur during the mining process. At the end of mining, the Site will be fully reclaimed and stabilized following the approved reclamation plan.

2.6 SOILS

The ground cover at the Site consists of bare earth in the areas of mining disturbances and low-lying vegetation in the areas that have yet to be mined or are already reclaimed. The low-lying vegetation consists primarily of a mixture of grass and weeds, with the occasional low-growing brush. These areas would be considered herbaceous in good hydrologic condition, as defined in Soil Conservation Service TR-55 Table 2-2d.

The general soil conditions of the Site vary from group A to group B as defined by the U.S. Department of Agriculture Web Soil Survey (Appendix C). These soils are characterized as having a low to moderate runoff potential and moderate to high infiltration rate even when thoroughly wetted.

The Site has been evaluated for geological hazards based on mapping completed by the Colorado Geological Survey. Based on our evaluation of the existing hazard mapping, it was found that the Site has low to no risk of landslides, avalanches, rockfall, mudflows, or debris flows.

The mining of unconsolidated alluvial materials from open excavations does not pose any special geologic hazards aside from the possibility of localized slope failures due to over steepened pit faces. This potential risk is mitigated by the 3H:1V pit slope construction stipulated in the approved reclamation plan and frequent safety inspections by local regulators and the federal Mine Safety and Health Administration. Processed materials stockpiled on the property form natural slopes at the angle of repose of the materials that also do not pose any special geologic hazards. The soils at the Site, both native and stockpiled, will primarily contain sand and gravel. It is anticipated the sand and gravel materials have a low erosion potential up to a flow velocity of 3 feet per second (U.S. Army Engineer Research and Development Center, 2018). With proper placement of Best Management Practices (BMP) the soil erosion impacts on discharge are anticipated to be limited.

2.7 AREAS AND VOLUMES

The existing construction materials mining operation has a permitted area of approximately 234 acres, and the proposed amendment area is approximately 79 acres, for a total area of approximately 313 acres. Over the remaining life of the mine, it is anticipated there will be approximately 10,470,000 cubic yards of cut and 490,000 cubic yards of fill.

3. Erosion and Sediment Control Measures

The following Storm Water Management measures for the Site have been designed to safely manage sediment and erosion from stormwater. The Site will have an existing/interim design during mining and a post-mining reclamation design after regrading and revegetating the Site.

Existing surface drainage at the Site generally flows from the northwest to the southeast. Flow at the Site is kept separated between the unaffected stormwater, which is directed around the disturbed mining and processing areas, and stormwater that lands within the disturbed area. Stormwater that lands outside of the disturbed areas flows to the southeast in existing natural drainages. Stormwater that falls within the disturbed area infiltrates into the ground or is diverted to the sediment basin through the culvert and off site. Onsite operating ponds are connected in series and have an emergency spillway which directs flow to a sediment basin in the northeast corner of the Site, as shown in Appendix A. Mining operations including grading, hauling of soil, drainage, and final stabilization shall implement erosion and sediment control measures as described below.

Erosion and sediment control measures shall be implemented during mining of the Site. One mining entrance with vehicle tracking control (VTC) shall be in an effort to reduce off-site sediment tracking. The mining entrance is located on Curtis Road in the northeast portion of the Site boundary. Temporary soil stockpiles (SP) shall be protected from stormwater using perimeter controls to inhibit soil transport as well as at material storage areas. Portable toilets, if placed on site, shall be located on flat surfaces away from drainage paths, tied-down or staked-down, emptied regularly, and where possible, secondary containment pans shall be provided under the portable toilets. Reference the Storm Water Management Plan (SWMP) design set for locations and sizing of recommended erosion control measures.

Once mining at the Site has been completed, the Site will be reclaimed and regraded in accordance with the existing reclamation plan. Once the Site has been reclaimed, the existing Site ponds will be removed, and two swales will be established to direct stormwater off the Site. The Site will be revegetated with Natural Resource Conservation Service (NRCS) recommended and Colorado Division of Reclamation, Mining and Safety (DRMS) approved seed mix at the completion of the project. The final drainage plan for the Site has been provided in Appendix A.

All persons engaged in earth disturbances shall design, implement, and maintain acceptable soil erosion and sedimentation control measures, in conformance with the erosion and sediment control technical standards adopted by the County. Erosion and sediment control facilities, temporary and permanent, shall be installed before any earth disturbance operations take place. Earth disturbances shall be conducted in such a manner to effectively control runoff volumes, reduce accelerated soil erosion, sediment movement, and deposition off-site. Temporary soil erosion control facilities shall be removed, and earth disturbance areas graded and stabilized with permanent soil erosion control measures to match approved plans and specifications.

4. Pollution Prevention Standards

4.1 POTENTIAL SOURCES OF POLLUTION

Table 4.1. Potential Sources of Pollution

Source	Material or Chemical	Location*	Appropriate Control Measures
Loose soil exposed/disturbed during clearing, grubbing, and grading activities	Sediment	All areas within the Limits of Disturbance	As directed by Section 3 of this Storm Water Management Plan (SWMP)
Equipment fueling and maintenance areas	Metals, hydrocarbons, oils, and greases	Areas surrounding fuel tanks	Provide secondary containments, locate in upland areas. Repair leaking and broken hoses. If a spill occurs, use an onsite spill kit.
Vehicle Tracking and Sediment	Sediment, metals, hydrocarbons, oils, and greases	The entrance and exit of the site	As directed by Section 5.1 of this SWMP
Management of Contaminated Soils	Metals, hydrocarbons, oils, and greases	Areas surrounding fuel tanks	Provide secondary containments, locate in upland areas. Repair leaking and broken hoses.
Loading and Unloading Operations	Sediment	Areas surrounding loading operations	As directed by Section 3 of this SWMP
Dust Control	Dust	All areas within the Limits of Disturbance	As directed by Section 5.3 of this SWMP

Logs for the identification of pollutant sources are included in the Appendices for reference and use. Potential pollutant sources noted above shall be mitigated by use of BMPs.

The potential to contribute pollutants to stormwater discharges is not significant for most of the pollutants identified above, based on the following:

- The ability to schedule actives during dry weather;
- Existing Site topography;
- The ability to implement primary and secondary containment for product storage; and
- The ability to locate activities away from drainage ways.

4.2 SPILL PREVENTION AND RESPONSE

Prior to importing materials of pollution concern, as outlined in Section 4.1 (Potential Sources of Pollution) of this SWMP, assure that all proper protection and containment for these items are on site. Fuel and oils are to be installed in double-walled containment, or have appropriate secondary containment. Upon import of each possible pollutant material, protection and containment will be installed and material protected as appropriate.

In the event of a leak or spill, the following steps would be taken:

1. Personnel would be mobilized to a leak or spill site and contain the spill by constructing a dike or emergency containment structure. Use of an absorbent may also be necessary.
2. Contents of a leaking container would be removed and placed in another tank.
3. All soil showing obvious signs of contamination will be excavated.
4. Depending on the type and extent of spill, testing with a photo-ionization meter for additional soil contamination, and excavation of any remaining contaminated soils will be performed.
5. If storage of contaminated soil is necessary; the soil shall be placed on an 8-mil plastic liner and covered with an 8-mil plastic liner.
6. The excavated area will be backfilled with clean soil.
7. Major spills will have soil samples taken and sent to a certified laboratory to ensure that all contamination has been removed.
8. Contaminated soils will be hauled by a standard triaxle (covered) or dump truck (covered) to a landfill authorized to take such material.
9. For contaminated soils identified as hazardous, arrangements will be made with a licensed hazardous waste hauler to transport the material to a registered landfill.

5. Best Management Practices for Stormwater Pollution Prevention

5.1 VEHICLE TRACKING CONTROL

A non-erosive means of access shall be provided at road crossings and access driveway entrances. Currently the existing entrance is paved. Access protection shall include the stabilized construction entrance option, to reduce tracking of sediment onto public roadways. Stabilized construction entrances will be installed prior to commencing mining traffic. The entrances shall be maintained and repaired, as necessary. Mud and dirt tracked onto the public roadway shall be cleaned daily and cleaned immediately in the instance of a potential safety issue to vehicles, pedestrians, or construction personnel. Location and installation details of the construction entrances are shown in the project drawings.

5.2 STOCKPILED MATERIALS

Sediment or soil from the project Site shall be stockpiled within the mine site if necessary. Temporary SPs shall be protected from stormwater using perimeter control to inhibit soil transport as well as at material storage areas.

5.3 MINIMIZE DUST

Dust control shall be accomplished on-site through watering only. Calcium chloride or other chemicals used for dust control will not be allowed. The contractor shall provide a positive means to prevent air-borne dust from being generated. At a minimum, water trucks should treat interior haul roads and exposed areas.

5.4 TOPSOIL

Topsoil shall be stripped within the mining area and stockpiled in accordance with Section 5.3 above. Topsoil shall be excavated and removed in a manner that will minimize contamination with other soil horizons. Topsoil shall be stockpiled in a manner that prevents erosion and ponding of precipitation.

5.5 SEDIMENT BASIN

A sediment basin shall be installed as shown on the plan set. A temporary sediment basin detains sediment-laden runoff long enough to allow much of the sediment to settle out. Sediment basins are constructed by excavation and/or by placing an earthen embankment across a low area or drainage swale. The basin should be designed to drain completely dry through a controlled outlet structure.

5.6 SITE STABILIZATION

All disturbed areas shall be seeded with NRCS recommended and DRMS approved seed mix at the completion of the project. Site preparation, seedbed preparation, seeding, and mulching shall be completed in accordance with the recommended steps provided by El Paso County.

5.7 PORTABLE TOILETS

Portable toilets shall be provided on-site as necessary for mining personnel. Portable toilets will be located a minimum of 10 feet from stormwater inlets and 50 feet from state waters. They will be secured at all four corners to prevent overturning and cleaned on a weekly basis. They will be inspected daily for spills.

5.8 WASTE MANAGEMENT AND DISPOSAL

No solid materials are allowed to be discharged from the Site with stormwater. All solid waste must be collected and placed in containers. Containers shall be provided at all times to meet county requirements. The location of solid waste receptacle shall be located a minimum of 10 feet from stormwater inlets and 50 feet from state waters.

6. Inspection and Corrective Action

6.1 INSPECTION PERSONNEL AND PROCEDURES

The SWMP inspections shall be performed by a Qualified Inspector or a Qualified Professional, who is knowledgeable in the principles and practices of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the project Site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit. Inspectors must be familiar with the location, design specifications, maintenance procedures, and performance expectations of each BMP.

The SWMP self-monitoring inspections shall take place at a minimum of bi-weekly. Inspections shall also take place prior to any rain event and 8 hours after a rain event. The Owner shall be responsible for hiring and/or obtaining the services of Qualified Inspector or Professional to conduct the SWMP inspections as per the above requirements and time frame. Permittee or contractor shall produce written and signed inspection records for every inspection. The inspection reports shall be kept on-site.

Inspections shall continue through project completion until the Site is permanently stabilized and achieves minimum 70 percent vegetative coverage per square foot.

6.2 CORRECTIVE ACTION

The Qualified Inspector shall prepare an inspection report after each inspection. Inspection reports shall be maintained on the construction site within the SWMP. A sample inspection report is included in Appendix D. At a minimum, the inspection report shall include and/or address: date and time of inspection; name/title of inspector; weather and soil conditions; runoff conditions; water body and discharge conditions; identify erosion and sediment control repair and maintenance required; replacement and modifications to erosion and sediment controls; description/sketch and size of current disturbed areas and stabilized areas; current phase of construction; identify all construction/practices not in accordance with the SWMP and technical standards; and digital photographs with date stamp.

Within 1 business day of the inspection, the Qualified Inspector shall notify the Owner/Operator and Contractor/Subcontractor of any corrective actions that need to be taken.

If BMPs selected are inadequate to control sediment and erosion, additional BMPs may be implemented during construction. Modifications made to the Erosion and Sediment Control Plan must be documented on the SWMP. Flow that exits the Site will ultimately enter the Black Squirrel Creek and drain into Chico Creek. A Modification Log in located in Appendix E.

Within 1 business day of notification from the Qualified Inspector, the Contractor/Subcontractor shall begin implementing the corrective actions and complete the corrective actions within a reasonable time frame.

All inspection reports are to be signed by the Qualified Inspector. Within 7 days of the inspection, photographs of the completion of the corrective action work shall be attached to the inspection report.

7. Terms and Conditions of the CDPS

7.1 STORMWATER DISCHARGES

The following limitations shall apply to discharges associated with mining activities:

- Stormwater discharges from mine activities shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any water quality standard, including narrative standards for water quality.
- Bulk storage structures for petroleum products and any other chemicals shall have secondary containment or equivalent adequate protection to contain all spills and prevent any spilled material from entering State Waters.
- All Site wastes must be properly managed to prevent potential pollution of State Waters. This permit does not authorize onsite waste disposal.
- All discharges must comply with the lawful requirements of federal agencies, municipalities, county, drainage districts, and other local agencies regarding any discharges of stormwater to storm drain systems or other water courses under their jurisdiction, including applicable requirements in municipal stormwater management programs developed to comply with CDPS permits. Discharges must comply with local stormwater management requirements, policies, or guidelines including erosion and sediment control.

7.2 ALLOWABLE NON-STORMWATER DISCHARGES

Appropriate control measures shall be implemented to minimize erosion and sediment transport resulting from such discharges, and the non-stormwater components of the discharge and the control measure used identified in this SWMP. Allowable non-stormwater discharges, as defined by CDPS, include the following:

- Uncontaminated condensate (external atmospheric condensation only) from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids.
- Landscape (including reclamation activities) watering, provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling.
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blow down or drain).

7.3 SWMP AVAILABILITY

A copy of the SWMP (Appendix F) and documentation of the inspection results must be provided upon request for a period of 3 years following the expiration or inactivation of permit coverage. These records must be available to the El Paso County and the U.S. Environmental Protection Agency upon request.

The SWMP Administrator is responsible for retaining a copy of the SWMP and provide the original to the owner/permittee upon inactivation of the permit.

7.4 SWMP REVIEW/CHANGES

As the mining evolves and the Site changes over time, the implemented BMPs may need to be modified and adjusted. These adjustments are necessary to ensure that the potential pollutants are managed correctly. The operator shall amend the SWMP when there are changes in the design or operation of the Site that affect the BMPs. Additionally, if the SWMP and/or BMPs are found to be ineffective in controlling pollutants in stormwater discharges changes should be made to the SWMP.

8. Summary and Conclusions

This SWMP has been developed for Pioneer Solberg Pit as part of the greater permit submittal package for the expansion of the Pioneer Solberg Quarry. Based on the information contained in this document, temporary erosion control measures and BMPs at the Site will capture and retain sediment-laden runoff prior to discharging off-site.

References

1. El Paso County Drainage Criteria Manual (Volumes 1 and 2) and Engineering Criteria Manual, current editions.

2. Measuring Erosion Characteristics of Gravel Soils, U.S. Army Engineer Research and Development center, Vicksburg, Mississippi, October 2018.

3. Pikes Peak Area Water Quality Plan Chapter 21 Chico Creek Watershed, Pikes Peak Area Council of Governments. August 2020.

4. Soil Survey of El Paso County Area, Colorado, prepared by United States Department of Agriculture Soil Conservation Service, dated June 1981.

5. South Central Comprehensive Plan, El Paso County Land Use Department. 1988.

6. United States Geological Survey, 2011. Chico Creek, Geographics Names Information System,. February.

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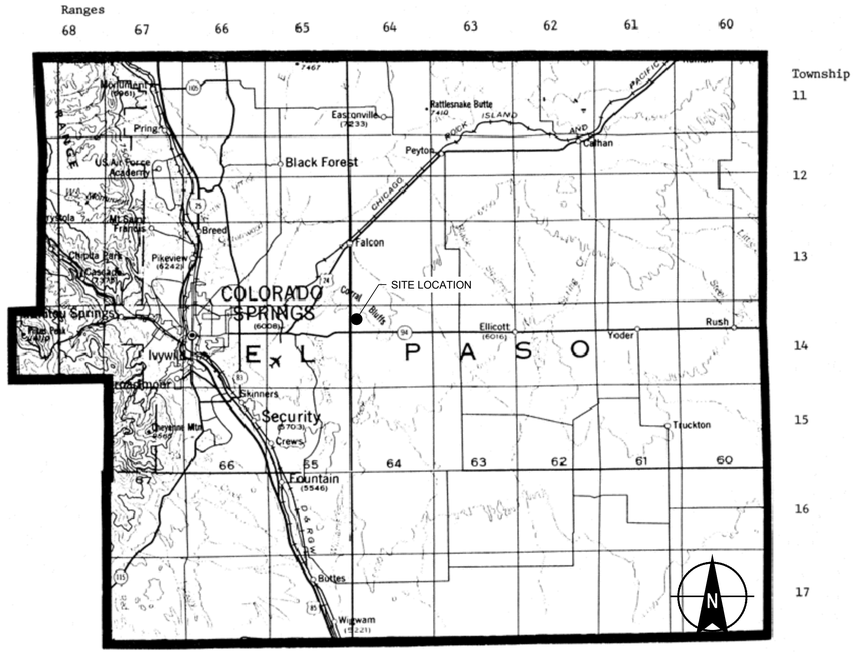
APPENDIX A
Storm Water Management Plan Drawings

PIONEER LANDSCAPING MATERIALS INC.
SOLBERG PIT
STORM WATER MANAGEMENT PLAN

13745 GARRET ROAD
PEYTON, COLORADO



SITE LOCUS
TOPO SOURCE: EL PASO COUNTY MAP FROM COLORADO CEMETERY DIRECTORY (2021)

SITE AERIAL
MAP SOURCE:IMAGE DATED 6 OCTOBER 2019
TAKEN ELECTRONICALLY FROM GOOGLE EARTH PRO.

DRAWING INDEX		
SHEET NO.	SHEET TITLE	DESCRIPTION
01	G-100	COVER SHEET
02	C-100	EXISTING/INTERIM GENERAL ARRANGEMENT
03	C-101	FINAL GRADING PLAN
04	C-300	BMPs (1 OF 5)
05	C-301	BMPS (2 OF 5)
06	C-302	BMPS (3 OF 5)
07	C-303	BMPS (4 OF 5)
08	C-304	BMPS (5 OF 5)

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Drawn By:	JS
Designed By:	JS
Checked By:	CL
Approved By:	ZS

Stamp:

COLORADO LICENSED
ZACHARY J SMITH
60537
08/10/2022
PROFESSIONAL ENGINEER

Rev.	Description	By	Date
0	ISSUE FOR PERMIT	ZS	08/12/22

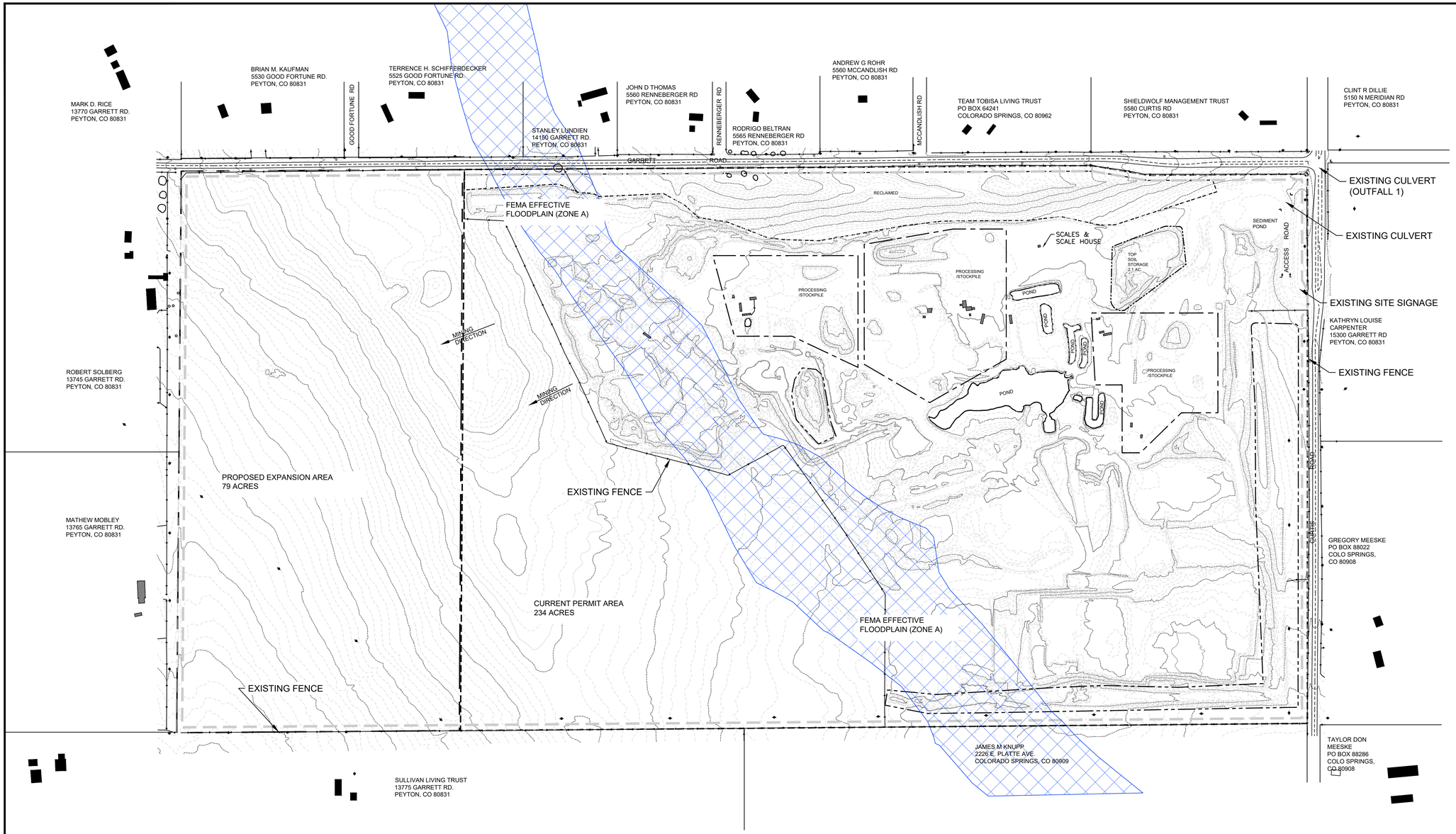
STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

13745 GARRET ROAD
PEYTON, COLORADO

COVER SHEET

G-100

Sheet: 01 of 08



NOTES

1. GENERAL ARRANGEMENT DEVELOPED FROM MAP AND AUTOCAD FILE MADE IN AMERICA BY LANDMARK MAPPING, LTD.
2. EXISTING VEGETATION AT THE SITE IS LIMITED TO GRASS/WEEDS BEYOND THE EXISTING PIT AND HAS BEEN STRIPPED WITHIN THE PIT BOUNDARY.

LEGEND

- CURRENT PERMIT BOUNDARY (234 ACRES)
- PROPOSED AMENDMENT BOUNDARY (80 ACRES)
- AFFECTED AREA BOUNDARY (305 ACRES)
- PROCESSING / STOCKPILE AREAS (23 ACRES)
- TOP SOIL STOCKPILE
- RECLAIMED AREA (16 ACRES)
- PONDS (3 ACRES APPROX.)
- EXISTING BUILDINGS
- FLOODPLAIN

- FIRE
- LPOLE
- MANHOLE
- SIGN
- UPOLE
- FENCE
- MISC
- TOWER
- PILE
- CULVERT
- ROCK
- IRRIGATION
- MAILBOX
- TREE
- TRAFFIC
- RIP-RAP
- POLE-ANCHOR

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SCALE IN FEET

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Project No.:	0204990
Scale:	SHOWN
Date:	AUGUST 2022
Drawn By:	JS
Designed By:	JS
Checked By:	CL
Approved By:	ZS

Stamp:

COLORADO LICENSED ZACHARY J SMITH 60537 08/10/2022 PROFESSIONAL ENGINEER

Rev.	Description	By	Date
0	ISSUE FOR PERMIT	ZS	08/12/22

STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

13745 GARRET ROAD
PEYTON, COLORADO

EXISTING/INTERIM GENERAL ARRANGEMENT

C-100

Sheet: 02 of 08

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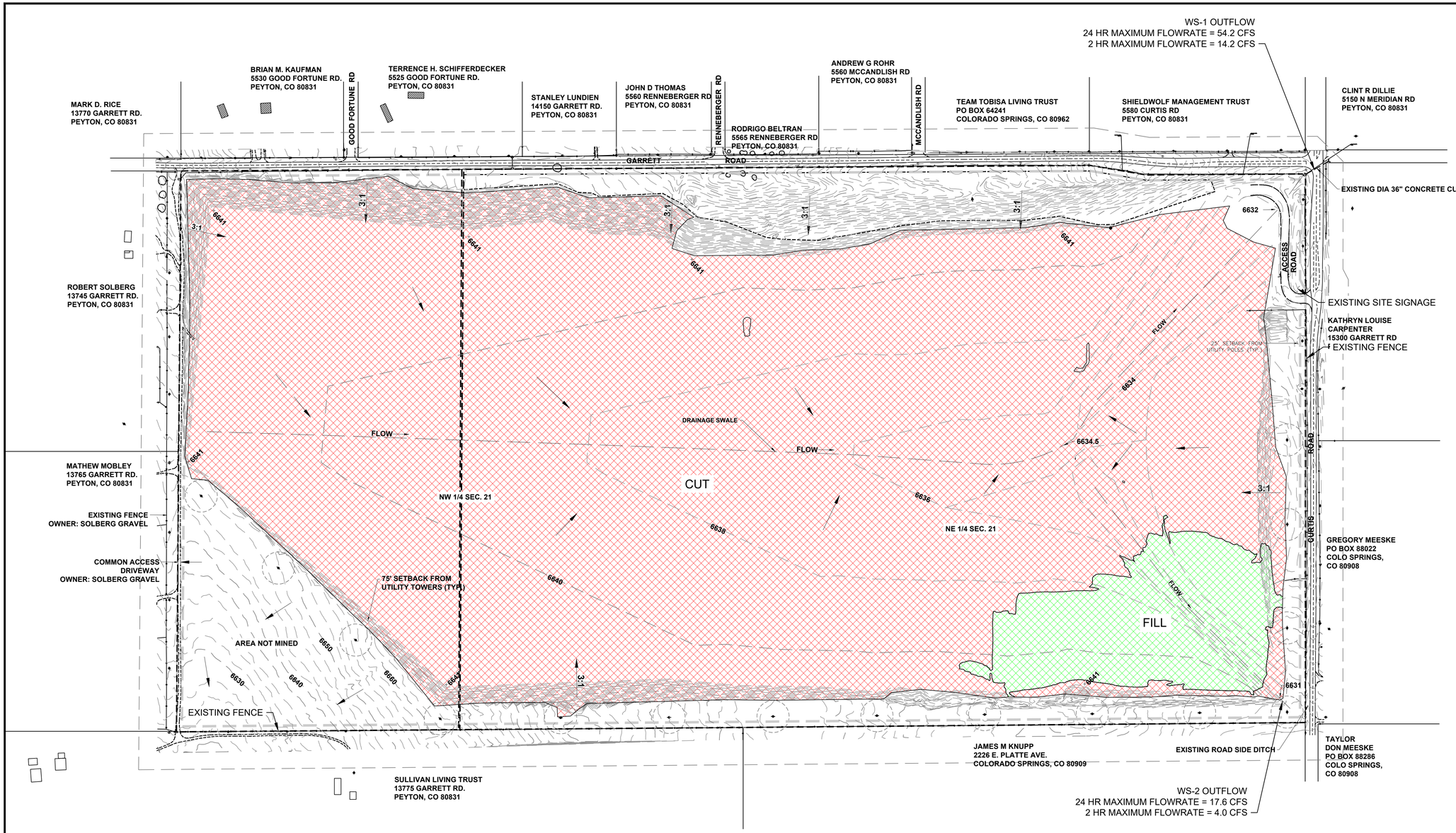

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LEGEND

- CURRENT PERMIT BOUNDARY (234 ACRES)
- PROPOSED AMENDMENT BOUNDARY (79 ACRES)
- AFFECTED AREA BOUNDARY (305 ACRES)
- PREVIOUSLY RECLAIMED
- EXISTING FENCE
- APPROXIMATE CUT
- APPROXIMATE FILL
- TRANSMISSION POLES (NEXTERA ENERGY)
- DISTRIBUTION POLES (MOUNTAIN VALLEY ELECTRIC)

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60537
08/10/2022
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STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

13745 GARRET ROAD
PEYTON, COLORADO

FINAL GRADING PLAN

C-101

Sheet: 03 of 08

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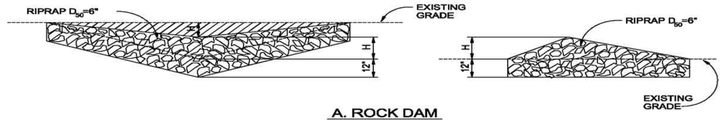
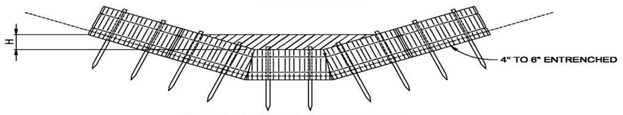
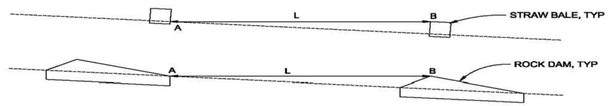


A. ROCK DAM



B. STRAW BALE CHECK DAM
(SEE STRAW BALE BARRIER INSTALATION)



L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

C. SPACING CHECK DAMS

CHECK DAM
NTS

CHECK DAM NOTES

INSTALLATION REQUIREMENTS

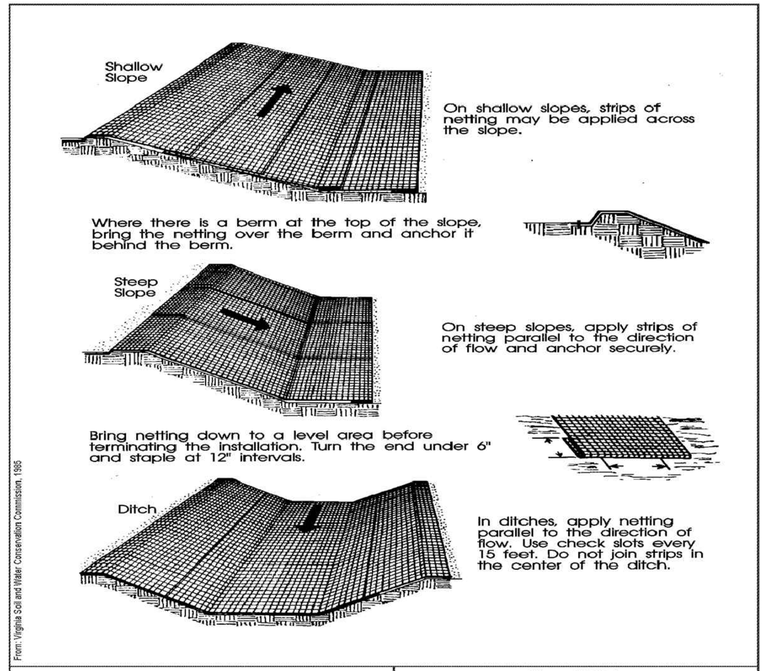
1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.
2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs
Stormwater Quality

Figure CD-1
Check Dam
Construction Detail and Maintenance Requirements



From: Virginia Soil and Water Conservation Commission, 1995

City of Colorado Springs
Storm Water Quality

Figure ECB-1
Erosion Control Blanket
Application Examples

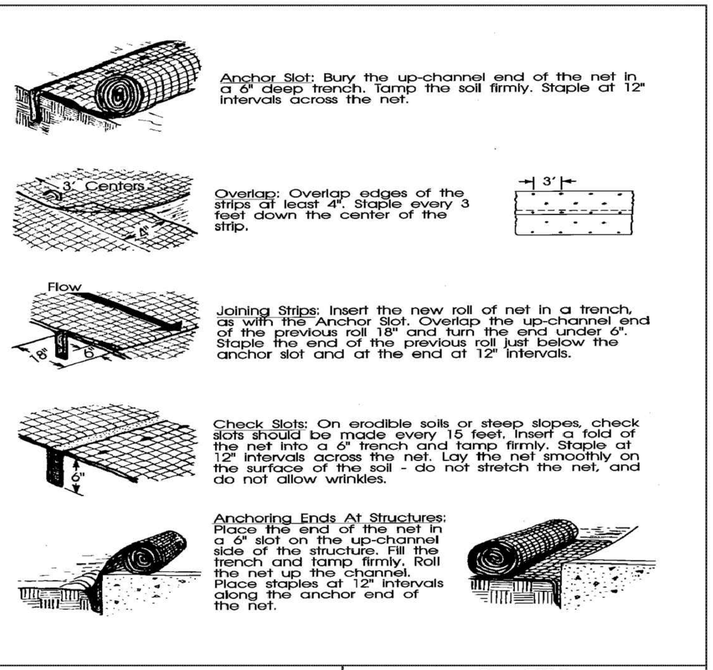


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Figure ECB-2
Erosion Control Blanket
Installation Requirements

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STORM WATER MANAGEMENT PLAN
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C-200

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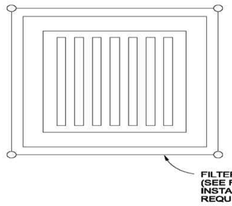


FILTER FABRIC INLET PROTECTION
NTS

FILTER FABRIC INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. SEE SILT FENCE FIGURE SF-2 FOR INSTALLATION REQUIREMENTS.

3. POSTS ARE TO BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

MAINTENANCE REQUIREMENTS

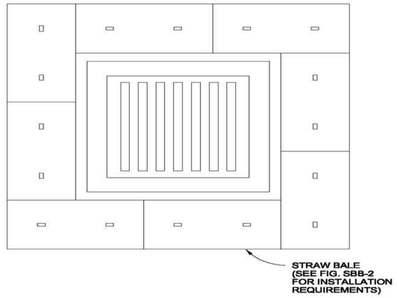
1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE INLET PROTECTION SHALL BE PROMPTLY REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND FILTER FABRIC WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

4. FILTER FABRIC PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED IN THE DRAINAGE AREA AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure IP-1 Filter Fabric Inlet Protection Construction Detail and Maintenance Requirements



STRAW BALE INLET PROTECTION
NTS

STRAW BALE INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.

3. SEE STRAW BALE BARRIER FIGURE SBB-2 FOR INSTALLATION REQUIREMENTS.

MAINTENANCE REQUIREMENTS

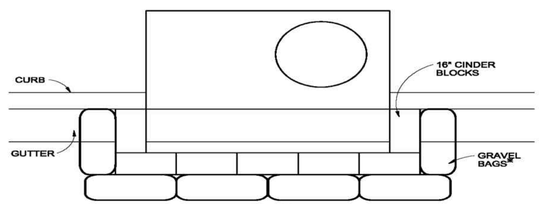
1. CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALES WHEN IT ACCUMULATES TO APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure IP-2 Straw Bale Inlet Protection Construction Detail and Maintenance Requirements



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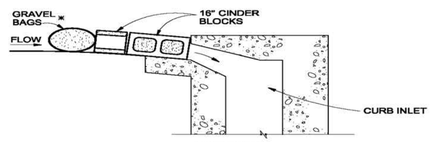


SECTION

BLOCK AND GRAVEL BAG*CURB INLET PROTECTION
NTS

BLOCK AND GRAVEL BAG*CURB INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. CONCRETE BLOCKS ARE TO BE LAID AROUND THE INLET IN A SINGLE ROW ON THEIR SIDES, ABUTTING ONE ANOTHER WITH THE OPEN ENDS OF THE BLOCK FACING OUTWARD.

3. GRAVEL BAGS ARE TO BE PLACED AROUND THE CONCRETE BLOCKS CLOSELY ABUTTING ONE ANOTHER SO THERE ARE NO GAPS.

4. GRAVEL BAGS ARE TO CONTAIN WASHED SAND OR GRAVEL APPROXIMATELY 3/4 INCH IN DIAMETER.

5. BAGS ARE TO BE MADE OF 1/4" INCH WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

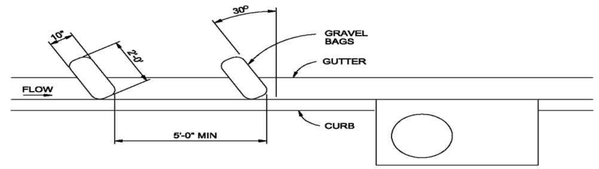
2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED WHEN SEDIMENT HAS ACCUMULATED TO APPROXIMATELY 1/2 THE DESIGN DEPTH OF THE TRAP.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

* AN ALTERNATE 3/4" TO 1" GRAVEL FILTER OVER A WIRE SCREEN MAY BE USED IN PLACE OF GRAVEL BAGS. THE WIRE MESH SHALL EXTEND ABOVE THE TOP OF THE CONCRETE BLOCKS AND THE GRAVEL PLACED OVER THE WIRE SCREEN TO THE TOP OF THE CONCRETE BLOCKS.

City of Colorado Springs Stormwater Quality	Figure IP-3 Block & Gravel Bag Curb Inlet Protection Construction Detail and Maintenance Requirements



CURB SOCK INLET PROTECTION
NTS

CURB SOCK INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. SOCK IS TO BE MADE OF 1/4 INCH WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.

3. WASHED SAND OR GRAVEL 3/4 INCH TO 4 INCHES IN DIAMETER IS PLACED INSIDE THE SOCK.

4. PLACEMENT OF THE SOCK IS TO BE 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

5. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED AT A MINIMUM 5 FEET APART.

6. AT LEAST 2 CURB SOCKS IN SERIES IS REQUIRED.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SOCK WHEN GUTTER WIDTH IS FILLED.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure IP-4 Curb Sock Inlet Protection Construction Detail and Maintenance Requirements

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STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

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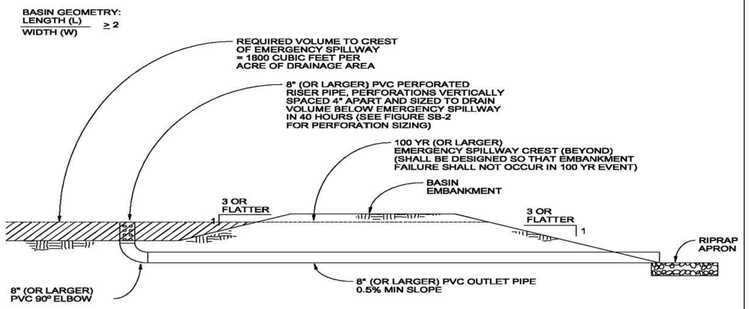


SEDIMENT BASIN
NTS

SEDMENT BASIN NOTES

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.

2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.

3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.

4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BAFFLES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.

5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.

3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs
Stormwater Quality

Figure SB-1
Sediment Basin
Construction Detail and Maintenance Requirements

Required Area per Row (in^2)

Design Volume (acre-ft)	Depth at Outlet (ft) 1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17
0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09
0.06	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05
0.04	0.30	0.15	0.10	0.08	0.06	0.05	0.04	0.03
0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02
0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

TABLE SB-1

Circular Perforation Sizing

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in^2) n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
n = Number of columns of perforations				
Minimum steel plate thickness		1/4"	5/16"	3/8"

TABLE SB-2

City of Colorado Springs
Stormwater Quality

Figure SB-2
Outlet Sizing
Application Techniques and Maintenance Requirements

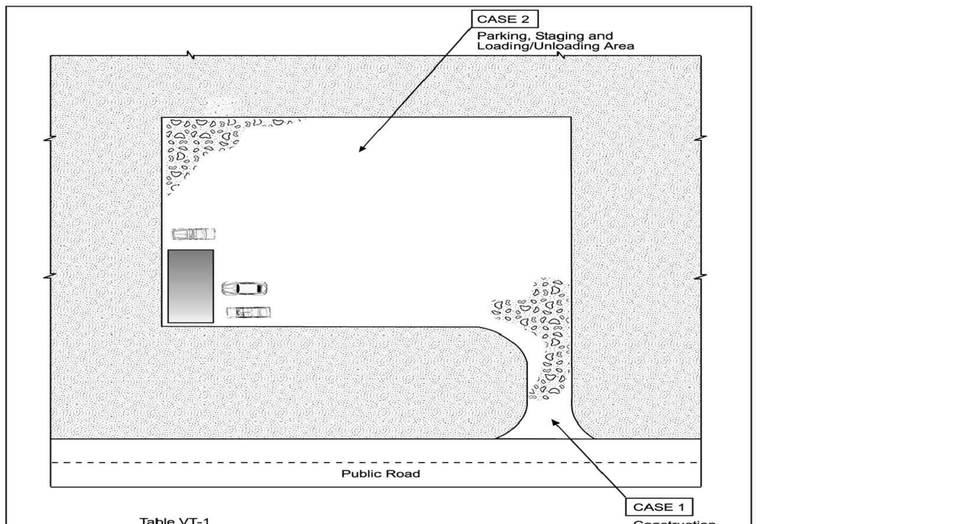
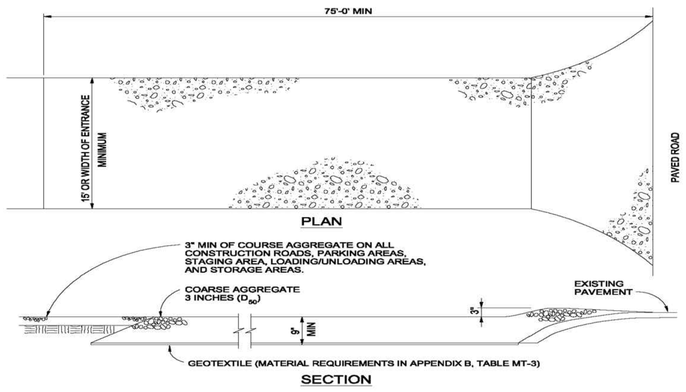


Table VT-1

	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs
Storm Water Quality

Figure VT-1
Vehicle Tracking
Application Examples



VEHICLE TRACKING
NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.

3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.

4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.

5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.

4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

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Sheet: 06 of 08

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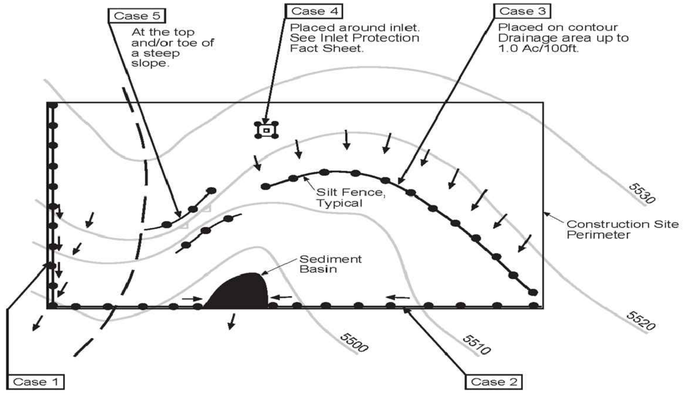


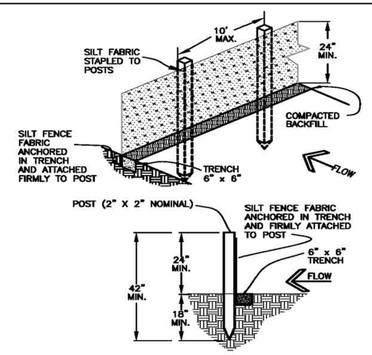
Table SF-1

Silt Fence Used as Perimeter Control	Case 1		Case 2
	DA < 0.25 AC	0.25 < DA < 1 AC	DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)	OK (1)
Area of Concentrated Flow	OK	NO (2)	NO (3)

(1) Temporary Swale or Straw Bale Barrier may be used as alternative to a Silt Fence.
(2) Check Dam may also be used as alternative to Silt Fence at low point.
(3) Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

City of Colorado Springs
Storm Water Quality

Figure SF-1
Silt Fence
Application Examples



SILT FENCE

SILT FENCE NOTES

INSTALLATION REQUIREMENTS

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.

3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.

4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.

5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3' ABOVE THE ORIGINAL GROUND SURFACE.

6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.

7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES; HIGHER FENCES MAY INPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

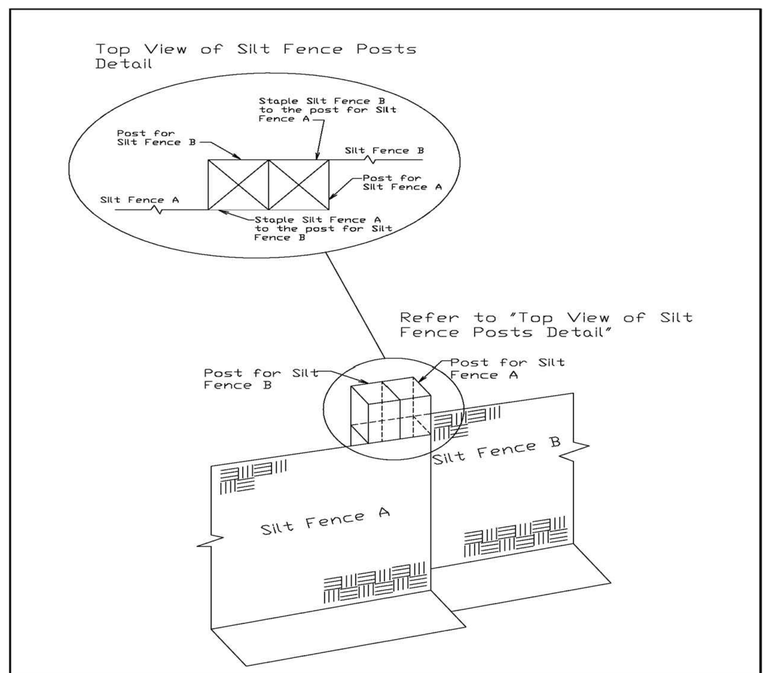
1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.

2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

City of Colorado Springs
Stormwater Quality

Figure SF-2
Silt Fence
Construction Detail and Maintenance Requirements



City of Colorado Springs
Stormwater Quality

Figure SF-3
Silt Fence Joint Tying
Construction Detail and Maintenance Requirements

HALEY ALDRICH

HALEY & ALDRICH, INC.
8101 E Prentice Ave, Suite 600
Greenwood Village, CO. 80111
Tel: 720-616-4400
www.haleyaldrich.com

Project No.:	0204990
Scale:	SHOWN
Date:	AUGUST 2022
Drawn By:	JS
Designed By:	JS
Checked By:	CL
Approved By:	ZS

Stamp:

COLORADO LICENSED
ZACHARY J SMITH
60537
08/10/2022
PROFESSIONAL ENGINEER

Rev.	Description	By	Date
0	ISSUE FOR PERMIT	ZS	08/12/22

STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

13745 GARRET ROAD
PEYTON, COLORADO

BMPS (4 OF 5)

C-203

Sheet: 07 of 08

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RECOMMENDED ANNUAL GRASSES

SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-50	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILLET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1

TEMPORARY SEEDING NOTES

INSTALLATION REQUIREMENTS

1. DISTURBED AREAS ARE TO BE SEEDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.
2. IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.
3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.
4. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.
5. ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.
6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.
7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.
8. ALL SEEDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).
9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDED AREAS TO ENSURE GROWTH.
2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.
3. SEEDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES.

City of Colorado Springs
Stormwater Quality

Figure TS-1
Temporary Seeding
Construction Detail and Maintenance Requirements

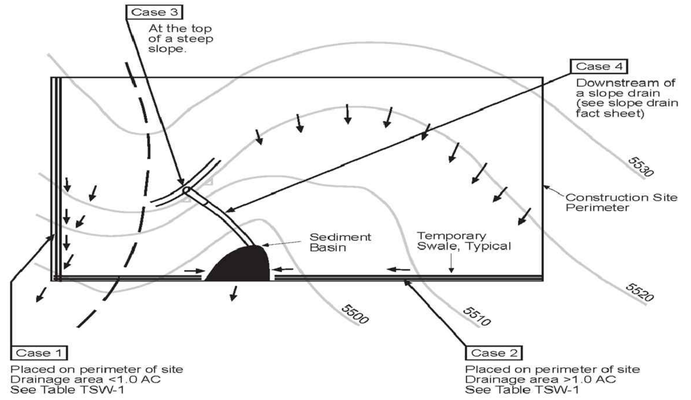


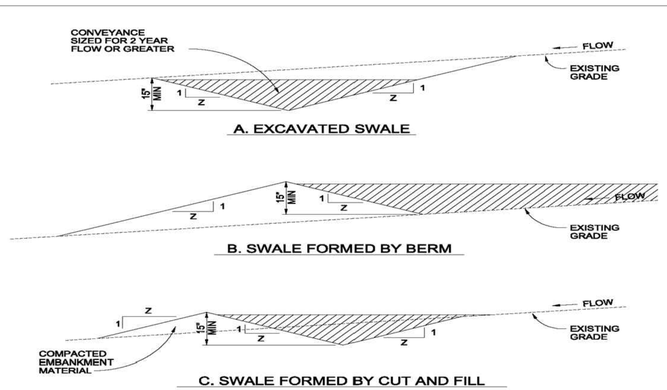
Table TSW-1

Temporary Swale Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)
Area of Concentrated Flow	NO (3)	NO (2)

(1) Silt Fence or Straw Bale Barrier may be used as alternative to a Temporary Swale.
(2) With Temporary Swales Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.
(3) Check Dam is required at concentrated flow for drainage areas >1.0 acres.

City of Colorado Springs
Storm Water Quality

Figure TSW-1
Temporary Swale
Application Examples



TEMPORARY SWALE
NTS

TEMPORARY SWALE NOTES

INSTALLATION REQUIREMENTS

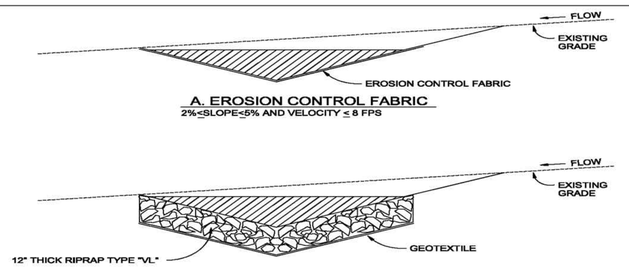
1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
5. SWALES WITH SLOPE > 2% SHALL BE LINED, SEE FIGURE TSW-3.
6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.
7. Z SHALL BE 3 OR GREATER.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.
3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.
4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs
Stormwater Quality

Figure TSW-2
Temporary Swale
Construction Detail and Maintenance Requirements



SWALE LINING
NTS

SWALE LINING NOTES

INSTALLATION REQUIREMENTS

1. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.
2. SWALES WITH EASILY EROSIVE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.
3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.
3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.
4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.
5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.

City of Colorado Springs
Stormwater Quality

Figure TSW-3
Swale Linings
Construction Detail and Maintenance

HALEY ALDRICH

HALEY & ALDRICH, INC.
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www.haleyaldrich.com

Project No.:	0204990
Scale:	SHOWN
Date:	AUGUST 2022
Drawn By:	JS
Designed By:	JS
Checked By:	CL
Approved By:	ZS

Stamp:

COLORADO LICENSED
ZACHARY J SMITH
60537
08/10/2022
PROFESSIONAL ENGINEER

Rev.	Description	By	Date
0	ISSUE FOR PERMIT	ZS	08/12/22

STORM WATER MANAGEMENT PLAN
PIONEER MATERIALS SOLBERG PIT

13745 GARRET ROAD
PEYTON, COLORADO

BMPS (5 OF 5)

C-204

Sheet: 08 of 08

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APPENDIX B
FIRM Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact **FEMA Map Service Center** (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

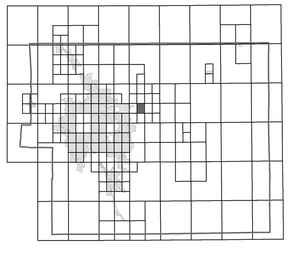
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)

REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 13 SOUTH, RANGE 64 WEST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D Boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A	Cross section line
23 — 23	Transect line
97° 07' 30.00" 32° 22' 30.00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 13
6000000 FT	5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

PANEL 0562G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 562 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0562	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0562G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

NOTES TO USERS

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NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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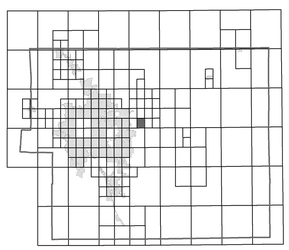
El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map



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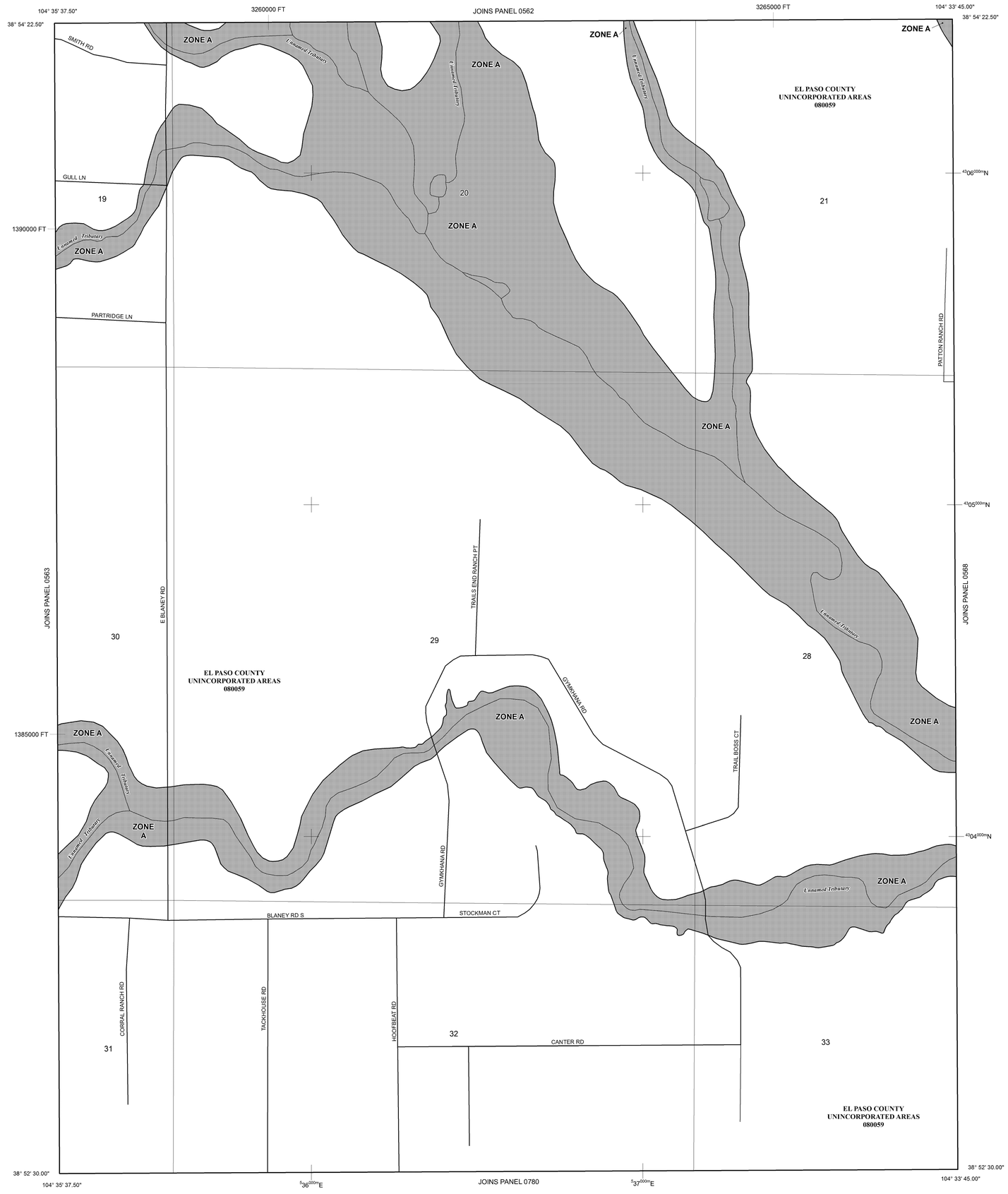

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D Boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A	Cross section line
23 — 23	Transect line
97° 07' 30.00" 32° 22' 30.00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 13
6000000 FT	5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

PANEL 0564G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 564 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0564	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0564G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

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Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact **FEMA Map Service Center** (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

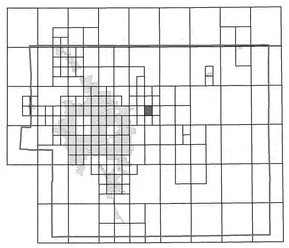
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)

REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

Panel Location Map



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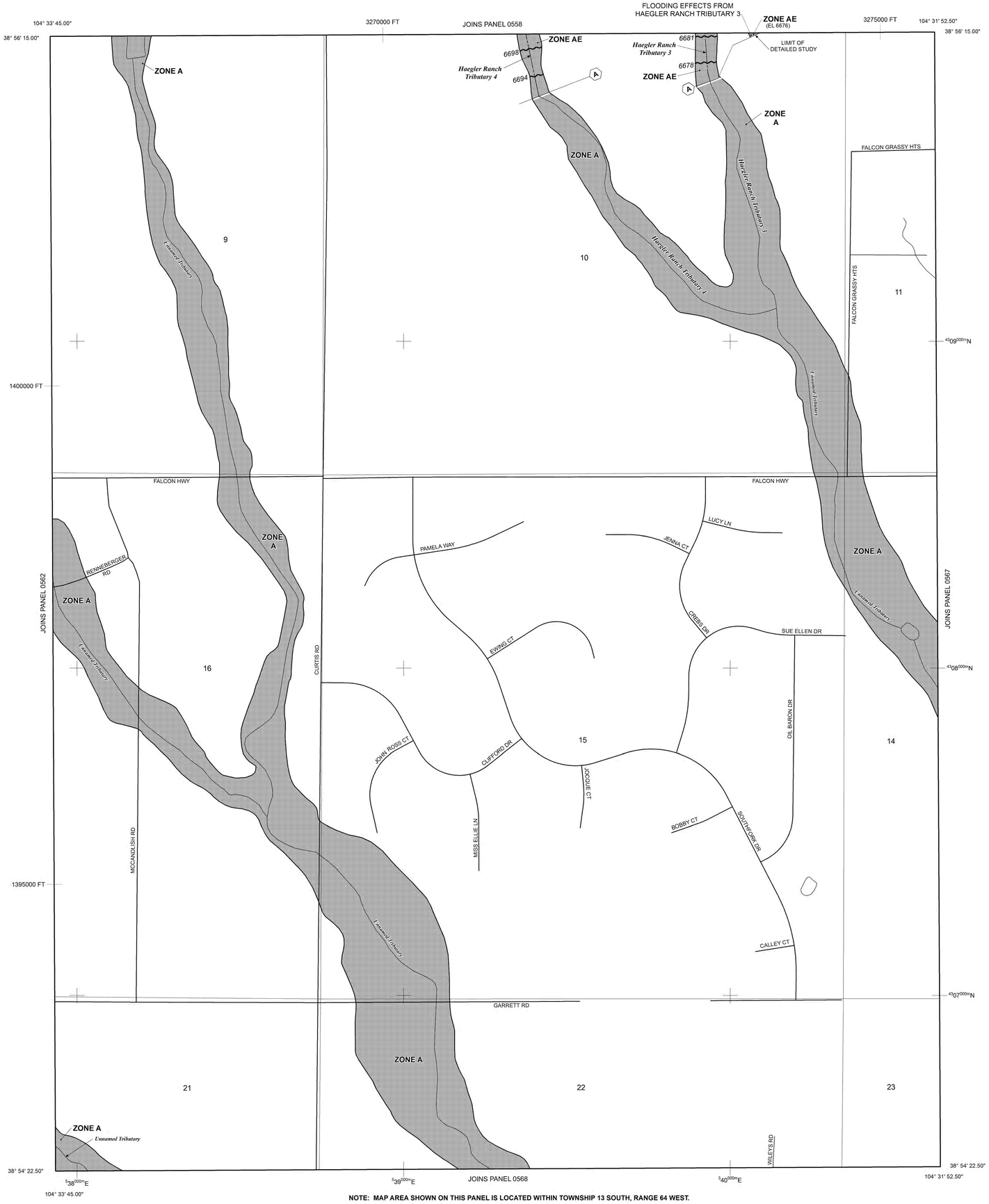

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 13 SOUTH, RANGE 64 WEST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

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ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

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Floodplain boundary
Floodway boundary
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Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
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M1.5 — River Mile

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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0566G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 566 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0566	G

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MAP NUMBER 08041C0566G

MAP REVISED DECEMBER 7, 2018

Federal Emergency Management Agency

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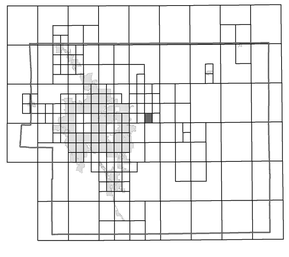

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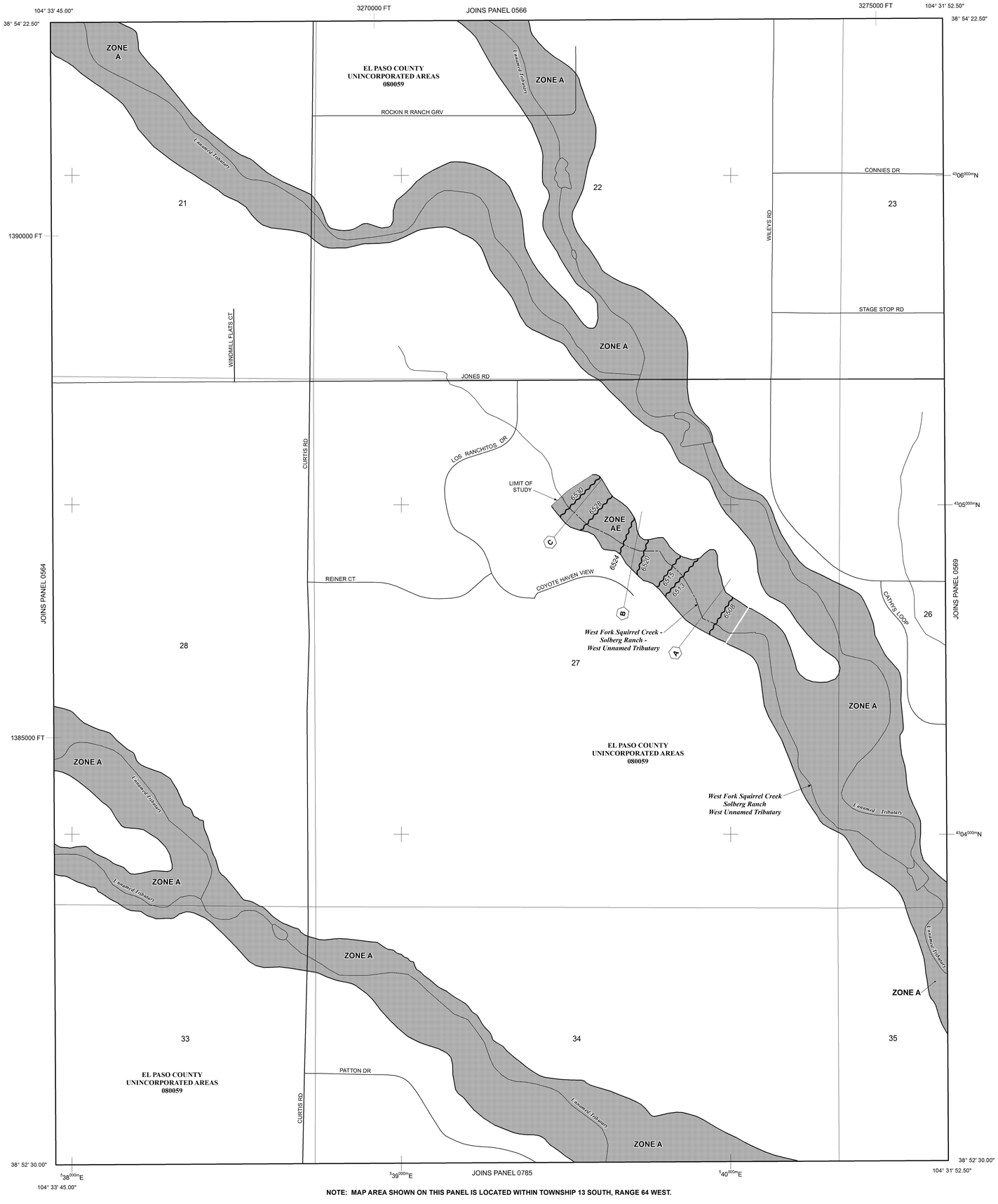

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Floodway boundary
Zone D Boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
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* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

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97° 07' 30.00" / 32° 22' 30.00" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
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MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

PANEL 0568G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 568 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0568	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0568G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

APPENDIX C
Web Soils Survey

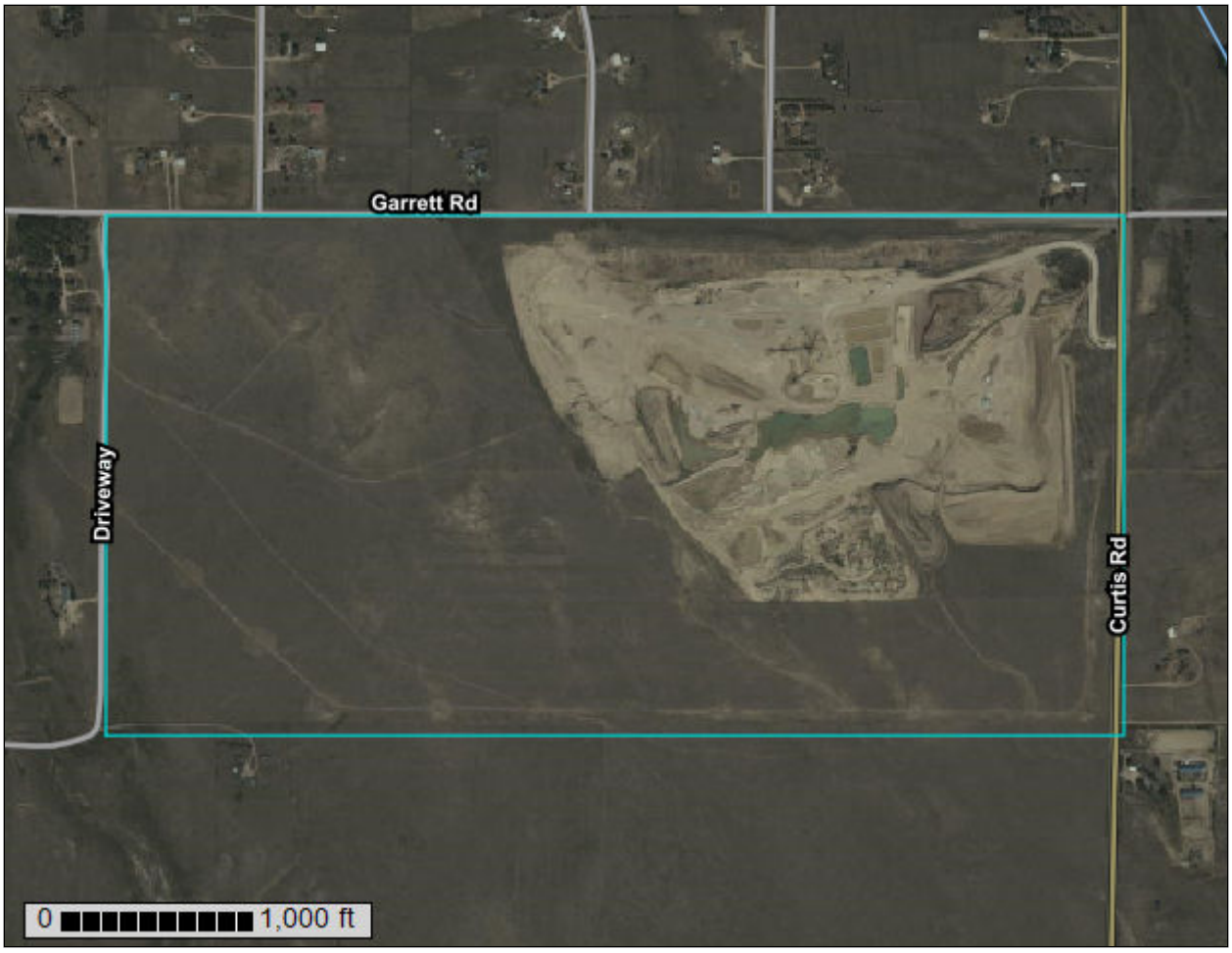
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Paso County Area, Colorado



July 22, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	141.3	43.2%
83	Stapleton sandy loam, 3 to 8 percent slopes	185.7	56.8%
Totals for Area of Interest		**327.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Hills, flats
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent

Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

83—Stapleton sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369z
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Stapleton and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stapleton

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

A - 0 to 11 inches: sandy loam
Bw - 11 to 17 inches: gravelly sandy loam
C - 17 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls
Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

Other soils
Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

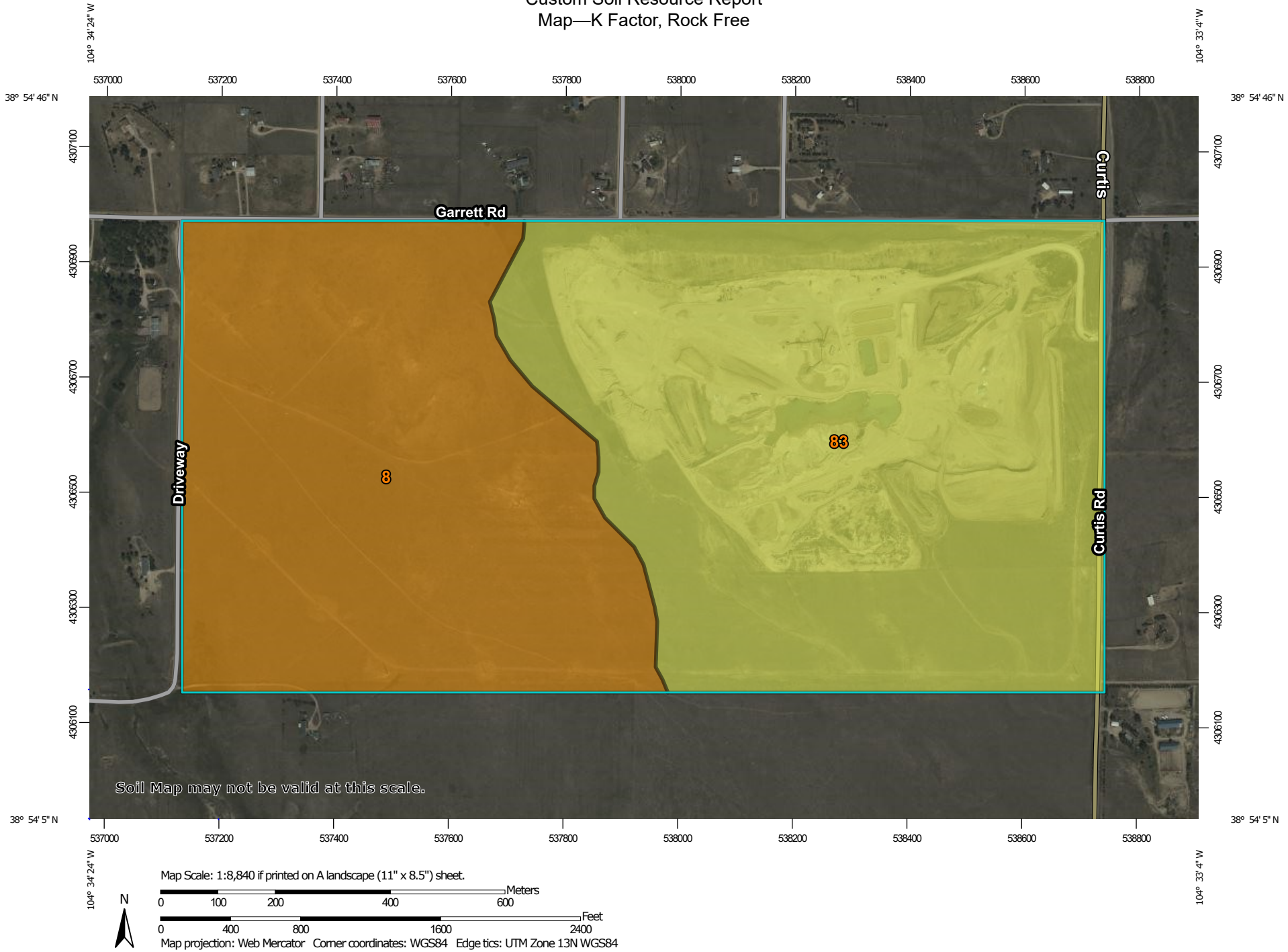
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Rock Free

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kf (rock free)" indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Factor K does not apply to organic horizons and is not reported for those layers.



Map Scale: 1:8,840 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 19, Aug 31, 2021

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Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

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Table—K Factor, Rock Free

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	.10	141.3	43.2%
83	Stapleton sandy loam, 3 to 8 percent slopes	.20	185.7	56.8%
Totals for Area of Interest			**327.0**	**100.0%**

Rating Options—K Factor, Rock Free

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

K Factor, Rock Free

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

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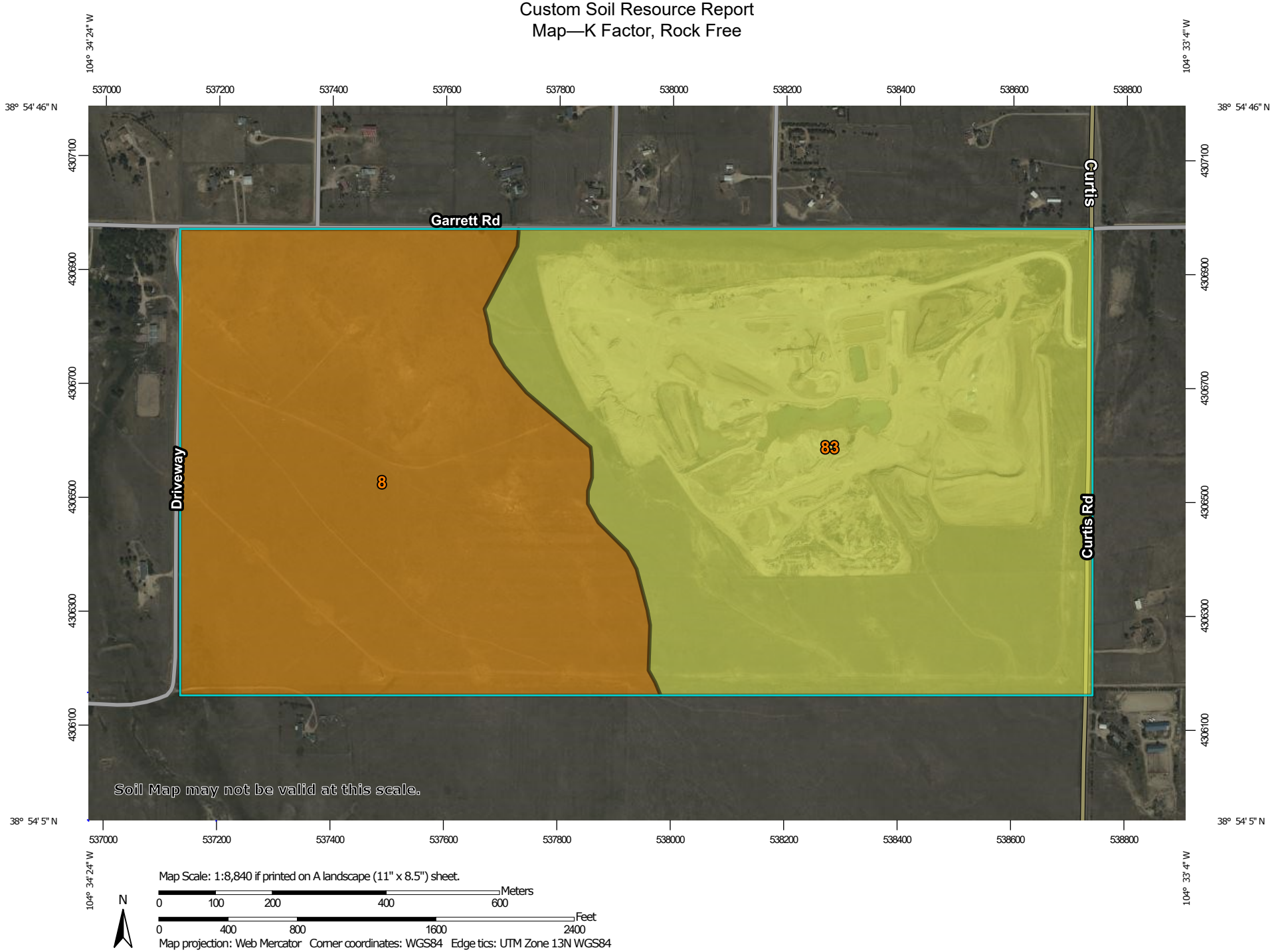
104° 34' 24" W
104° 33' 4" W
38° 54' 46" N
38° 54' 5" N
537000
537200
537400
537600
537800
538000
538200
538400
538600
538800
4307100
4306900
4306700
4306500
4306300
4306100
Garrett Rd
Curtis
Driveway
Curtis Rd
8
83
Soil Map may not be valid at this scale.
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N
Meters
0
100
200
400
600
Feet
0
400
800
1600
2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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Totals for Area of Interest			**327.0**	**100.0%**

Rating Options—K Factor, Rock Free

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

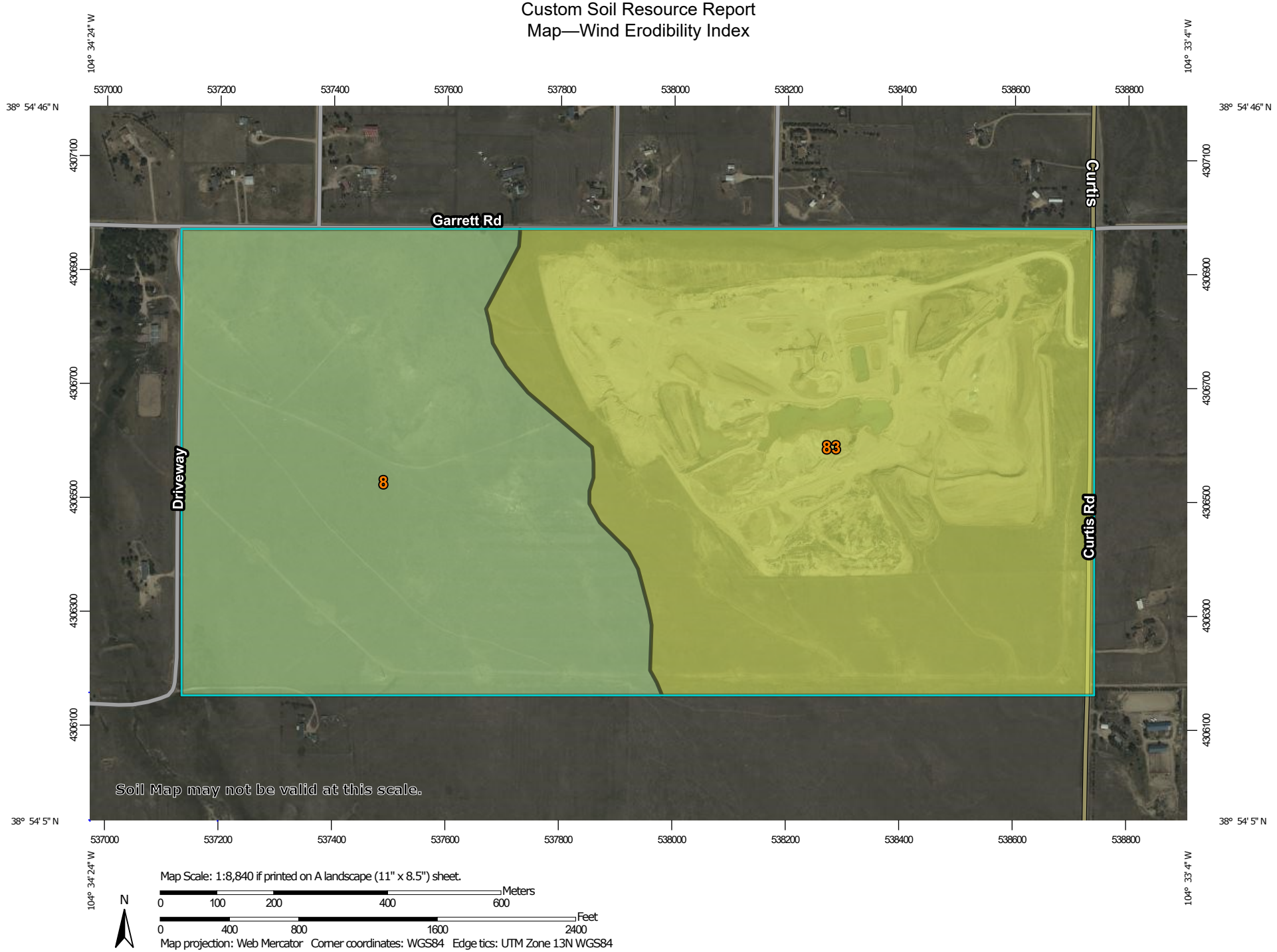
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Wind Erodibility Index

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Custom Soil Resource Report
Map—Wind Erodibility Index



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

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Interstate Highways
US Routes
Major Roads
Local Roads

Background

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Table—Wind Erodibility Index

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	134	141.3	43.2%
83	Stapleton sandy loam, 3 to 8 percent slopes	86	185.7	56.8%
Totals for Area of Interest			**327.0**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

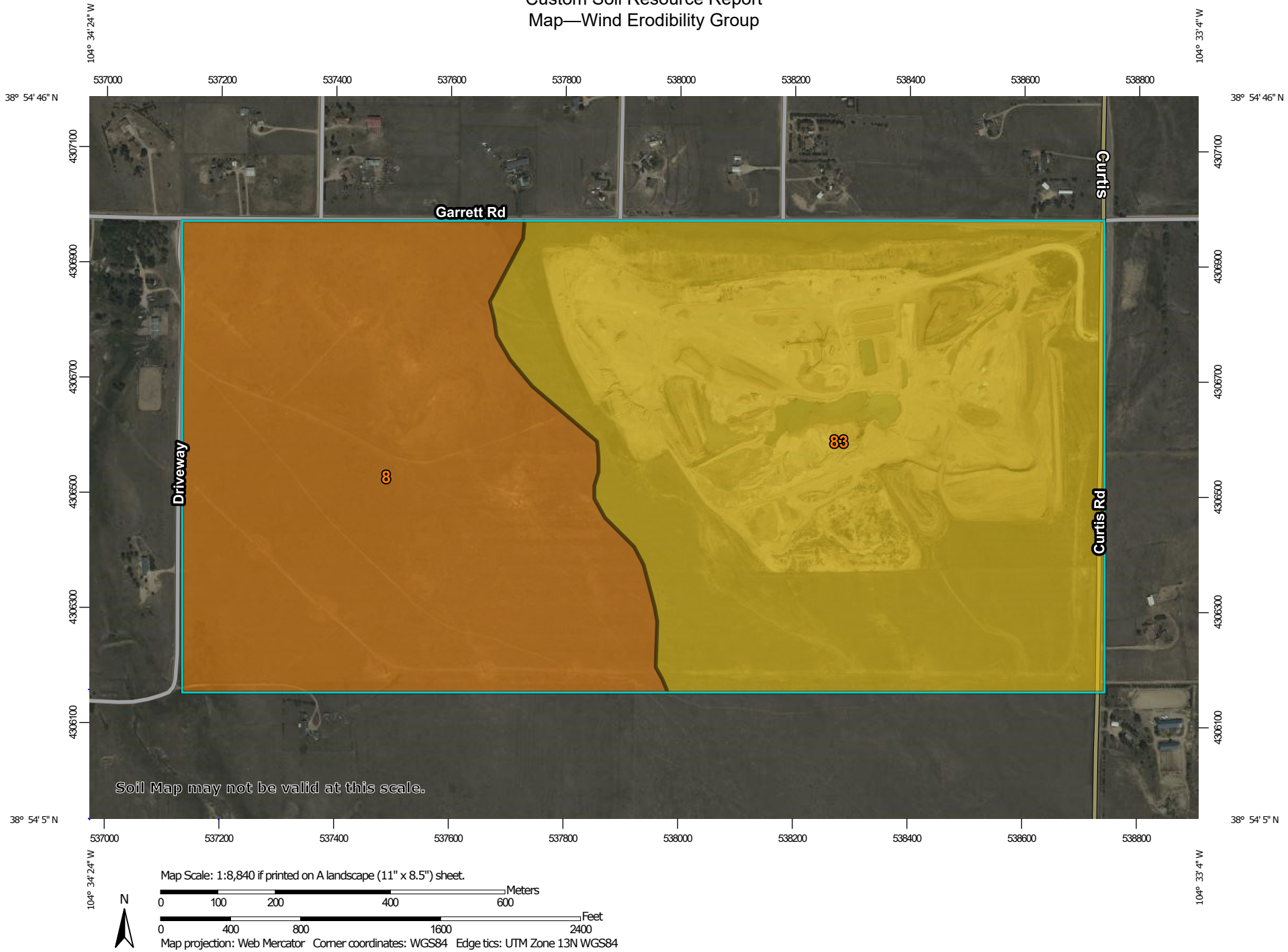
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Wind Erodibility Group

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Custom Soil Resource Report
Map—Wind Erodibility Group



Map Scale: 1:8,840 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

1
2
3
4
4L
5
6
7
8
Not rated or not available

Soil Rating Lines

1
2
3
4
4L
5
6
7
8
Not rated or not available

Soil Rating Points

1
2
3
4
4L
5
6
7
8
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Wind Erodibility Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	2	141.3	43.2%
83	Stapleton sandy loam, 3 to 8 percent slopes	3	185.7	56.8%
Totals for Area of Interest			**327.0**	**100.0%**

Rating Options—Wind Erodibility Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

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APPENDIX D
Maintenance and Inspection Reports

Comprehensive SWMP Inspection Report

Project: Solberg Gravel Pit
Company: Pioneer Sand Company Inc.
Address: 630 Plaza Drive Suite 150
Highlands Ranch, CO 80129

Permit No. COG501778
Weather: _____
Year/Quarter: 2020/1 2 3 4
Date/Time: _____

AREA INSPECTED	WITHIN COMPLIANCE		PROCEDURE TO BRING INTO COMPLIANCE
	Yes	No	
Vehicle Tracking Control			
Haul Routes/Travel Routes			
Active Mine Areas			
Processing Plant Area			
Product Stockpiles			
Settling Ponds			
Non-Stormwater Discharges			
Equipment Storage/Parking			
Maintenance Area			
Fuel Storage			
Other Fluids/Chemical Storage			
Reclamation Stockpiles			
Revegetated Areas			
Employee Parking Area			
Trash Receptacle (outdoor)			
Equipment Wash Area			
Perimeter Inspection			

CERTIFICATION AND COMPLIANCE STATEMENT

In the judgment of either 1) the person conducting the site inspection, or 2) the permittee or duly authorized representative, the facility is in compliance with the terms and condition of the COG500000 Permit, with respect to Part I.J.2: O Yes O No "I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."

Inspector: Print name and title _____

Signature: _____ **Date:** _____

Permittee or Duly Authorized Representative:

Print name and title _____

Signature: _____ **Date:** _____

APPENDIX E
Modifications to the SWMP

SWPPP Modification Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

APPENDIX F
Copy of CDPS General Permit Stormwater Discharges

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division

CDPS GENERAL PERMIT COG500000

FOR
DISCHARGES FROM SAND AND GRAVEL MINING AND PROCESSING (AND OTHER NONMETALLIC MINERALS EXCEPT FUEL)

AUTHORIZATION TO DISCHARGE UNDER COLORADO DISCHARGE PERMIT SYSTEM

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), sand and gravel mining and processing operations, and facilities that mine and process other nonmetallic minerals except fuel, are authorized to discharge from authorized locations throughout the State of Colorado to specified surface waters of the State. Such discharges shall be in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit specifically authorizes the entity identified in the certification of this permit to discharge process water and stormwater at the location(s) described in the certification of this permit, to waters of the state as identified in the certification of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) days of the date of issuance of the final permit determination, per the Colorado Discharge Permit System Regulations, 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Colorado Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

The authorization to discharge under this permit is in effect from the date of the certification of this permit until the expiration date identified below.

This permit shall expire at midnight December 31, 2021

Issued and Signed this 13th day of October 2016

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Janet S. Kieler

Digitally signed by Janet S. Kieler
DN: dc=local, dc=dphe, ou=Divisions, ou=WQC, ou=Users, cn=Janet S. Kieler, email=janet.kieler@state.co.us
Date: 2016.10.13 16:46:39 -06'00'

Janet Kieler, Permits Section Manager
Water Quality Control Division

ISSUED AND SIGNED: October 13, 2016

EFFECTIVE DATE OF PERMIT: **January 1, 2017**

TABLE OF CONTENTS

PART I

A. COVERAGE UNDER THIS PERMIT – Process water and stormwater

1. Activities Covered

This permit authorizes the discharge of **process water** and **stormwater runoff** to surface waters of the state, from active and inactive eligible facilities engaged in mining and processing of sand and gravel (and other nonmetallic minerals, except fuel). Such facilities are described by Standard Industrial Classification (SIC) Code Major Group 14, unless a specific SIC code is made ineligible under Part I.A.2. of this permit. Appendix A provides a description of SIC Code Major Group 14 facilities.

This permit also authorizes the discharge of **stormwater runoff** to surface waters of the state from the following non-mining activities that are located **at** sand and gravel facilities: asphalt batch plants (SIC code 2951), concrete batch plants (SIC Code 3273), and asphalt and concrete recycling industrial activities.

This permit contains both process water and stormwater provisions, as follows:

- Applicable to **ALL** discharges: *Parts I.A, I.B, I.D, I.E, and I.F; Part II; Part III; and all Appendices*
- Applicable to **process water** discharges, **only**: *Part I.C.1*
- Applicable to **stormwater** discharges, **only**: *Part I.C.2 and Parts I.G through Q*

a. Eligible Process water discharges:
Process water discharges from facilities that produce the commodities listed below are specifically eligible for coverage under this permit.

- Dimension stone (SIC code 1411)
- Crushed stone (SIC code 1422, 1423, 1429)
- Construction sand and gravel (SIC code 1442)
- Industrial sand (SIC code 1446)
- Kaolin and Ball Clay (SIC code 1455)
- Clay, Ceramic, and Refractory Minerals, Not Elsewhere Classified (SIC code 1459)
- Graphite (SIC code 1499)

The following process water discharges are eligible for coverage under this permit, unless made ineligible under Part I.A.2,:

i. mine dewatering, which includes:
   - any water, including groundwater, seepage, and stormwater (precipitation and surface runoff), that is impounded or that collects in the mine pit (surface or underground workings) and is pumped, drained, or otherwise removed from the mine through the efforts of the mine operator;
   - additionally, for construction sand and gravel facilities and industrial sand facilities only, wet pit overflow caused solely by direct rainfall and/or groundwater seepage.

ii. process generated wastewater, which includes any wastewater used in slurry transport of mined materials, air emissions control, and processing exclusive to mining (40 CFR Part 436);

iii. water used in sand and gravel processing (e.g., sorting, screening, crushing, and classifying);

iv. stormwater runoff that becomes comingled with the above listed wastewaters before the discharge point.

b. Eligible Stormwater discharges:
Stormwater discharges from all SIC Major Group 14 facilities, and from asphalt batch plants (SIC code 2951); concrete batch plants (SIC code 3273); and asphalt and concrete recycling activities conducted at such facilities, are eligible for coverage under this permit. Please see Appendix C - Definitions for how the terms 'asphalt batch plant' and 'asphalt concrete' are used in this permit.

Stormwater discharges from the following areas at all SIC code Major Group 14 facilities are eligible for coverage under this permit unless made ineligible under Part I.A.2:

i. industrial plant yards;
ii. immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
iii. material handling sites, including those used for asphalt and concrete recycling activities, asphalt batch plants, and concrete batch plants;
iv. sites used for storage and maintenance of material handling equipment;
v. shipping and receiving areas;
vi. manufacturing buildings, including asphalt batch plants and concrete batch plants;
v. storage areas and stockpiles of raw material, intermediate products, byproducts, finished products or waste products (including topsoil, overburden, and materials associated with asphalt and concrete recycling activities, asphalt batch plants, and concrete batch plants);
vii. areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater;
viii. all disturbed areas (other than those subject to the process water discharge provisions above), including mine pit out slopes; and,
ix. stormwater run-on that commingles with stormwater discharges associated with sand and gravel mining and processing.

c. Allowable non-stormwater discharges:

The following non-stormwater discharges, as applicable to a facility, are authorized by this permit provided that appropriate control measures are implemented to minimize erosion and sediment transport resulting from such discharges, and the non-stormwater component(s) of the discharge and the control measure(s) used are identified in the Stormwater Management Plan (SWMP):

i. Uncontaminated condensate (external atmospheric condensation, only) from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
ii. Landscape (including reclamation activities) watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
iii. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blow down or drains); and
iv. Process water discharges as characterized in Part I.A.1.a above.

2. Limitations on Coverage

This permit does not authorize the discharges or activities listed below. Permittees may seek individual or alternate general permit coverage for such discharges, as appropriate and available.

a. Stormwater discharges associated with construction activity that disturbs one acre or more;
b. Process water discharges from asphalt batch plants (resulting from the production of asphalt concrete);
c. Process water discharges from concrete batch plants, including drum and truck wash water;
d. Stormwater and process water discharges from placer mining industrial activities (SIC Major Group 10);
e. Discharges to receiving waters designated as "outstanding waters" in accordance with 5 CCR 1002-31 (Regulation 31 - The Basic Standards and Methodologies For Surface Water);
f. Discharges that are currently covered under an individual permit or an alternative general permit;
g. Discharges of non-stormwater, except those authorized non-stormwater discharges listed in Part I.A.1.c;
h. Discharges currently covered by a Division Low Risk Guidance Document;
i. Process water discharges solely to ground water if such discharges are subject to direct regulation by the EPA or by implementing agencies under Section 25-8-202(7) of the Water Quality Control Act or Senate Bill 181 (including the Division of Reclamation, Mining and Safety). This exclusion does not apply to discharges to groundwater that have a hydrologic connection to surface waters and for which the Division determines the surface waters requirements of Regulations 31 through 39, and 61 apply;

j. Process water discharges from operations that produce the following commodities (SIC Code in parentheses):

- Gypsum (1499);
- Asphaltic minerals (1499);
- Asbestos and wollastonite (1499);
- Barite (1479);
- Fluorspar (1479);
- Salines from brine lakes (2899);
- Borox (1474);
- Potash (1474);
- Phosphate Rock (1475);
- Sodium sulfate (1474);
- Frasch sulfur (1479);
- Bentonite (1459);
- Magnesite (1459);
- Diatomite (1499);
- Jade (1499);
- Novaculite (1499); and
- Tripoli (1499)

3. Chemical addition

Discharges with chemical addition (including, but not limited to chemical additions at any point in the treatment process, release agents, etc), are eligible for coverage under this permit only if the Division approves the use of the specific chemical(s) and provides notification of such approval to the permittee.

To request Division approval, the permit applicant must submit a list of proposed chemicals, including dosage rates, used in the treatment process. Additionally, the applicant must submit an MSDS for each chemical proposed for use. In granting the use of such chemicals, the Division may impose additional limitations and monitoring requirements in the permit certification. Chemicals used in waters that will or may be discharged to waters of the State must be used in accordance with all state and federal regulations, and in strict accordance with the manufacturer's site-specific instructions.

4. Obtaining and maintaining Authorization under this permit

a. Application Requirements: To obtain authorization for discharges under this permit:

i. The applicant must meet the eligibility requirements under Parts I.A.1.
ii. For stormwater discharges, the applicant must develop a Stormwater Management Plan (SWMP) in accordance with the requirements of this permit prior to submitting an application to the Division, and must certify in the application that a SWMP has been completed.
iii. The applicant must submit a complete, accurate, and signed permit application, on a form provided by the Division, by mail or hand delivery to the Division at least **60 days** before the anticipated date of discharge; or for stormwater-only discharges, at least **60 days** before the facility commences industrial activity that may result in a discharge of stormwater. The applicant must sign the application in accordance with the requirements of Part I.F (Reporting and Recordkeeping) of this permit. The complete application shall be submitted to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PCP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

iv. The applicant(s) must receive written notification that the Division granted permit coverage.

b. Permit Certification Procedures: Following review of the application or other information, the Division may:

i. request such additional information as is reasonably necessary to evaluate the discharge;
ii. delay the authorization to discharge pending further review;
iii. notify the applicant that additional terms and conditions are necessary;
iv. provide a compliance schedule in the certification for terms and conditions that are new or more stringent than previous conditions;
v. deny the authorization to discharge under this general permit.

The Division will notify the applicant in writing of its request or determination for items i. – v.

c. Alternative permits

i. Division required alternate permit coverage: The Division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit. In this case, the Division will notify the applicant or permittee that an individual or alternate permit application is required.

ii. Permittee request for alternate permit coverage: A permittee authorized to discharge under this general permit may request to be excluded from coverage by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge. The permittee's authorization to discharge under this general permit is terminated on the effective date of the individual permit.

d. Permit Expiration, and Continuation

A permittee desiring continued coverage under this general permit must reapply at least **180 days** in advance of the permit expiration date. The Division will determine if the permittee may continue to discharge under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
ii. The issuance and effect of a termination issued by the Division; or
iii. The issuance or denial of an individual permit for the facility's discharges; or
iv. A formal permit decision by the Division not to reissue this general permit, at which time the Division will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or
v. The Division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

5. Transfer of permit coverage

A permittee may transfer coverage under this general permit to a new discharger if all of the following conditions are met:

a. The permittee (existing discharger) and new discharger submit a complete and accurate Notice of Transfer form, signed by the permittee and the new legal entity, to the Division at the address listed in Part I.A.4, at least **30 days** prior to the proposed transfer date. The Notice of Transfer form must contain a specific date for transfer of permit responsibility, coverage, and liability.
b. The type of industrial activities and practices remain substantially unchanged.
c. The Division does not notify the permittee of the need to submit a new application for coverage under the general permit or for an individual permit.
d. The Division does not notify the permittee and new discharger of its intent to revoke coverage under the general permit.

6. Modifying an existing permit

A permittee may modify an existing permit certification if all of the conditions identified below are met.

Modifications include but are not limited to: adding or removing discharge outfalls, introducing new or additional chemicals to the treatment process or effluent, modifying treatment in a manner that would result in a new or altered discharge in terms of location or effluent quality, **changing permit coverage from one that authorizes process water discharges (or process water and stormwater discharges), to one that authorizes stormwater discharges only** because the process water discharge has been terminated, etc. Note that modifications may be subject to a fee, consistent with Part II of the permit.

a. The permittee must submit a complete and accurate Modification Form, signed by the permittee, to the Division at the address listed in Part I.A.4, at least **60 days** prior to implementing any requested modifications that result in a discharge to state waters.
b. The permittee is not authorized to discharge under the modified conditions until the modified certification is issued and effective.

7. Permit Termination Procedures

To terminate permit coverage, the permittee must submit a complete and accurate Notice of Termination form, signed by the permittee, to the Division at the address listed in Part I.A.4. The permittee's authorization to discharge under this permit terminates as notified by the Division.

A Notice of Termination request that does not meet one or more of the conditions identified below is not valid. The permittee is responsible for complying with the terms of this permit until notified by the Division that the authorization is terminated.

Conditions for a Notice of Termination request include:

a. Termination Criteria for facilities **with** Division of Reclamation, Mining and Safety (DRMS) financial and performance warranties

   The Division may approve a Notice of Termination request when the following criteria are met for the entire sand and gravel facility:

   i. all permitted process water discharges authorized by this permit (as applicable to the facility), have ceased; and
   ii. all permitted stormwater discharges authorized by this permit have ceased because the industrial activity (including soil disturbing activities) has ceased, and no significant materials or industrial pollutants remain exposed to stormwater (i.e., all raw materials, intermediate products, byproducts, finished products and waste products have been removed or are not exposed to stormwater); and
   iii. the DRMS has released the permittee from further responsibility for the facility, and the permittee provides documentation with the Notice of Termination request that DRMS approved the applicable financial and performance warranty release.

b. Termination Criteria for facilities **without** DRMS financial and performance warranties

   The Division may approve a Notice of Termination request when the following criteria are met for the entire sand and gravel facility:

   i. all permitted process water discharges authorized by this permit (as applicable to the facility), have ceased; and
   ii. all permitted stormwater discharges authorized by this permit have ceased because the industrial activity (including soil disturbing activities) has ceased, and no significant materials or industrial pollutants remain exposed to stormwater (i.e., all raw materials, intermediate products, byproducts, finished products and waste products have been removed or are not exposed to stormwater); and
   iii. the site has attained final stabilization, with little evidence of soil erosion or other runoff problem, as follows:
      a) a uniform, perennial vegetative cover has been established with a plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed;
      b) all alternatives to vegetation must be permanent, must stabilize all disturbed areas, and all stabilization control measures must be selected, installed, and implemented following good engineering, hydrologic, and pollution control practices adequate to prevent pollution or degradation of State waters;

iv. the permittee provides documentation with the Notice of Termination request that the above conditions for termination have been met for the facility, and includes photographic documentation of final stabilization conditions.

c. The permittee has obtained authorization under an individual or alternative general permit for all facility discharges.

d. No Exposure Certification. If the facility authorized to discharge stormwater-only under this permit becomes eligible for a no exposure exclusion from permitting under 5 CCR 1002-61.3(2)(h), the permittee may submit a complete and accurate No Exposure Certification to the Division at the address listed in Part I.A.4. The Division will terminate permit coverage using information provided in the No Exposure Certification form; the permittee does not need to submit a Notice of Termination.

The Division may, after consultation with the permittee and upon good cause, revise the vegetative cover requirements on a case-by-case basis.

B. PERMIT COMPLIANCE – Process water and stormwater

A permittee must comply with all the terms and conditions of this permit. Violation of the terms and conditions specified in this permit may be subject to civil and criminal liability pursuant to sections 25-8-601 through 612, C.R.S.. Correcting a permit violation does not remove the original violation. Failure to take any required corrective actions, as detailed in Part I.K (Corrective Actions), constitutes an independent, additional violation of this permit and may be subject to civil and criminal liability. However, where corrective action is triggered by an event that does not itself constitute permit noncompliance, such as an exceedance of an applicable benchmark, there is no permit violation unless the permittee fails to take the required corrective action within the relevant deadlines.

1. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal guidelines and regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

C. EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.5; the Colorado Discharge Permit System Regulations, Section 61.8(2), 5 C.C.R. 1002-61; and the effluent limitation guidelines found 40 CFR Part 436 (Mineral Mining and Processing Point Source Category), the permitted discharge shall not contain effluent parameter concentrations that exceed the effluent limitations identified in this Part, and specified in the permit certification.

1. Process Water Discharge Effluent Limitations

The permittee shall monitor the effluent consistent with the requirements identified in Tables C.1.1 through C.1.6 and specified in the permit certification, as applicable to the permitted feature.

"Report Only" monitoring requirements for additional site-specific parameters may be included in the permit certification to obtain additional effluent quality data.

The permittee must conduct all required monitoring and reporting consistent with Parts I.E and I.F of this permit, unless otherwise noted.

a. Dimension Stone facilities (SIC code 1411)

Table C.1.1 – Applicable Limitations

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder or In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
00530	Total Suspended Solids, mg/l	30	45	----	----	2x/month	Weekly	Grab
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab
Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Note 1: Flow Limit – The chronic flow limit is equal to the flow rate provided in the permit application, and will be stated in the certification.

Note 2: Flow Measurement – If power is not available, flow may be measured on an instantaneous basis.

Note 3: Oil and Grease: – A visual observation of the discharge for each permitted outfall must be made 2 times per month or weekly, as stated in the certification. In the event an oil sheen or floating oil is observed, a grab sample shall be collected weekly, analyzed, and reported on the DMR. In addition, corrective action shall be taken immediately to mitigate the discharge of oil.

Note 4: Total Flow – Total flow is the cumulative flow of the discharge for the quarter or month in million gallons. If continuous flow monitoring is not conducted, the permittee must calculate the total flow for the month or quarter using the 30-day average flow (measured) and the number of days the facility discharged within the month or quarter.

Note 5: Total Dissolved Solids (TDS) – Analysis for salinity, measured as TDS, and a requirement to report quarterly total flow will be included in the permit certification for all discharges to the Colorado River Basin.

Note 6: Total Phosphorus – Analysis for Total Phosphorus, as P, will be included in the permit certification for all discharges to waters with a control regulation for P. Monitoring requirements and effluent limitations vary depending on the applicable control regulation (Regulations 71 through 74).

Note 7: Selenium Loading Calculation -- To determine selenium loading values, use the calculation formula below:

Loading in lbs/day = (30 day average effluent flow in **MGD** × 30 day average selenium concentration in **mg/l**) × 8.34

1000 ug/l = 1 mg/l

b. Crushed Stone, and Construction Sand and Gravel (SIC codes 1422, 1423, 1429, 1442)

Table C.1.2 – Applicable Limitations

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder/ In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
00530	Total Suspended Solids, mg/l	30	45	----	----	2x/month	Weekly	Grab
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab
Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Notes 1-7 are located with Table C.1.1

c. Industrial Sand (SIC code 1446)

Table C.1.3 – Applicable Limitations for mine dewatering; and process-generated wastewater from facilities that DO NOT use HF Flotation

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder/ In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
Federal Effluent Limitation Guidelines								
00530	Total Suspended Solids, mg/l[8]	25	----	45	----	2x/month	Weekly	Grab
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab
Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Notes 1-7 are located with Table C.1.1

Note 8: Precipitation Event Relief: As specified by the ELG, any overflow from facilities subject to Subpart D – Industrial Sand shall not be subject to the limitations for total suspended solids if the facility is designed, constructed, and maintained to contain or treat the volume of waste water which would result from a 10-year, 24-hour precipitation event.

c. Industrial Sand (SIC code 1446) (continued)

Table C.1.4 – Applicable Limitations for process-generated wastewater from facilities that use HF Flotation

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder/ In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
00951	Total Fluoride, mg/l[9]	----	----	2.0	----	2x/month	2x/month	Grab
Federal Effluent Limitation Guidelines								
51412	Total Suspended Solids, lbs/1000 lbs production[8]	0.023 lbs per 1,000 lbs total product	----	0.046 lbs per 1,000 lbs total product	----	2x/month	2x/month	Calculated
00951	Total Fluoride, lbs/1000 lbs production[8]	0.003 lbs per 1,000 lbs total product	----	0.006 lbs per 1,000 lbs total product	----	2x/month	2x/month	Calculated
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab

Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Notes 1-7 are located with Table C.1.1

Note 8: Precipitation Event Relief: As specified by the ELG, any overflow from facilities subject to Subpart D – Industrial Sand shall not be subject to the limitations for total suspended solids if the facility is designed, constructed, and maintained to contain or treat the volume of waste water which would result from a 10-year, 24-hour precipitation event.

Note 9: Fluoride Water Quality Standard Based Effluent Limitation: The acute water quality based standard limitation of 2.0 mg/l for fluoride applies only on segments that are designated for domestic water supply use.

d. Kaolin; Ball Clay; and Clay, Ceramic, and Refractory Minerals, Not Elsewhere Classified, Excluding Bentonite and Magnesite (SIC codes 1455 and 1459)

Table C.1.5 – Applicable Limitations

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder/ In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
00530	Total Suspended Solids, mg/l	30	45	----	----	2x/month	Weekly	Grab
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab
Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Notes 1-7 are located with Table C.1.1

e. Graphite Mining (SIC code 1499)

Table C.1.6 – Applicable Limitations

ICIS Code	Parameter	Limitations				Monitoring Frequency		Sample Type
		30 day average	7 day average	Daily Max.	2 year average	Minor Facilities	Major Facilities	
General Permit Requirements								
50050	Flow, MGD[1]	Limit in cert.	----	Report	----	Monthly (Continuous or Instantaneous[2])	2x/month (Continuous or Instantaneous[2])	Recorder/ In-situ
00400	pH, s.u.	----	----	6.5-9.0	----	2x/month	Weekly	Grab
84066	Oil and Grease, mg/l	----	----	----	----	2x/month	Weekly	Visual[3]
03582	Oil and Grease, mg/l	----	----	10	----	Contingent	Weekly	Grab[3]
Federal Effluent Limitation Guidelines								
00530	Total Suspended Solids, mg/l	10	----	20	----	2x/month	Weekly	Grab
74010	Total Iron, mg/l	1	----	2	----	2x/month	Weekly	Grab
Site Specific Requirements								
51500 1	Flow, Total, MG[4]	Report Quarterly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
51500 EG	Flow, Total, MG[4]	Report Monthly Total	----	----	----	Continuous or Instantaneous[2]	Continuous or Instantaneous[2]	Calculated
70295	Total Dissolved Solids, mg/l[5]	Report	----	----	----	Quarterly	Quarterly	Grab
00665	Total Phosphorus (as P), mg/l[6]	Various	Various	Various	----	Various	Various	Composite
00665	Total Phosphorus (as P), lb/month[6]	Various	----	----	----	Various	Various	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months	Various	----	----	----	Various	Various	Calculated
01323	Selenium, Potentially Dissolved, µg/l	Various	----	Various	Various	2x/month	Weekly	Grab
01323	Selenium, Potentially Dissolved, lbs/day[7]	Various	----	Various	----	2x/month	Weekly	Calculated
00094	Electrical Conductivity (EC), dS/m	Various	----	----	----	Quarterly	Quarterly	Grab
Various	Other Pollutants of Concern	Various	----	Various	Various	Various	Various	Grab or Composite
Various	Whole Effluent Toxicity (WET)							
	Chronic	Stat Diff and IC25≥IWC			----	Quarterly	Quarterly	3 Composites/ Test
	Acute	LC50>100%			----			Grab

Notes 1-7 are located with Table C.1.1

Note 8: As specified by the ELG, for facilities subject to Subpart AL – Graphite, only that volume of water resulting from precipitation that exceeds the maximum safe surge capacity of a process waste water impoundment may be discharged from that impoundment. The height difference between the maximum safe surge capacity level and the normal operating level must be greater than the inches of rain representing the 10-year, 24-hour rainfall event as established by

the National Climatic Center, National Oceanic and Atmospheric Administration for the locality in which such impoundment is located.

2. Stormwater Discharge Effluent Limitations

a. Practice Based Effluent Limitations

i. Minimize exposure
The permittee must minimize the exposure of pollutant sources associated with manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff. Minimizing exposure may include locating these industrial materials and activities inside or protecting them with storm resistant coverings.

ii. Good housekeeping
The permittee must keep clean all areas exposed to stormwater runoff, as necessary to minimize potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.

iii. Maintenance of Control Measures
The permittee must maintain all control measures (structural and non-structural) used to achieve the effluent limits required by this permit in effective operating condition. The permittee must conduct maintenance of control measures in accordance with Part.I.G (Control Measures) of this permit.

iv. Spill prevention and response procedures
The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such potential spills. The permittee must at a minimum implement:

a) Procedures for regularly inspecting, testing, maintaining, and repairing all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters.
b) Procedures for plainly labeling containers that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
c) Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, or procedures for material storage and handling;
    - Permittees must implement control measures (secondary containment or equivalent protection) for any chemical (e.g., petroleum products, pesticides, magnesium chloride, treatment chemicals, etc.) located at the facility to contain all spills and prevent any spilled material from entering state waters. The containment system must have sufficient capacity to contain 10% of the volume of containers, or the volume of the largest container plus 10%, whichever is greater.
d) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available; and
e) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Contact information must be in locations that are readily accessible and available.

v. Erosion and sediment controls
The permittee must stabilize exposed areas and manage runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions taken to meet this effluent limit, flow velocity dissipation devices must be placed at discharge locations and within outfall channels where necessary to minimize erosion and/or settle out pollutants.

vi. Management of runoff and Pollutant Removal
The permittee must divert; infiltrate; reuse; contain; or treat stormwater runoff to remove pollutants, in a manner that minimizes pollutants in stormwater discharges from the site.

vii. Salt storage piles or piles containing salt

The permittee must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, and implement appropriate measures to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the piles is not discharged or if discharges from the piles are authorized under another permit.

viii. Employee Training

The permittee must develop and implement a training program for employees. Training must be conducted at least **annually**, and must address the following, as applicable to the trainee's activities: the site-specific control measures used to achieve the effluent limits in this Part, components and goals of the SWMP, monitoring and inspection procedures, and other applicable requirements of the permit. At a minimum, the following individuals must be trained:

a) Employee(s) overseeing implementation of, revising, and amending the SWMP.
b) Employee(s) performing installation, inspection, maintenance, and repair of control measures.
c) Employee(s) who work in areas of industrial activity subject to this permit.
d) Employee(s) who conduct stormwater discharge monitoring required by Part.I.I of this permit.

ix. Non stormwater discharges

The permittee must eliminate non-stormwater discharges not authorized by this or any other CDPS permit, or conducted in accordance with a Division Low Risk Guidance document.

x. Waste, Garbage and Floatable Debris

The permittee must minimize the discharge of waste, garbage, and floatable debris from the site by keeping exposed areas free of such materials or by intercepting them before they are discharged.

xi. Dust generation and vehicle tracking of industrial materials

The permittee must minimize generation of dust and off-site tracking of raw, final, or waste materials.

b. Water Quality Based Effluent Limitations

i. Water Quality Standards

Discharges authorized under this permit must be controlled as necessary to meet applicable water quality standards.

The Division expects that compliance with all other terms and conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time the permittee becomes aware, or the Division determines, that the authorized discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must conduct, document, and report corrective action as required in Part I.K (Corrective Actions).

If information in the application, required reports, or from other sources indicates that compliance with the other terms and conditions of this permit will not control the discharge as necessary to meet applicable water quality standards, the Division may include a site-specific water quality-based effluent limitation in the permit certification, or require the permittee to obtain coverage under an individual permit. The Division may include a compliance schedule for any new or revised water quality-based effluent limitation included in a permit certification, as appropriate. The Division may also include additional terms and conditions in the permit certification to determine whether compliance with the remaining terms and conditions of the permit will control the discharge as necessary to meet applicable water quality standards, or to monitor compliance with a site-specific water quality-based effluent limitation.

ii. Additional requirements for discharge to water quality impaired waters

a) **Existing** Discharge to an Impaired Water **with** an EPA Approved or Established TMDL. Where a pollutant and applicable water quality standard has been identified, the Division may apply the monitoring requirements of Part I.I.3 in the permit certification.

When the Division determines that compliance with the other terms and conditions of this permit will not control the discharge as necessary to be consistent with the assumptions and requirements of the TMDL, including any wasteload allocation for the facility, the Division may include a site-specific water quality-based effluent limitation in accordance with Part I.C.2.b.i above in the permit certification, or inform the permittee if coverage under an individual permit is necessary. The Division may also include additional terms and conditions in the permit certification to determine whether the discharge is consistent with the assumptions and requirements of the TMDL.

b) **Existing** Discharge to an Impaired Water **without** an EPA Approved or Established TMDL. Where a pollutant and applicable water quality standard has been identified, the Division may apply the monitoring requirement of Part I.I.3 in the permit certification. Note that this provision also applies to situations where the Division determines that the discharge may need to be controlled as necessary to meet water quality standards in a downstream water segment, even if the discharge is to a receiving water that is not specifically identified on a Section 303(d) list.

c) **New** Discharge to an Impaired Water. Where a pollutant and applicable water quality standard has been identified, the Division will make a determination whether the discharge has reasonable potential to cause or contribute to an exceedance of the applicable water quality standard for the identified pollutant. Where reasonable potential is determined, the Division will include monitoring requirements of Part I.I.3 and/or a site-specific water quality-based effluent limitation in accordance with Part I.C.2.b.i. The water quality-based effluent limitation will be narrative, and consistent with the following statement:

> "Discharges authorized under this permit must be controlled as necessary to meet the applicable water quality standard for [*the subject pollutant*] at the point of discharge (end of pipe)."

iii. Additional requirements for discharges to waters designated as critical habitat for threatened and endangered species

Where a pollutant and applicable water quality standard has been identified, the Division may apply the monitoring requirements of Part I.I.3 in the permit certification. The Division may also include additional terms and conditions in the permit certification to determine whether compliance with the remaining terms and conditions of the permit will control the discharge as necessary to eliminate or minimize the potential for no more than minor detrimental effects to listed species in regards to receiving water mixing (October 2005 Memorandum of Agreement (MOA) entered into by the Division, EPA, and USFWS).

iv. Additional requirements for new or increased discharges to reviewable waters

If the Division determines that compliance with the other terms and conditions of this permit will not control the discharge as necessary to be consistent with the applicable antidegradation requirements, the Division may include additional terms and conditions in accordance with Part I.C.2.b.i above in the permit certification, or inform the permittee if coverage under an individual permit is necessary.

D. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS – Process water and stormwater

The Division may require WET testing for discharges on a site-specific basis, to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life", as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. WET testing requirements are identified below. Appendix B identifies the test results that constitute a failure and/or violation of WET; and automatic compliance response triggers and associated required actions.

1. WET Test Requirements

a. Acute Testing Requirements: For facilities where acute WET testing is required, the permittee shall conduct an acute 48-hour WET test using Ceriodaphnia dubia, and an acute 96-hour WET test using Pimephales promelas. Acute tests shall be conducted as a static replacement test using a single effluent grab sample. The permittee shall conduct each acute WET test in accordance with the 40 CFR Part 136 methods described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, Fifth Edition, October 2002 (EPA-821-R-02-012) or its most current edition.

b. Chronic Testing Requirements: For facilities where chronic WET testing is required, the permittee shall conduct the chronic WET test using Ceriodaphnia dubia and Pimephales promelas, as a static renewal 7-day test using three separate composite samples. The permittee shall conduct each chronic WET test in accordance with the 40 CFR Part 136 methods described in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002 (EPA-821-R-02-013) or the most current edition.

For the chronic Ceriodaphnia dubia test, the termination requirement shall be where 80% or more of the surviving control females having produced their third brood. If this requirement is not met, the test is considered invalid and retesting must be performed during the monitoring period. The permittee will be required to submit documentation showing that the appropriate number of the surviving control females have had their third brood with the WET information summary that is submitted to the Division with the WET test results.

c. Acute and Chronic Testing Requirements: The minimum dilution series to be used at the facility will be specified in the certification. If the permittee uses more dilutions than prescribed, and accelerated testing is to be performed, the same dilution series shall be used in the accelerated testing as was used in the failed test.

All WET tests shall be done at the frequency listed in Part I.C.1. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting period when the sample was taken. (i.e., WET testing results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, etc.) The permittee shall submit all laboratory statistical summary sheets, summaries of the determination of a valid, invalid or inconclusive test, and copies of the chain of custody forms, along with the DMR for the reporting period.

If a test is considered invalid, the permittee is required to perform additional testing during the monitoring period to obtain a valid test result. Failure to obtain a valid test result during the monitoring period shall result in a violation of the permit for failure to monitor.

2. Toxicity Reopener

This permit may be reopened and modified to include additional or modified numerical permit limitations, new or modified compliance response requirements, changes in the WET testing protocol, the addition of both acute and chronic WET requirements, or any other conditions related to the control of toxicants.

E. GENERAL MONITORING AND SAMPLING REQUIREMENTS – Process water and stormwater

1. Monitoring Periods and Monitored outfalls

Monitoring requirements in this permit begin in the first full month following the permit effective date. Applicable monitoring requirements apply to each outfall authorized by this permit, except as otherwise exempt from monitoring as a "substantially identical outfall" (for stormwater only - see Part I.H.1 of the permit).

2. Representative sampling and Monitoring points

Samples and measurements taken for the respective identified monitoring points required in the permit certification shall be representative of the volume and nature of the wastestream and/or effluent. Monitoring points shall be so designed or modified so that a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters. All samples shall be taken at the monitoring points specified in the permit certification and, when specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without a modification request submitted to and approval by the Division. The permittee shall provide access to the

Division to sample at these points. Except where specified, grab samples shall be used for all monitoring and shall not be combined.

3. Adverse Weather Conditions

When adverse weather conditions prevent sample collection according to the relevant monitoring schedule, the permittee must take a substitute sample, as possible, during the remaining monitoring period; for stormwater, the permittee must take a substitute sample during the next qualifying storm event. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms.

Adverse weather does not exempt the permittee from having to file timely DMRs. The permittee must report any failure to monitor and indicate the basis for not sampling during the usual reporting period.

4. Analytical requirements

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the division in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.

The permittee may use an equivalent and acceptable alternative to an EPA-approved method without EPA review where the requirements of 40 CFR Part 136.6 are met and documented. The permittee may use an Alternative Test Procedure (ATP). An ATP is defined as a way in which an analyte is identified and quantified that is reviewed and approved by EPA in accordance with 40 CFR Part 136.4 for nationwide use, or a modification to a 40 CFR 136 approved method that is reviewed and approved by EPA in accordance with 40 CFR Part 136.5 for limited use.

a. The permittee must select a test procedure that is “sufficiently sensitive” for all monitoring conducted in accordance with this permit.

b. The PQLs for specific parameters are listed in tables E.4-1, below.

c. If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the final numeric effluent limit shall be considered the AWQC for the purpose of determining whether a test method is sufficiently sensitive.

d. When the analytical method which complies with the above requirements has an ML greater than the permit limit, and the permittee’s analytical result is less than the ML, the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the method is sufficiently sensitive. For parameters that have a report only limitation, and the permittee’s analytical result is less than the ML, (where X = the ML) “< X” shall be reported on the DMR.

e. In the calculation of average concentrations (i.e. 7- day, 30-day average, 2-year rolling average) any individual analytical result that is less than the ML shall be considered to be zero for the calculation purposes. When reporting:

   - If all individual analytical results are less than the ML, the permittee shall report either “BDL” or “<X” (where X = the ML), following the guidance above.

   - If one or more individual results is greater than the ML, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the ML, it must be reported as a value.

Table E. 4-1. Practical Quantitation Limits (PQLs) – Metals, inorganics, nutrients, radiological parameters, and nonylphenol

Parameter	Reporting Units	PQL	Parameter	Reporting Units	PQL
Aluminum	µg/L[1]	15	Ammonia Nitrogen	mg/L[2] N	0.2
Antimony	µg/L	2	Nitrate+Nitrite Nitrogen	mg/L N	0.1
Arsenic	µg/L	1	Nitrate Nitrogen	mg/L N	0.1
Barium	µg/L	1	Nitrite Nitrogen	mg/L N	0.05
Beryllium	µg/L	2	Total Kjeldahl Nitrogen	mg/L N	0.5
Boron	µg/L	20	Total Nitrogen	mg/L N	0.5
Cadmium	µg/L	0.5	Total Inorganic Nitrogen	mg/L N	0.2
Calcium	µg/L	120	Phosphorus	mg/L P	0.05[3]
Chromium	µg/L	20	BOD/CBOD	mg/L	2
Chromium, Trivalent	µg/L	---	Chloride	mg/L	2
Chromium, Hexavalent	µg/L	20[3, 4]	Total Residual Chlorine, DPD	mg/L	0.5
Copper	µg/L	2	Total Residual Chlorine, Amperiometric	mg/L	0.05
Iron	µg/L	20[3]	Cyanide	µg/L	10[3]
Lead	µg/L	0.5	Fluoride	mg/L	0.5
Magnesium	µg/L	35	Phenols	µg/L	30
Manganese	µg/L	2	Sulfate	mg/L	2
Mercury	µg/L	0.2[3]	Sulfide	mg/L H_2S	0.1
Mercury, Low Level	µg/L	0.002	Total Dissolved Solids (TDS)	mg/L	10
Molybdenum	µg/L	0.5	Total Suspended Solids (TSS)	mg/L	5
Nickel	µg/L	1	Radium-226	pCi/L	1
Selenium	µg/ L	1[3]	Radium-228	pCi/L	1
Silver	µg/ L	0.5	Uranium	µg/ L	1
Sodium	µg/ L	150	Nonylphenol, ASTM D7065	µg/ L	10
Thallium	µg/ L	0.5			
Zinc	µg/ L	10			

[1] µg/L = micrograms per liter
[2] mg/L = milligrams per liter
[3] PQL established based on parameter specific evaluation
[4] For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

5. <u>Flow Measuring Device</u> – Process water discharges

The permittee shall provide flow measuring and metering to give representative values of throughput and treatment of the wastewater system. The flow measuring device may be equipped with a local flow indication instrument and a flow indication-recording-totalization device suitable for providing permanent flow records.

At the request of the Division, the permittee must be able to show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow discharging from the point source.

6. Extra monitoring

If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

F. REPORTING AND RECORDKEEPING – Process water and stormwater

1. Routine Reporting of data – DMRs

As directed by the Division, the permittee may be required to report the data gathered in compliance with Parts I.C on a **monthly** basis for those facilities subject to a WLA and associated concentration based WQBEL in the permit certification; reporting shall be a on a **quarterly** basis for all other facilities. Reporting of all data shall comply with the requirements of Part I.E. (General Monitoring and Sampling Requirements) and Part I.F. (Reporting and Recordkeeping) of this permit.

Starting December 21, 2016, the permittee must electronically report DMRs by using the EPA's Net-DMR service unless a waiver is granted in compliance with 40 CFR 127.

If submitted on paper, the data must be reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1). The permittee must submit these forms by mail. The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

For both electronic and paper reporting the data must be received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The Discharge Monitoring Report paper and electronic forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.F.4.

2. Additional Reporting

In addition to the reporting requirements stipulated in this Part, the permittee is also subject to the standard permit reporting provisions of Part II of this permit.

3. Records

a. The permittee shall establish and maintain records. Those records shall include, but not be limited to, the following:

   i. The date, type, exact place, and time of sampling or measurements;
   ii. The individual(s) who performed the sampling or measurements;
   iii. The date(s) the analyses were performed;
   iv. The individual(s) who performed the analyses;
   v. The analytical techniques or methods used; and
   vi. The results of such analyses.
   vii. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

b. The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all

reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.

4. Signatory and certification requirements

a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:

i. In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;
ii. In the case of a partnership, by a general partner;
iii. In the case of a sole proprietorship, by the proprietor;
iv. In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;
v. By a duly authorized representative of a person described above, only if:
   a) The authorization is made in writing by a person described in i, ii, iii, or iv above;
   b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,
   c) The written authorization is submitted to the Division.

b. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"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 directly 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."

G. CONTROL MEASURES – Stormwater only

All control measures used by the permittee to meet the effluent limitations contained in this permit must be selected, designed, installed, implemented, and maintained in accordance with good engineering hydrologic and pollution control practices, and the manufacturer's specifications, when applicable.

The term "**Minimize**", for purposes of implementing control measures to meet the requirements of Part I.C.2 of this general permit, means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

1. Installation and implementation specifications

Installation and implementation specifications for each control measure type used by the permittee to meet the effluent limitations contained in this permit, must be retained with the SWMP (see Part I.M of this general permit).

2. Maintenance of Control Measures and Associated Documentation

a. The permittee must maintain all control measures used to achieve the effluent limits required by this permit in effective operating condition (see Part I.C.2). For this permit, maintenance includes preventative and routine maintenance, modification, repair, replacement, or installation of new control measures. Observations resulting in maintenance activities can be made during a site inspection, or during general observations of site conditions.

b. Corrective actions associated with maintaining control measures must be conducted with due diligence, as soon as possible after the need is discovered, to achieve the effluent limits required by this permit. The permittee must implement interim control measures to achieve the effluent limits required by this permit while performing maintenance of the primary control measure.

c. The permittee shall document corrective actions associated with maintaining control measures, in accordance with Part. I.K (Corrective Actions) of this permit, and shall revise the facility SWMP to reflect replacement or installation of new control measures.

H. GENERAL MONITORING REQUIREMENTS – Stormwater only

1. Substantially identical outfalls

When a facility has two or more outfalls that, based on a consideration of features (e.g. grass vs. pavement, slopes, catch basins vs. swales) and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may monitor the effluent of one such outfall and report that the results also apply to the substantially identical outfalls.

a. For visual assessments, this provision applies only when visual assessments are rotated between each substantially identical outfall throughout the period of the permittees coverage under this permit.

b. As required in Part I.M.8, the SWMP must describe the rationale for any substantially identical outfall determinations.

2. Measurable storm events and Delayed release of stormwater

a. Rain event: The permittee must conduct all required monitoring on a storm event that results in an actual discharge from the facility ("measurable storm event"), which includes discharges to surface water within the facility permit boundary, and that follows the preceding measurable storm event by at least 72 hours (3 days).

b. Snowmelt event: The permittee must conduct snowmelt monitoring at a time when a measurable discharge occurs from the facility, which includes discharges to surface water within the facility permit boundary occurs.

c. Delayed release of stormwater: In the event stormwater is detained at the facility (such as in a detention pond/area), and discharges or is manually released at a later date, the permittee must conduct all required monitoring at the time of release, and record Storm Event information (see Part I.H.3, below) for the previous measureable storm event.

This requirement pertains to those discharges that result in an actual discharge from the facility, or that discharge to surface water within the facility permit boundary. Discharges from the mining pit (process water) are not subject to this provision.

3. Storm event information

a. Rain event: For each measurable storm event that is monitored to meet the requirements of the permit, the permittee must document:

i. The date, time of the start of the discharge, time of sampling, duration (in hours) of the rainfall event, and magnitude (in inches) of the storm event sampled; and
ii. The duration between the storm event sampled and the end of the most recent storm event that produced a discharge

This documentation is required only for those storm events that result in a discharge that the permittee monitors.

b. Snowmelt monitoring: The permittee must document the date of the sampling event for each monitored snowmelt event. This documentation is required only for those snowmelt events that result in a discharge that the permittee monitors.

4. Sample Type and Requirements

a. Grab samples shall be used for all monitoring and shall not be combined.
b. Permittees must take a minimum of one grab sample from a discharge resulting from a measurable storm event.
c. Grab samples must be collected within the first 30 minutes of a measurable storm event (see Part I.H.2). If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes, and documentation must be kept with the SWMP explaining why it was not possible to take samples within the first 30 minutes.
d. In the case of snowmelt, samples must be taken during a period with a measurable discharge.
e. All discharge samples at a facility must be taken during the same storm event, if feasible.

5. Climates with Irregular Stormwater Runoff

a. If a facility is located in an area where limited rainfall occurs during parts of the year, or in areas where freezing conditions exist that prevent runoff from occurring for extended periods, the permittee may submit a modification request to the Division, to change the required monitoring events to seasons when precipitation occurs, or when snowmelt results in a measurable discharge from the facility.

b. The permittee must still collect the required number of samples.

c. The permittee must maintain the revised monitoring schedule with the facility's SWMP as specified in Part I.M.8.

6. Monitoring for allowable non-stormwater discharges

A permittee is only required to monitor allowable non-stormwater discharges (as delineated in Part I.A.1.c) when they are commingled with stormwater discharges associated with industrial activity.

7. Monitoring Exceptions for Inactive and Unstaffed Sites

The requirement that permittees conduct and document visual monitoring, benchmark sampling, or water quality standards monitoring of stormwater discharges does not apply at inactive and unstaffed sites (please see Appendix C - Definitions for how the term 'inactive' is used in this permit). Routine reporting of DMR data must follow the reporting conventions required at the Stormwater Specific Reporting and Recordkeeping section (Part I.N) of the permit.

Additional requirements apply to these facilities, as provided below.

a. At inactive and unstaffed facilities that **maintain a condition of no exposure**, i.e., there are no industrial materials or activities exposed to stormwater:

   i. The permittee must maintain a statement in the facility SWMP (Part I.M.8) indicating that the site is inactive and unstaffed (and associated dates), and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 5 CCR 1002-61.3(2)(h). The statement must be signed and certified in accordance with Part I.F (Reporting and Recordkeeping).

   ii. If conditions change and industrial materials or activities become exposed to stormwater, this exception no longer applies and instead, the exception at Part I.H.7.b, below, applies.

b. At inactive and unstaffed facilities that **do not maintain a condition of no exposure**, the permittee must conduct additional facility inspections as required at Part I.J.4 of this permit.

c. If conditions change and the facility becomes active and/or staffed, exceptions under this part **no longer apply** and the permittee must **immediately** resume quarterly visual monitoring and benchmark sampling, and applicable water quality standards sampling at the frequency identified in the permit certification.

d. The presence of staff at the facility to conduct required facility inspections does not change the inactive and unstaffed status of the facility for the purposes of this part.

8. Monitoring Exceptions for Completed and Finally Stabilized Areas

The requirement that permittees conduct and document visual monitoring, benchmark sampling, or water quality standards monitoring of stormwater discharges does not apply at completed facilities, completed portions of facilities, or finally stabilized portions of facilities that meet all of the following conditions:

a. All industrial activities (such as mining, processing, batch plant activities, other land disturbing activities, fueling, loading/unloading etc.) are **temporarily** or **permanently** complete in the specified area, where temporarily complete means that such industrial activities are not currently conducted at the facility, but may recommence in the future; and

b. The permittee has implemented **all** final stabilization measures (with or without seeding) to enable the specified area to attain final stabilization, or the specified area has attained final stabilization consistent with Part.I.A.7.a or b of the permit; and

c. All final stabilization measures are selected, designed, installed, implemented and maintained in accordance with good engineering hydrologic and pollution control practices such that they effectively reduce pollutant potential and the potential for control measure failure for the designated area; and

d. The permittee amended the SWMP to identify those areas for which this exception applies, including the date the areas met the exception conditions.

Stormwater discharges from portions of facilities that are permanently stabilized (i.e., meet the termination criteria at Part I.A. 7.b of the permit, or have obtained an Acreage (or partial) Release from the DRMS for that portion of the facility) no longer require CDPS permit coverage, as the discharge no longer meets the definition of "stormwater discharges associated with industrial activity" pursuant to Regulation 61.3(2). In such cases, the permittee may request that the division reduce the facility permit boundary by the relevant portion of the facility.

9. Revocation of Monitoring Exception

The division retains the authority to revoke any Monitoring Exception identified in this Part where it is determined that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

I. SPECIFIC MONITORING REQUIREMENTS – Stormwater only

1. Visual Monitoring

Once each **quarter** for the entire permit term, the permittee must collect a stormwater sample from each outfall (or a substantially identical outfall pursuant to Part I.H.1 above) and conduct a visual assessment of each of these samples.

a. These samples should be collected in such a manner that the samples are representative of the stormwater discharge.

b. The visual assessment must be made of a sample in a clean, clear glass or plastic container, and examined in a well-lit area. The permittee must visually inspect the sample for the presence of the following water quality characteristics:

i. Color;
ii. Odor;
iii. Clarity;
iv. Floating solids;
v. Settled solids;

vi. Suspended solids;
vii. Foam;
viii. Oil sheen; and
ix. Other obvious indicators of stormwater pollution.

c. Quarterly Visual Assessment Documentation. The permittee must document the visual assessment results and maintain this documentation onsite with the facility SWMP as required in Part I.M.8. The permittee is not required to submit visual assessment findings to the Division, unless specifically requested to do so. At a minimum, visual assessment documentation of the must include:

i. Sample location(s);
ii. Sample collection date and time, and visual assessment date and time for each sample;
iii. Personnel collecting the sample and performing visual assessment, and their signatures;
iv. Nature of the discharge (i.e., runoff or snowmelt);
v. Results of observations of the stormwater discharge;
vi. Probable sources of any observed stormwater contamination; and
vii. If applicable, why it was not possible to take samples within the first 30 minutes.

d. Quarterly Visual Assessment Corrective Actions: If the visual assessment indicates the control measures for the facility are inadequate or are not being properly operated and maintained, the permittee must conduct corrective actions consistent with Part I.K (Corrective Actions) of this permit.

e. The permittee shall maintain visual monitoring procedures in the SWMP as required in Part I.M.8.

2. Benchmark Monitoring

This permit provides pollutant benchmark concentrations that may be applicable to the discharge authorized by this permit. The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. When the discharge exceeds an applicable benchmark concentration, the permittee must conduct corrective actions consistent Part I.K (Corrective Actions) of this permit. Failure to respond to benchmark value exceedances is a violation of the permit.

a. Applicability of Benchmark Monitoring
The permittee shall monitor at each benchmark sampling location for each benchmark parameter(s) specified for the industrial activity in **Part I.O – Asphalt Batch Plants**, and **Part I.P – Concrete Batch Plants** of this permit. The Division may also include a site specific benchmark in a permit certification as appropriate to ensure that compliance with the other terms and conditions of the permit will control discharges as necessary to meet water quality based effluent limitations contained in Part I.C.2.b of the permit.

b. Benchmark Monitoring Schedule
Benchmark monitoring must be conducted **quarterly**, for the first **4** full quarters of permit coverage. Exceptions to this schedule include:

i) Permittees at facilities in climates with irregular stormwater runoff may request a modification of this quarterly schedule as specified in Part I.H.5 of this permit.

c. Averaging monitoring values
Permittees must calculate average concentrations in accordance with the requirements of Part I.E.4 of this permit.

d. Benchmark Monitoring Actions – Data not exceeding benchmarks
After collecting **4** benchmark samples, if the average of the monitoring values for any parameter, at a specific outfall, does not exceed the benchmark, the permittee may reduce benchmark monitoring frequency for that parameter to **once-per-year**, rotating through the quarterly monitoring periods. DMR reporting shall be consistent with Part I.N of this permit.

e. Benchmark Monitoring Actions – Data exceeding benchmarks

i) If the averaged monitoring values for any parameter, at a specific outfall, exceeds the benchmark, as described in a) through c) below, the permittee must conduct corrective action in accordance with Part I.K—Corrective Actions of this permit.

a) The average of the initial **4** quarterly sample monitoring values for any parameter exceeds the benchmark.

b) If less than **4** benchmark samples have been taken, but the sum of the quarterly sample results to date is more than **4** times the benchmark level (i.e., an exceedance of the **4** quarter average is mathematically certain), this is considered a benchmark exceedance.

c) If any of the annual samples taken after the first **4** quarterly samples (i.e., samples **5** through **8**), when averaged with the proceeding samples, causes an average monitoring value that exceeds the benchmark for any parameter, this is considered a benchmark exceedance.

ii) Following control measure(s) modification, the permittee must continue **quarterly** monitoring for **4** additional quarters. For this monitoring:

a) If the average of the monitoring values for any parameter does not exceed the benchmark, the permittee may monitor once-per-year as described in Part I.I.2.d, above.

b) If the average of the monitoring values for any parameter still exceeds the benchmark (or if an exceedance of the benchmark by the 4 quarter average is mathematically certain prior to conducting the full 4 additional quarters of monitoring), the permittee must again conduct corrective actions consistent with Part I.K (Corrective Actions) of this permit unless the Division waives the requirement for additional monitoring and corrective action.

3. Water Quality Standards Monitoring

a. Applicability of water quality standards monitoring

Consistent with the provisions in Part I.C.2., the Division may apply monitoring conditions (i.e., sampling parameters, sampling frequency, and sample type) in the permit certification issued to a permittee for discharges to impaired waters, discharges to waters designated as critical habitat for threatened and endangered species, and other discharges as necessary to determine if compliance with the other terms and conditions of the permit will control discharges as necessary to meet water quality standards. Monitoring conditions will be consistent with applicable water quality standard(s) for the receiving water, and as applicable, the assumptions of any available wasteload allocation in an applicable TMDL. Water quality standards monitoring is only required at a facility if specified in the certification.

b. Monitoring Frequency and modification

When specified in the certification, the permittee must monitor discharges once per quarter at each outfall (except substantially identical outfalls) discharging stormwater to impaired waters.

c. Modifying Monitoring Requirements

A permittee may request modification of the water quality standards monitoring requirements required by the permit certification if, after one year of monitoring or 4 samples, a pollutant, at a specific outfall, is not detected above the applicable, end-of-pipe water quality standard in any sample.

4. Additional Monitoring Required by the Division

The Division may notify a permittee of additional discharge monitoring requirements. Any such notice will briefly state the reasons for the monitoring, locations, and monitoring parameters, frequency and period of monitoring, sample types, and reporting requirements. Such monitoring may include salinity and in-stream sampling and whole effluent toxicity testing.

J. FACILITY INSPECTIONS – Stormwater only

1. Inspection frequency and personnel

a. The permittee shall conduct and document visual inspections of the facility at least **quarterly** (i.e., once each calendar quarter). Inspections shall be conducted at least 20 days apart.
b. The permittee shall conduct a minimum of one (1) of the annual quarterly inspections during a runoff event, which for a rain event means during, or within 24 hours after the end of, a measureable storm event; and for a snowmelt event, means at a time when a measurable discharge occurs from the facility.
c. The permittee shall ensure that qualified personnel conduct inspections.

2. Inspection scope

Each inspection shall include:

a. Observations made at stormwater sampling locations and areas where stormwater associated with mining and processing is discharged off-site, to waters of the state, or to a storm sewer system that drains to waters of the state.
b. Observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharge(s).
c. Observations of the condition of and around stormwater outfalls, including flow dissipation measures to prevent scouring.
d. Observations for the presence of illicit discharges or other non-permitted discharges.
e. A verification that the descriptions of potential pollutant sources required under this permit are accurate.
f. A verification that the site map in the SWMP reflects current conditions.
g. An assessment of all control measures used to comply with the effluent limits contained in this permit, noting all of the following:

    i. Effectiveness of control measures inspected.
    ii. Locations of control measures that need maintenance or repair.
    iii. Reason maintenance or repair is needed and a schedule for maintenance or repair.
    iv. Locations where additional or different control measures are needed and the rationale for the additional or different control measures.

3. Inspection documentation

The permittee shall document the findings for each inspection in an inspection report or checklist, and keep the record onsite with the facility SWMP. The permittee shall ensure each inspection report documents the observations, verifications and assessments required in Part I.J.2 above, and additionally includes:

a. The inspection date and time;
b. Locations inspected;
c. Weather information and a description of any discharges occurring at the time of the inspection;
d. A statement that, in the judgment of 1) the person conducting the site inspection, and 2) the person described in Part I.F.4 (Reporting and Recordkeeping), the site is either in compliance or out of compliance with the terms and conditions of this permit, with respect to Part I.J.2 (Inspection Scope);
e. A summary report and a schedule of implementation of the corrective actions that the permittee has taken or plans to take if the site inspection indicates that the site is out of compliance;
f. Name, title, and signature of the person conducting site inspection; and the following statement: “I certify that this report is true, accurate, and complete, to the best of my knowledge and belief.”;
g. Certification and signature of the person described in Part I.F.4 (Reports and Recordkeeping), or a duly authorized representative of the facility thereof.

4. Inspection frequency exceptions for Inactive and Unstaffed Sites

The requirement that permittees conduct and document quarterly visual inspections of the facility, and conduct at least one (1) inspection per calendar year during a runoff event, does not apply at inactive and unstaffed sites. Instead, the following requirements apply to such facilities (see also Monitoring Exceptions for Inactive and Unstaffed Sites at Part I.H.7 of the permit):

a. At inactive and unstaffed facilities that **maintain a condition of no exposure**, i.e., there are no industrial materials or activities exposed to stormwater:

   i. The permittee must conduct **two site inspections** annually, in the spring and fall, in accordance with the requirements of this Part.

   ii. The permittee must maintain a statement in the facility SWMP pursuant to Part I.M.7 indicating that the site is inactive and unstaffed (and associated dates), and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 5 CCR 1002-61.3(2)(h). The statement must be signed and certified in accordance with Part I.F.4 (Reports and Recordkeeping).

   iii. If conditions change and industrial materials or activities become exposed to stormwater, this exception no longer applies and instead, the exception at Part I.J.4.b, below, applies.

   iv. If conditions change and the facility becomes active and/or staffed, exceptions under this part **no longer apply** and the permittee must **immediately** resume inspections as required in Parts I.J.1-3 above.

b. At inactive and unstaffed facilities that **DO NOT maintain a condition of no exposure**, i.e., industrial materials or activities **ARE** exposed to stormwater:

   i. The permittee must conduct **six site inspections** annually, once every two calendar months, at least **20 days apart**, in accordance with the requirements of this Part.

   ii. The permittee must maintain a statement in the facility SWMP pursuant to Part I.M.7 indicating that the site is inactive and unstaffed, and associated dates. The statement must be signed and certified in accordance with Part I.F.4 (Reports and Recordkeeping).

   iii. If conditions change and the facility becomes active and/or staffed, exceptions under this part **no longer apply** and the permittee must **immediately** resume inspections as required in Parts I.J.1-3 above.

c. The presence of staff at the facility to conduct required facility inspections does not change the inactive and unstaffed status of the facility for the purposes of this part.

5. Runoff event inspection exception at Completed and Finally Stabilized Areas

The requirement that permittees conduct and document at least one (1) inspection per calendar year during a runoff event, does not apply at completed facilities, completed portions of facilities, or finally stabilized portions of facilities that meet all of the conditions below. Note that all other inspection provisions in this part remain applicable.

a. All industrial activities (such as mining, processing, batch plant activities, other land disturbing activities, fueling, loading/unloading etc.) are **temporarily** or **permanently** complete in the specified area, where temporarily complete means that such industrial activities are not currently conducted at the facility, but may recommence in the future; and

b. The permittee has implemented **all** final stabilization measures (with or without seeding) to enable the specified area to attain final stabilization, **OR** the specified area has attained final stabilization consistent with Part.I.A.7.a or b of the permit; and

c. All final stabilization measures are selected, designed, installed, implemented and maintained in accordance with good engineering hydrologic and pollution control practices such that they effectively reduce pollutant potential and the potential for control measure failure for the designated area; and

d. The permittee amended the SWMP to identify those areas for which this exception applies, including the date the areas met the exception conditions.

Stormwater discharges from portions of facilities that are permanently stabilized (i.e., meet the termination criteria at Part I.A. 7.b of the permit, or have obtained an Acreage (or partial) Release from the DRMS for that portion of the facility) no longer require CDPS permit coverage, as the discharge no longer meets the definition of " stormwater discharges associated with industrial activity" pursuant to Regulation 61.3(2). In such cases, the permittee may request that the division reduce the facility permit boundary by the relevant portion of the facility.

6. Non-compliance discovered during inspection

Any corrective action required as a result of a facility inspection must be performed consistent with Part I.K (Corrective Actions) of this permit, and retained with the SWMP.

K. CORRECTIVE ACTIONS – Stormwater only

1. Conditions that must be eliminated

If any of the following conditions occur at the permitted facility (as identified by the permittee; the Division; or an EPA official, or local, or State entity), the permittee must review and revise the selection, design, installation, and implementation of facility control measures to ensure that the condition is eliminated and will not be repeated in the future:

a. An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another permit) occurs;
b. Facility control measures are not stringent enough for the discharge to meet applicable water quality standards;
c. Modifications to the facility control measures are necessary to meet the practice-based effluent limits in this permit; or
d. The permittee finds in a facility inspection that facility control measures are not properly selected, designed, installed, operated or maintained.

2. Condition requiring review and modification

If any of the following conditions occur, the permittee must review the selection, design, installation, and implementation of facility control measures to determine the appropriate modifications necessary to attain the effluent limits in this permit:

a. Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or

b. The **average** of quarterly sampling results as described in Part I.I.2.e of this permit exceeds an applicable benchmark.

3. Corrective action reports and deadlines

The permittee must document discovery of any condition listed in Parts I.K.1 and I.K.2 above, within 5 days as described below, submit the documentation in an annual report as required in Part I.N, and retain a copy onsite with the facility SWMP.

Within five (5) days of discovery of any condition listed in Parts I.K.1 and I.K.2, the permittee must document the following information:

a. Identification of the condition triggering the need for corrective action review;
b. Description of the problem identified;
c. Date the problem was identified;

d. Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.K.2 where the permittee determines that corrective action is not necessary, the basis for this determination);
e. Notice of whether SWMP modifications are required as a result of this discovery or corrective action;
f. Date corrective action initiated; and
g. Date corrective action completed or expected to be completed.

4. Control measure modification

Modification of any control measure as part of the corrective action required by Parts I.K.1 and I.K.2 must be performed consistent with Part I.G (Control Measures) of this permit.

5. Substantially identical outfalls

If the event triggering corrective action is associated with an outfall that represents other substantially identical outfalls, the permittee's review must assess the need for corrective action for each outfall represented by the outfall that triggered the review. Any necessary changes to control measures that affect these other outfalls must also be performed consistent with Part I.G (Control Measures) of this permit, and the permittee must implement interim or temporary controls measures during the maintenance effort.

L. GENERAL SWMP REQUIREMENTS – Stormwater only

The General SWMP requirements contained in this section address administrative requirements of the SWMP, as opposed to the specific SWMP content requirements provided in Part I.M of the permit.

An existing permittee authorized under the previous versions of this permit shall modify the existing SWMP to comply with the requirements of this permit within 180-days of the facility permit certification effective date.

1. SWMP requirement

The permittee must develop, implement, and maintain a SWMP for each facility authorized by this permit. The SWMP shall be prepared in accordance with good engineering, hydrologic and pollution control practices (the SWMP need not be prepared by a registered engineer). The permittee must modify the SWMP to reflect current site conditions (see Part I.L.7 below).

2. Preparation, Submission and Implementation

The permittee must complete a SWMP prior to submitting the permit application for authorization to discharge industrial stormwater from a facility, and submit it to the Division if requested. The permittee must implement the SWMP when the facility begins industrial activities, which includes installation of control measures.

3. Signatory Requirements

The permittee must sign and certify all SWMPs in accordance with Part I.F.4 (Reporting and Recordkeeping); this requirement applies to the original SWMP prepared for the facility, and each time the permittee modifies a SWMP as required by Part I.L.7.a and b below.

4. Permit Retention

The permittee must maintain a copy of this permit and the permit certification issued to the permittee with the SWMP.

5. SWMP Retention

The permittee must retain a copy of the SWMP at the facility unless another location, specified by the permittee, is approved by the Division.

6. Consistency with Other Plans

The permittee may incorporate, by reference, applicable portions of plans prepared for other purposes at their facility. Plans or portions of plans incorporated by reference into a SWMP become enforceable requirements of this permit and must be available along with the SWMP as required in Part.I.L.5 above.

7. Required SWMP Modifications

a. Division initiated Modifications

i. The permittee must modify the SWMP when notified by the Division that it does not meet one or more of the requirements of this permit. Unless otherwise provided by the Division, the permittee shall have 30 days after notification to make the necessary changes to the SWMP and implement them.
ii. The Division may require the permittee to submit the modified SWMP to the Division.
iii. If the Division determines that the permittee's stormwater discharges do not, or may not, achieve the effluent limits required by this permit, the Division may require the permittee, within a specified time period, to develop and implement a supplemental control measure action plan, which describes additional SWMP modifications to adequately address the identified water quality concerns.

b. Permittee initiated Modifications

i. The permittee must modify the SWMP whenever necessary to address any of the triggering conditions for corrective action in Part I.K (Corrective Actions) to ensure that they do not reoccur.
ii. The permittee must modify the SWMP whenever there is a change in design, construction, operation, or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility, significantly increases the quantity of pollutants discharged, or that requires the permittee to implement new or modified control measures.
iii. The SWMP modifications may include a schedule for control measure design and implementation, provided that interim control measures needed to comply with the permit are documented in the SWMP and implemented during the design period.
iv. The permittee must make all SWMP modifications in accordance with the corrective action deadline in Part I.K (Corrective Actions).

M. SPECIFIC SWMP REQUIREMENTS – Stormwater only

1. SWMP Administrator

The SWMP shall identify a specific individual(s) by name or by title whose responsibilities include: SWMP development, implementation, maintenance, and modification.

2. Facility Description

The facility description shall include:

a. A narrative description of the industrial activities conducted at the facility;
b. The total size of the facility property in acres;
c. The general layout of the facility including mining areas, revegetated areas, buildings, raw material storage areas, and the flow of goods and materials through the facility.

3. Facility Map

The SWMP shall include a legible site map(s), showing the entire facility, and vicinity as appropriate, identifying:

a. The boundary of the mining and processing operation.
b. The location of the facility in relation to surface waters that receive industrial stormwater discharges from the facility (including the name of the surface water; if the name is not known, indicate that on the map); a separate vicinity map may be necessary to comply with this requirement.
c. The location of significant impervious surfaces within the facility property boundaries, including paved areas and buildings.
d. The locations of all facility stormwater conveyances including ditches, pipes, and swales.
e. The locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall No. 001, No.002, etc), and indicating whether one or more outfalls are "substantially identical" under Part I.H (General Monitoring Requirements); and an approximate outline of the areas draining to each outfall.
f. The directions of stormwater flow indicated by arrows;
g. The areas where mining and processing activities are currently or have previously been conducted, where such activities are exposed to precipitation. This includes all areas of soil disturbance and reclamation/revegetation.
h. The locations of all actual or potential pollutant sources (including sediment) associated with mining and processing activities, including but not limited to those identified in the Facility Inventory and Assessment of Pollutant Sources (below) and the following:

    i. Vehicle fueling areas;
    ii. Fertilizer or chemical storage areas;
    iii. Areas used for storage or disposal of overburden, materials, soils or wastes;
    iv. Areas used for mineral milling and processing;
    v. All access and haul roads; and
    vi. All asphalt or concrete batch plants, or areas used for recycling of asphalt or concrete.

i. The location of any and all process water discharge outfalls, including specified locations of mine dewatering operations.
j. The location of all structural and applicable non-structural control measures used to meet the effluent limits required by this permit.
k. The locations where significant spills or leaks identified under Part I.L.4.b have occurred.
l. The locations of all stormwater monitoring points applicable to the facility (visual monitoring; benchmark monitoring, water quality-based monitoring).
m. Location and description of any non-stormwater discharges authorized in Part I.A.1.c or authorized by separate permit coverage.
n. Locations and sources of run-on to the facility from adjacent property that contains significant quantities of pollutants.
o. The date that the facility site map was prepared and/or amended.

4. <u>Facility Inventory and Assessment of Pollutant Sources</u>

The facility inventory and assessment shall include the following:

a. Inventory of facility activities and equipment

The inventory shall identify all areas (except interior areas that are not exposed to precipitation) associated with industrial activities that have been, or may potentially be, sources of pollutants, that contribute, or have the potential to contribute, any pollutants to stormwater, including but not limited to the following:

i. Loading and unloading of materials, including solids and liquids.
ii. Outdoor storage of materials or products, including solids and liquids.
iii. Outdoor manufacturing and processing.

iv. On-site dust or particulate generating processes, including dust collection devices and vents.
v. On-site waste treatment, storage, or disposal, including waste ponds and solid waste management units.
vi. Vehicle and equipment fueling, maintenance, and/or cleaning (includes washing).
vii. Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility.
viii. Roofs or other surfaces exposed to air emissions from a manufacturing building or a process area.
ix. Roofs and associated surfaces composed of galvanized materials that may be mobilized by stormwater (e.g., roofs, ducts, heating/air conditioning equipment, gutters and downspouts).

b. Inventory of materials

The inventory shall list materials that contribute, or have the potential to contribute, pollutants to stormwater, including but not limited to the following:

i. The types of materials handled at the facility that may be exposed to precipitation or runoff and could result in stormwater pollution.
ii. The types of materials handled at the facility that may leak or spill, and be exposed to precipitation or runoff and result in stormwater pollution.
iii. A narrative description of any potential sources of pollutants from past activities, materials and spills that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. The description shall include the method and location of any on-site storage or disposal; and documentation of all significant spills and leaks of oil or toxic or hazardous pollutants that occurred at exposed areas, or that drained to a stormwater conveyance, in the 3 years prior to the SWMP preparation date.

c. Assessment of potential pollutant sources

The assessment of potential pollutant sources shall provide a short narrative or tabulation describing the potential of a pollutant to be present in stormwater discharges for each facility activity, equipment and material identified above. The permittee shall update this narrative when data become available to verify the presence or absence of these pollutants. Potential pollutant sources include:

i. Loading and unloading operations;
ii. Outdoor storage of chemicals or equipment;
iii. Crushing facilities or significant dust and particulate generating activities;
iv. On site waste disposal practices;
v. Stockpiles of overburden, raw material, intermediate products, byproducts, finished products or waste products;
vi. Asphalt or concrete batch plants or areas used for recycling of asphalt or concrete;
vii. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.;
viii. Haul roads; and
ix. Disturbed and revegetated areas.

5. Description of Control Measures

a. The permittee shall document the location, installation date, type, and implementation specifications of each non-structural and structural control measure implemented at the facility to achieve meet the effluent limitations contained in this permit. Documentation must include those control measures implemented for stormwater run-on that commingles with any discharges covered under this permit.

b. Installation and implementation specifications for each control measure used by the permittee to meet the effluent limitations contained in this permit must be retained with the SWMP.

6. Additional Control Measure Requirements

The permittee shall document the schedules, procedures, and evaluation results for the following subset of practice-based effluent limitations.

a. Good Housekeeping (see Part I.C.2.a.ii) - A schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers.
b. Maintenance (see Part I.C.2.a.iii) - Preventative maintenance schedules for industrial equipment and systems; control measures; and any back-up practices in place should a runoff event occur while a control measure is off-line.
c. Spill Prevention and Response Procedures (see Part I.C.2.a.iv) - Procedures for preventing, responding to, and reporting spills and leaks. The permittee may reference other plans (e.g., a Spill Prevention Control and Countermeasure (SPCC) plan) otherwise required by a permit for the facility, provided that a copy of the other plan is kept onsite with the SWMP, and made available for review consistent with Part I.L (SWMP—General SWMP Requirements).
d. Employee Training (see Part I.C.2.a.viii) - A schedule for all types of training required by this permit, content of the training, and log of the dates on which specific employees received training.
e. Non-Stormwater Discharges (see Part I.C.2.a.ix) - Documentation of the stormwater conveyance system evaluation for the presence of non-stormwater discharges not authorized in Part.I.A.1.c, and the elimination of all unauthorized discharges. Documentation of the evaluation must include:

    i. The date of any evaluation;
    ii. A description of the evaluation criteria used;
    iii. A list of the outfalls or onsite drainage points that were directly observed during the evaluation;
    iv. The different types of non-stormwater discharge(s) and source locations; and
    v. The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified.

7. Inspection Procedures and Documentation

The permittee shall document inspection procedures, and maintain such procedures and other documentation with the SWMP, as follows:

a. The permittee shall document procedures for performing the facility inspections required by Part I.J (Facility Inspections) of the permit. Procedures must identify:
    i. Person(s) or positions of person(s) responsible for inspection;
    ii. Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater runoff discharges; and
    iii. Specific items to be covered by the inspection, including inspection schedules for specific outfalls.

b. The permittee shall maintain inspection documentation with the SWMP as required by Part I.J (Facility Inspections) of this permit.

c. Permittees that invoke the exception to quarterly inspections for inactive and unstaffed facilities must include in the SWMP the signed and certified documentation to support this claim as required in Part I.J (Facility Inspections).

8. Monitoring Procedures and Documentation

The permittee shall document monitoring procedures, and maintain such procedures and other documentation with the SWMP, as follows:

a. The permittee shall document procedures for performing any applicable types of monitoring required by Part I.I (Specific Monitoring Requirements) of the permit, including:
    i. Visual assessment monitoring (see Part I.I.1)

ii. Benchmark monitoring (see Part I.I.2)
iii. Water Quality Standards monitoring (see Part I.I.3); and
iv. Additional monitoring as required by the Division (see Part I.I.4).

b. For each type of monitoring, procedures must identify:

i. Locations where samples are collected, and outfall identification by its unique identifying number;
ii. Staff responsible for conducting stormwater sampling;
iii. Procedures for sample collection and handling, including any deviations from sampling within the first 30 minutes of a measurable storm event;
iv. For any parameters requiring analysis, the name of the parameter, the holding times and preservatives, the analytical methods used, and the laboratory quantitation levels;
v. Procedures for sending samples to a laboratory, as applicable;
vi. Monitoring schedules, including any deviations from the monitoring schedule for alternate monitoring periods for climates with irregular stormwater runoff (see Part I.H.5);
vii. The numeric control values (benchmarks, TMDL-related requirements, or other requirements) applicable to discharges from each outfall.

c. Permittees must maintain Quarterly Visual Assessment documentation (see Part I.I.1.c) with the SWMP.

d. Permittees that invoke the Monitoring Exceptions for Inactive and Unstaffed Sites and for Completed and Finally Stabilized Areas, must include in the SWMP the signed and certified documentation to support this claim.

e. Permittees that use the substantially identical outfall monitoring exception (Part I.H.1) must document the following in the SWMP:
i. Location of each of the substantially identical outfalls, and the outfall sampled;
ii. Description of the general industrial activities conducted in the drainage area of each outfall;
iii. Description of the control measures implemented in the drainage area of each outfall;
iv. Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges;
v. Impervious surfaces in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass, etc.);
vi. Why the permittee expects the outfalls to discharge substantially identical effluents.

9. Corrective Action Documentation

The permittee must maintain a copy of all Corrective Action reports that document corrective actions taken by the permittee consistent with Part I.K (Corrective Actions) of this permit, with the facility SWMP.

N. STORMWATER SPECIFIC REPORTING AND RECORDKEEPING – Stormwater only

1. Routine Reporting of data – DMRs

In addition to the Reporting and Recordkeeping requirements provided at Part I.F of this permit, the required DMR reporting conventions for stormwater discharges are as follows:

a. If no discharge occurs during the reporting period, "**No Discharge**" shall be reported on the DMR.
b. If the permittee's benchmark sampling frequency is reduced consistent with Part I.I.2.d of this permit (Benchmark Monitoring Actions – *Data not exceeding benchmarks*), the permittee must submit quarterly DMRs and indicate "**Benchmark Met**" in the result field on the DMR for each parameter that meets the sampling frequency reduction criteria.

c. If the permittee's monitoring is excepted consistent with Parts I.H.7 and I.H.8 of this permit, the permittee must submit quarterly DMRs and indicate "**General Permit Exemption**" in the result field on the DMR for each parameter for the period the site meets the monitoring exception criteria.

2. Annual report

ICIS Code	Description	Due date	Frequency
00308	The permittee shall submit an annual report to the division for the reporting period January 1 through December 31.	February 28	Annual

a. The annual report shall include:

i. Name of permittee, address, phone number
ii. Permit certification number
iii. Facility name and physical address
iv. Contact person name, title, and phone number
v. Summary of inspection dates
vi. Summary of visual monitoring
vii. Corrective action documentation as required in Part I.J., and status of any outstanding corrective action(s).

b. The signed copy of each annual report shall be submitted to the Division at the address below, and a copy maintained with the SWMP.

Attn: Annual Report
Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

3. SWMP records

The permittee shall retain copies of the facility SWMP, including any modifications made during the term of this permit, documentation related to corrective actions taken, all reports and certifications required by this permit, monitoring data, and records of all data used to complete the application to be covered by this permit, for a period of at least 3 years from the date that coverage under this permit expires or is terminated.

O. SECTOR-SPECIFIC REQUIREMENTS FOR ASPHALT BATCH PLANTS – Stormwater only

The requirements of this Part apply to stormwater discharges associated with industrial activity from asphalt batch plants (SIC Code 2951) located at sand and gravel facilities, and to areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Asphalt batch plants

Asphalt batch plants (permanent and mobile) that operate at sand and gravel facilities, where the facility is permitted for such operations, may be covered by this permit. Asphalt batch plants that operate at sand and gravel facilities, where the facility is NOT permitted for such operations, must obtain alternate permit coverage, currently under CDPS general permit COR900000.

2. Sector-Specific Benchmarks

Table O-1 identifies benchmarks that apply to discharges associated with industrial activity from asphalt batch plants

Table O-1.		
Sector	**Parameter**	**Benchmark Monitoring Concentration**
Asphalt Paving Mixtures and Blocks (SIC 2951)	Total Suspended Solids (TSS)	100 mg/L

P. SECTOR-SPECIFIC REQUIREMENTS FOR CONCRETE BATCH PLANTS – Stormwater only

The requirements of this Part apply to stormwater discharges associated with industrial activity from concrete batch plants (SIC Code 3273) located at sand and gravel facilities, and to areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Concrete Batch Plants

Concrete batch plants (permanent and mobile) that operate at sand and gravel facilities, where the facility is permitted for such operations, may be covered by this permit. Concrete batch plants that operate at sand and gravel facilities, where the facility is NOT permitted for such operations, must obtain alternate permit coverage, currently under CDPS general permit COR900000.

2. Additional Practice-Based Effluent Limits

a. Good Housekeeping Measures. With good housekeeping, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant material in stormwater from paved portions of the site that are exposed to stormwater. Consider sweeping regularly or using other equivalent measures to minimize the presence of these materials. Indicate in the facility SWMP the frequency of sweeping or equivalent measures. Determine the frequency based on the amount of industrial activity occurring in the area and the frequency of precipitation, but it must be performed at least once a month if cement, aggregate, or settled dust are being handled or processed. The permittee must also prevent the exposure of fine granular solids (e.g., cement, etc.) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, or buildings, or under other covering.

3. Additional SWMP Requirements

a. Drainage Area Site Map. Document in the SWMP the locations of the following, as applicable: dust control device; recycle/sedimentation pond, clarifier, or other device used for the treatment of process wastewater; and the areas that drain to the treatment device.

b. Certification. For facilities producing ready-mix concrete, concrete block, brick, or similar products, include in the non-stormwater discharge certification a description of measures that ensure that process waste waters resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with CDPS requirements or are recycled.

4. Sector-Specific Benchmarks

Table P-1 identifies benchmarks that apply to discharges associated with industrial activity from concrete batch plants

Table P-1.		
Sector	**Parameter**	**Benchmark Monitoring Concentration**
Ready-Mixed Concrete (SIC 3273)	Total Suspended Solids (TSS)	100 mg/L
	Total Iron	1.0 mg/L

Q. OTHER TERMS AND CONDITIONS – Stormwater only

1. All dischargers must comply with the lawful requirements of counties, drainage districts and other state or local agencies regarding any discharges of stormwater to storm drain systems or other water courses under their jurisdiction.

2. Reporting to Municipality – Any permitted facility discharging to a municipal storm sewer shall provide the municipality with a copy of the permit application, and/or Annual Reports, upon request. A copy of the SWMP shall also be provided to the municipality upon request.

PART II

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section – Industrial Compliance Program
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:

Water Quality Protection Section – Industrial Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. Change in Discharge

The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. Noncompliance Notification

The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:

i) A description of the noncompliance and its cause;

ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the

information requested in Part II.A.4 (a) **within five (5) working days** after becoming aware of the following circumstances:

i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

4. Transfer of Ownership or Control

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit.

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

i) The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and

ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted to the WQCD Industrial Compliance Program on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) One hundred micrograms per liter (100 µg/l);

ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;

iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) Five hundred micrograms per liter (500 µg/l);

ii) One milligram per liter (1 mg/l) for antimony; and

iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. Bypass Notification

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. Bypass

a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility.

b. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

iii) Proper notices were submitted in compliance with Part II.A.5.

c. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

d. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

e. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

8. Upsets

a. “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include

noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

ii) The permitted facility was at the time being properly operated and maintained; and

iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and

iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

d. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

9. Submission of Incorrect or Incomplete Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division, the permittee shall promptly submit such facts or information.

B. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

3. Duty to Provide Information

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

4. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. Modification, Suspension, Revocation, or Termination of Permits By the Division

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

   i) Violation of any terms or conditions of the permit;

   ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

   iii) Materially false or inaccurate statements or information in the permit application or the permit.

   iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:

   i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) calendar days of judicial remand.

iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

v) Where the Division has completed, and EPA approved, a total maximum daily load (TMDL) which includes a wasteload allocation for the discharge(s) authorized under the permit.

vi) The permittee has received a variance.

vii) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

viii) When required by the reopener conditions in the permit.

ix) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

x) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.

xi) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.

xii) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.

xiii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

xiv) When another State whose waters may be affected by the discharge has not been notified.

xv) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) calendar days of receipt of notification,

ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and

iv) Requirements of public notice have been met.

d. For permit modification, termination, or revocation and reissuance, the Division may request additional information from the permittee. In the case of a modified permit, the Division may require the submission of an updated application. In the case of revoked and reissued permit, the Division shall require the submission of a new application.

e. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 calendar days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

f. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:

i) Correcting typographical errors; or

ii) Increasing the frequency of monitoring or reporting by the permittee; or

iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 calendar days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

vii) Incorporating conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.

g. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

h. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.

i. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).

j. If cause does not exist under this section, the Division shall not modify or revoke and reissue the permit.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. Permit Violations

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided elsewhere in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. Severability

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

10. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

11. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

12. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.4.

13. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard

or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

14. Effect of Permit Issuance

a. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

d. Compliance with a permit condition which implements a particular standard for biosolid use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for biosolid use or disposal.

PART III

CATEGORICAL INDUSTRIES

Aluminum Forming
Asbestos Manufacturing
Battery Manufacturing
Builders' Paper and Board Mills
Canned & Preserved Fruits and Vegetables Processing
Canned & Preserved Seafood Processing
Carbon Black Manufacturing
Cement Manufacturing
Coal Mining
Coil Coating
Copper Forming
Dairy Products Processing
Electrical and Electronic Components
Electroplating
Explosives Manufacturing
Feedlots
Ferroalloy Manufacturing
Fertilizer Manufacturing
Glass Manufacturing
Grain Mills
Gum and Wood Chemicals Manufacturing
Hospital
Ink Formulation
Inorganic Chemicals Manufacturing
Iron and Steel Manufacturing
Leather Tanning and Finishing
Meat Products
Metal Finishing
Metal Molding and Casting (Foundries)
Mineral Mining and Processing
Nonferrous Metals Manufacturing
Nonferrous Metals Forming and Metal Powders
Oil and Gas Extraction
Organic Chemicals, Plastics, and Synthetic Fibers
Ore Mining and Dressing
Paint Formulation
Paving and Roofing Materials (Tars and Asphalt)
Pesticide Chemicals
Petroleum Refining
Pharmaceutical Manufacturing
Phosphate Manufacturing
Photographic
Plastics Molding and Forming
Porcelain Enameling
Pulp, Paper, and Paperboard Manufacturing
Rubber Manufacturing
Soap and Detergent Manufacturing
Steam Electric Power Generating
Sugar Processing
Textile Mills
Timber Products Processing

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS
IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles	Base/Neutral	Acid Compounds	Pesticides
acrolein	acenaphthene	2-chlorophenol	aldrin
acrylonitrile	acenaphthylene	2,4-dichlorophenol	alpha-BHC
benzene	anthracene	2,4,-dimethylphenol	beta-BHC
bromoform	benzidine	4,6-dinitro-o-cresol	gamma-BHC
carbon tetrachloride	benzo(a)anthracene	2,4-dinitrophenol	delta-BHC
chlorobenzene	benzo(a)pyrene	2-nitrophenol	chlordane
chlorodibromomethane	3,4-benzofluoranthene	4-nitrophenol	4,4'-DDT
chloroethane	benzo(ghi)perylene	p-chloro-m-cresol	4,4'-DDE
2-chloroethylvinyl ether	benzo(k)fluoranthene	pentachlorophenol	4,4'-DDD
chloroform	bis(2-chloroethoxy)methane	Phenol	dieldrin
dichlorobromomethane	bis(2-chloroethyl)ether	2,4,6-trichlorophenol	alpha-endosulfan
1,1-dichlorethane	bis(2-chloroisopropyl)ether		beta-endosulfan
1,2-dichlorethane	bis(2-ethylhexyl)phthalate		endosulfan sulfate
1,1-dichlorethylene	4-bromophenyl phenyl ether		endrin
1,2-dichlorpropane	butylbenzyl phthalate		endrin aldehyde
1,3-dichlorpropylene	2-chloronaphthalene		heptachlor
ethylbenzene	4-chlorophenyl phenyl ether		heptachlor epoxide
methyl bromide	chrysene		PCB-1242
methyl chloride	dibenzo(a,h)anthracene		PCB-1254
methylene chloride	1,2-dichlorobenzene		PCB-1221

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS
IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles	Base/Neutral	Acid Compounds	Pesticides
1,1,2,2-tetrachloroethane	1,3-dichlorobenzene		PCB-1232
tetrachloroethylene	1,4-dichlorobenzene		PCB-1248
Toluene	3,3-dichlorobenzidine		PCB-1260
1,2-trans-dichloroethylene	diethyl phthalate		PCB-1016
1,1,1-trichloroethane	dimethyl phthalate		toxaphene
1,1,2-trichloroethane	di-n-butyl phthalate		
trichloroethylene	2,4-dinitrotoluene		
vinyl chloride	2,6-dinitrotoluene		
	di-n-octyl phthalate		
	1,2-diphenylhydrazine (as azobenzene)		
	fluorene		
	fluoranthene		
	hexachlorobenzene		
	hexachlorobutadiene		
	hexachlorcyclopentadiene		
	hexachloroethane		
	indeno(1,2,3-cd)pyrene		
	isophorone		
	naphthalene		
	nitrobenzene		
	N-nitrosodimethylamine		
	N-nitrosodi-n-propylamine		
	N-nitrosodiphenylamine		
	phenanthrene		
	pyrene		
	1,2,4-trichlorobenzene		

OTHER TOXIC POLLUTANTS
(AMMONIA, METALS AND CYANIDE) AND TOTAL PHENOLS

Antimony, Total
Arsenic, Total
Beryllium, Total
Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total
Phenols, Total

TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES

REQUIRED TO BE IDENTIFIED BY EXISTING DISCHARGERS
IF EXPECTED TO BE PRESENT

Toxic Pollutants

Asbestos

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D(2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dinitrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethanolamine
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion
Isoprene
Isopropanolamine
Keithane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mexacarbate
Monoethyl amine
Monomethyl amine
Naled
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfanate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Styrene
TDE (Tetrachlorodiphenylethane)
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Trichlorofan
Triethylamine
Trimethylamine
Uranium
Vandium
Vinyl Acetate
Xylene
Xylenol
Zirconium

Appendix A – Description of Standard Industrial Classification (SIC) Code Major Group 14 facilities

Major group 14 includes establishments primarily engaged in mining or quarrying, developing mines, or exploring for nonmetallic minerals, except fuels.

Dimension Stone (SIC code 1411) - Establishments primarily engaged in mining or quarrying dimension stone. Also included are establishments engaged in producing rough blocks and slabs.

Crushed and Broken Limestone (SIC code 1422) - Establishments primarily engaged in mining or quarrying crushed and broken limestone, including related rocks, such as dolomite, cement rock, marl, travertine, and calcareous tufa.

Crushed and Broken Granite (SIC code 1423) - Establishments primarily engaged in mining or quarrying crushed and broken granite, including related rocks, such as gneiss, syenite, and diorite.

Crushed and Broken Stone, Not Elsewhere Classified (SIC code 1429) - Establishments primarily engaged in mining or quarrying crushed and broken stone, not elsewhere classified.

Construction Sand and Gravel (SIC code 1442) - Establishments primarily engaged in operating sand and gravel pits and dredges, and in washing, screening, or otherwise preparing sand and gravel for construction uses.

Industrial Sand (SIC code 1446) - Establishments primarily engaged in operating sand pits and dredges, and in washing, screening, and otherwise preparing sand for uses other than construction, such as glassmaking, molding, and abrasives.

Kaolin and Ball Clay (SIC code 1455) - Establishments primarily engaged in mining, milling, or otherwise preparing kaolin or ball clay, including china clay, paper clay, and slip clay.

Clay, Ceramic, and Refractory Minerals, Not Elsewhere Classified (SIC code 1459) - Establishments primarily engaged in mining, milling, or otherwise preparing clay, ceramic, or refractory minerals, not elsewhere classified.

Potash, Soda, and Borate Minerals (SIC code 1474) - Establishments primarily engaged in mining, milling, or otherwise preparing natural potassium, sodium, or boron compounds.

Phosphate Rock (SIC code 1475) - Establishments primarily engaged in mining, milling, drying, calcining, sintering, or otherwise preparing phosphate rock, including apatite.

Chemical and Fertilizer Mineral Mining, Not Elsewhere Classified (SIC code 1479) - Establishments primarily engaged in mining, milling, or otherwise preparing chemical or fertilizer mineral raw materials, not elsewhere classified.

Nonmetallic Minerals Services, Except Fuels (SIC code 1481) - Establishments primarily engaged in the removal of overburden, strip mining, and other services for nonmetallic minerals, except fuels, for others on a contract or fee basis.

Miscellaneous Nonmetallic Minerals, Except Fuels (SIC code 1481) - Establishments primarily engaged in mining, quarrying, milling, or otherwise preparing nonmetallic minerals, except fuels. This industry includes the shaping of natural abrasive stones at the quarry.

Appendix B – Failures/Violations of the WET Permit Limit and Automatic Compliance Response

A. Failures and Violations of the Permit Limit

1. **Acute Testing**: An acute WET test failure/violation is whenever the LC50, which represents an estimate of the effluent concentration which is lethal to 50% of the test organisms in the time period prescribed by the test, is found to be less than or equal to 100% effluent. When WET testing is specified in the certification, an acute WET test failure is a violation of the permit.

   In the event of any acute WET test failure/violation, the permittee must provide written notification of the failure to the Division, along with a statement as to whether accelerated testing or a Toxicity Identification Evaluation (TIE) is being performed, unless otherwise exempted, in writing, by the Division. **Notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

2. **Chronic testing:** A chronic WET test is considered to have failed one of the two statistical endpoints when either the NOEC or the IC25 are at any effluent concentration less than the IWC. The IWC for this permit has been determined to be 100% effluent, as dilution considerations do not apply to this general permit.

   A chronic WET test violation is when *both* the NOEC *and* the IC25 are at any effluent concentration less than the IWC. When specified in the certification, a chronic WET test failure is a violation of the permit.

   The permittee must provide written notification to the Division if a chronic WET test violation occurs, or if two consecutive reporting periods have resulted in failure of one of the two statistical endpoints (regardless of which statistical endpoints are failed). Such notification should explain whether it was a violation, a failure of both endpoints when only monitoring is required, or two consecutive failures of a single endpoint. The written notification must also indicate whether accelerated testing or a Toxicity Identification Evaluation or Toxicity Reduction Evaluation (TIE or TRE) is being performed, unless otherwise exempted, in writing, by the Division. **Notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

B. Automatic Compliance Response

1. The permittee is responsible for implementing the automatic compliance response provisions of this permit when one of the following occurs:

   a. For *all* WET testing:
      i. there is a violation of the permit limit (as described for acute and chronic limitations above);
      ii. the permittee is otherwise informed by the Division that a compliance response is necessary.

   b. For *acute* WET testing:
      i. during a report-only period, when the LC50 endpoint is less than the applicable IWC

   c. For *chronic* WET testing:
      i. two consecutive monitoring periods have resulted in failure of one of the two statistical endpoints (either the IC25 or the NOEC). Note that this provision is applicable during 'report' only periods as well as when permit limitations are applicable.
      ii. during a report only period, when both the NOEC and the IC25 are at any effluent concentration less than the IWC.

2. When one of the above listed events occurs, the following automatic compliance response shall apply. The permittee shall either:

   a. conduct accelerated testing using the single species found to be more sensitive as described in this appendix, Part C, or
   b. conduct a Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE) investigation as described below in this appendix, Part D.

C. Accelerated Testing

If accelerated testing is being performed, testing will be at least once every two weeks for up to five tests, at the appropriate IWC, but only one test should be run at a time.

For chronic WET testing, only the IC25 statistical endpoint is used to determine if the test passed or failed at the appropriate IWC. However, if accelerated testing is required due to failure of one statistical endpoint in two consecutive monitoring periods, and in both of those failures it was the NOEC endpoint that was failed, then the NOEC shall be the only statistical endpoint used to determined whether the accelerated testing passed or failed at the appropriate IWC.

Accelerated testing shall continue until; 1) two consecutive tests fail or three of five tests fail, in which case a pattern of toxicity has been demonstrated or 2) two consecutive tests pass or three of five tests pass, in which case no pattern of toxicity has been found. Note that the same dilution series should be used in the accelerated testing as was used in the initial test(s) that result in the accelerated testing requirement.

If no pattern of toxicity is found the toxicity episode is considered to be ended and routine testing is to resume. If a pattern of toxicity is found, a TIE/TRE investigation is to be performed. If a pattern of toxicity is not demonstrated but a significant level of erratic toxicity is found, the Division may require an increased frequency of routine monitoring or some other modified approach. **The permittee shall provide written notification of the results within 14 calendar days of completion of the Pattern of Toxicity/No Toxicity demonstration.**

D. Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE)

If a TIE/TRE is being performed, the results of the investigation are to be received by the Division within 180 calendar days of the demonstration of acute WET in the routine test, as defined above, or if accelerated testing was performed, the date the pattern of toxicity is demonstrated. A status report is to be provided to the Division at the 60 and 120 calendar day points of the TIE/TRE investigation. The Division may extend the time frame for investigation where reasonable justification exists. A request for an extension must be made in writing and received prior to the 180 calendar day deadline. Such request must include a justification and supporting data for such an extension.

Under a TIE, the permittee may use the time for investigation to conduct a preliminary TIE (PTIE) or move directly into the TIE. A PTIE consists of a brief search for possible sources of WET, where a specific parameter(s) is reasonably suspected to have caused such toxicity, and could be identified more simply and cost effectively than a formal TIE. If the PTIE allows resolution of the WET incident, the TIE need not necessarily be conducted in its entirety. If, however, WET is not identified or resolved during the PTIE, the TIE must be conducted within the allowed 180 calendar day time frame.

The Division recommends that the EPA guidance documents regarding TIEs be followed. If another method is to be used, this procedure should be submitted to the Division prior to initiating the TIE.

If the pollutant(s) causing toxicity is/are identified, and is/are controlled by a permit effluent limitation(s), this permit may be modified upon request to adjust permit requirements regarding the automatic compliance response.

If the pollutant(s) causing toxicity is/are identified, and is/are not controlled by a permit effluent limitation(s), the Division may develop limitations the parameter(s), and the permit may be reopened to include these limitations.

If the pollutant causing toxicity is not able to be identified, or is unable to be specifically identified, or is not able to be controlled by an effluent limit, the permittee will be required to either:

1. Conduct an investigation which demonstrates actual instream aquatic life conditions upstream and downstream of the discharge, or identify, for Division approval, and conduct an alternative investigation which demonstrates the actual instream impact. This should include WET testing and chemical analyses of the ambient water. Depending on the results of the study, the permittee may also be required to identify the control program necessary to eliminate the toxicity and its cost. Data collected may be presented to the WQCC for consideration at the next appropriate triennial review of the stream standards; or

2. Move to a TRE by identifying the necessary control program or activity and proceed with elimination of the toxicity so as to meet the WET effluent limit.

If toxicity spontaneously disappears in the midst of a TIE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency of WET testing for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

The control program developed during a TRE consists of the measures determined to be the most feasible to eliminate WET. This may happen through the identification of the toxicant(s) and then a control program aimed specifically at that toxicant(s) or through the identification of more general toxicant treatability processes. A control program is to be developed and submitted to the Division within 180 calendar days of beginning a TRE. Status reports on the TRE are to be provided to the Division at the 60 and 120 calendar day points of the TRE investigation.

If toxicity spontaneously disappears in the midst of a TRE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

Appendix C – Definitions

1. "Acute Toxicity" – The acute toxicity limitation is exceeded if the LC50 is at any effluent concentration less than or equal to the IWC indicated in this permit.

2. "Applicable water quality criterion (AWQC)" is the quantitation target level or goal. The AWQC may be one of the following:

   Where an effluent limit has been established,
   i. The AWQC is the effluent limit.

   Where an effluent limit has not been established, the AWQC may be
   i. An applicable technology based effluent limit (TBEL);
   ii. Half of a water quality standard;
   iii. Half of a water quality standard as assessed in the receiving water, or potential WQBEL; or
   iv. Half of a potential antidegradation based effluent limitation, which can be an antidegradation based average concentration or a potential non-impact limit.

3. "Asphalt batch plant" – refers to the manufacturing plant that combines aggregate and an asphalt binder to produce asphalt concrete.

4. "Asphalt concrete" – produced in a manufacturing plant (asphalt batch plant) and is known by many different names, such as hot mix asphalt, plant mix, bituminous mix, bituminous concrete, etc.

5. "Best Management Practices (BMPs)" – schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to state waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. See 5 CCR 1002-61.2(9).

6. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.

7. "Composite" sample is a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow. For a SBR type treatment system, a composite sample is defined as sampling equal aliquots during the beginning, middle and end of a decant period, for two consecutive periods during a day (if possible).

8. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.

9. "Control Measure" refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the state.

10. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit. For temperature, see Daily Maximum Temperature.

11. "Daily Maximum Temperature (DM)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2 hour maximum can be determined on every data point after the initial 2 hours of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

    For example data points collected at:

08:15, 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, would be averaged for a single 2 hour average data point
08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, would be averaged for a single 2 hour average data point
08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, 10:30, would be averaged for a single 2 hour average data point

This would continue throughout the course of a calendar day. The highest of these 2 hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum. Data from 11 pm to 12:59 am, would fall in the previous month. Data collected from 11:01 pm to 1:00 am would fall in the new month.

12. "Discharge" - when used without qualification, means the "discharge of a pollutant." See 5 CCR 1002-61.2(22).

13. "Discharge of a pollutant" - the introduction or addition of a pollutant into state waters. See 25-8-103(3) C.R.S.

14. "Dissolved (D) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.

15. "Geometric mean" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

    Method 1:

    Geometric Mean = $(a*b*c*d*...)^{(1/n)}$ "*" - means multiply

    Method 2:

    Geometric Mean = antilog ([log(a)+log(b)+log(c)+log(d)+...]/n)

    Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

    In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

    For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

    i. A minimum of two samples shall be collected for coliform analysis within the next sampling period.

    ii. If the sampling frequency is monthly or less frequent: For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting coliform results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

    If the sampling frequency is more frequent than monthly: Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

16. "Good Engineering, Hydrologic and Pollution Control Practices" - methods, procedures, and practices that a) are based on basic scientific fact(s); b) reflect best industry practices and standards; c) are appropriate for the conditions and pollutant sources; and d) provide appropriate solutions to meet the associated permit requirements, including all effluent limitations.

17. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.

18. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

19. "Impaired Water" (or "Water Quality Impaired Water")– A water is impaired for purposes of this permit if it has been identified by a State or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called "water quality limited segments" under 40 CFR 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

20. "Inactive mining operations" – Regulation 61.3(2)(e)(iii)(C) identifies that "inactive mining operations" are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

    This term includes the following types of facilities that have an identifiable owner/operator:

    - mineral mining and/or milling occurred in the past but is not covered by an active mining permit issued by DRMS;
    - operations are limited seasonally (i.e., intermittent operations), consistent with DRMS requirements for notification, only during the portion of the year when the facility is not active; or
    - operations cease for 180-days or more for reasons not associated with intermittent status, and still has reserves (consistent with temporary cessation status as defined by DRMS), only during the time period the facility is not active; or
    - exploration or extraction activities have ceased permanently.

21. "Industrial Activity" – for this permit means those activities identified by the SIC codes described in the applicability section of the permit.

22. "Industrial Stormwater" - stormwater runoff from industrial activity.

23. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.

24. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

25. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

26. "Maximum Weekly Average Temperature (MWAT)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

    The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8th day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

Day 1: Average of all temperature data collected during the calendar day.
Day 2: Average of all temperature data collected during the calendar day.
Day 3: Average of all temperature data collected during the calendar day.
Day 4: Average of all temperature data collected during the calendar day.
Day 5: Average of all temperature data collected during the calendar day.
Day 6: Average of all temperature data collected during the calendar day.
Day 7: Average of all temperature data collected during the calendar day.

1st MWAT Calculation as average of previous 7 days

Day 8: Average of all temperature data collected during the calendar day.

2nd MWAT Calculation as average of previous 7 days

Day 9: Average of all temperature data collected during the calendar day.

3rd MWAT Calculation as average of previous 7 days

27. "Measurable storm event" - a storm event that results in an actual discharge from the facility.

28. "Minimize" - reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

29. “Minimum level (ML)” means the lowest concentration of an analyte that can be accurately and precisely quantified using a given method, as determined by the laboratory.

30. "New Discharger" - means any building, structure, facility, or installation from which there is or may be a discharge of pollutants that did not commence at the particular site before August 13, 1979, that is not a new source, and that has never received a final effective permit for discharges at the site. See 5 CCR 1002-61.2(65).

31. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.

32. “No exposure” – all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. 5 CCR 1002-61.3(2)(h).

33. "Person" - an individual, corporation, partnership, association, state or political subdivision thereof, federal agency, state agency, municipality, Commission, or interstate body. See 5 CCR 1002-61.2(73).

34. "Point source" - any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. "Point Source" does not include irrigation return flow. See 5 CCR 1002-61.2(75).

35. "Pollutant" - dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).

36. "Potentially dissolved (PD) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.

37. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.E of this permit or the PQLs of an individual laboratory.

38. "Qualified Personnel" for stormwater provisions - those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at a facility, and who can also evaluate the effectiveness of control measures.

39. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.

40. "Recorder" requires the continuous operation of an automatic data retention device for providing required records such as a data logger, a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)

41. SAR and Adjusted SAR - The equation for calculation of SAR-adj is:

$$SAR\text{-}adj = \frac{Na^{+}}{\sqrt{\frac{Ca_{x} + Mg^{++}}{2}}}$$

Where:

Na^{+} = Sodium in the effluent reported in meq/l
Mg^{++} = Magnesium in the effluent reported in meq/l
Ca_x = calcium (in meq/l) in the effluent modified due to the ratio of bicarbonate to calcium

The values for sodium (Na+), calcium (Ca++), bicarbonate (HCO3-) and magnesium (Mg++) in this equation are expressed in units of milliequivalents per liter (meq/l). Generally, data for these parameters are reported in terms of mg/l, which must then be converted to calculate the SAR. The conversions are:

$$\text{meq/l} = \frac{Concentration\ in\ mg/l}{Equivalent\ weight\ in\ mg/meq}$$

Where the equivalent weights are determined based on the atomic weight of the element divided by the ion's charge:

Na^{+} = 23.0 mg/meq (atomic weight of 23, charge of 1)
Ca^{++} = 20.0 mg/meq (atomic weight of 40.078, charge of 2)
Mg^{++} = 12.15 mg/meq (atomic weight of 24.3, charge of 2)
HCO3- = 61 mg/mep (atomic weight of 61, charge of 1)

The *EC* and the HCO_3^{-}/Ca^{++} ratio in the effluent (calculated by dividing the HCO_3^{-} in meq/l by the Ca^{++} in meq/l) are used to determine the Ca_x using the following table.

Table – Modified Calcium Determination for Adjusted Sodium Adsorption Ratio

HCO_3/Ca Ratio And *EC* [1], [2], [3]													
Salinity of Effluent (*EC*)(dS/m)													
		0.1	**0.2**	**0.3**	**0.5**	**0.7**	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**6.0**	**8.0**
Ratio of HCO_3/Ca	**.05**	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
	.10	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56
	.15	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
	.20	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
	.25	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
	.30	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
	.35	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
	.40	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
	.45	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61

	.50	2.84	2.93	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
	.75	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
	1.00	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
	1.25	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
	1.50	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
	1.75	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
	2.00	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
	2.25	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
	2.50	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
	3.00	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30
	3.50	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
	4.00	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
	4.50	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
	5.00	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93
	7.00	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
	10.00	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
	20.00	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37
	30.00	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28

[1] Adapted from Suarez (1981).

[2] Assumes a soil source of calcium from lime ($CaCO_3$) or silicates; no precipitation of magnesium, and partial pressure of CO_2 near the soil surface (P_{CO2}) is 0.0007 atmospheres.

[3] Ca_x, HCO_3, Ca are reported in meq/l; EC is in dS/m (deciSiemens per meter).

Because values will not always be quantified at the exact *EC* or HCO_3^- /Ca^{++} ratio in the table, the resulting Ca_x must be determined based on the closest value to the calculated value. For example, for a calculated *EC* of 2.45 dS/m, the column for the *EC* of 2.0 would be used. However, for a calculated *EC* of 5.1, the corresponding column for the *EC* of 6.0 would be used. Similarly, for a HCO_3^- /Ca^{++} ratio of 25.1, the row for the 30 ratio would be used.

The Division acknowledges that some effluents may have electrical conductivity levels that fall outside of this table, and others have bicarbonate to calcium ratios that fall outside this table. For example, some data reflect HCO_3^- /Ca^{++} ratios greater than 30 due to bicarbonate concentrations reported greater than 1000 mg/l versus calcium concentrations generally less than 10 mg/l (i.e., corresponding to HCO_3^- /Ca^{++} ratios greater than 100). Despite these high values exceeding the chart's boundaries, it is noted that the higher the HCO_3^- /Ca^{++} ratio, the greater the SAR-adj. Thus, using the Ca_x values corresponding to the final row containing bicarbonate/calcium ratios of 30, the permittee will actually calculate an SAR-adj that is less than the value calculated if additional rows reflecting HCO_3^- /Ca^{++} ratios of greater than 100 were added.

42. "Seven (7) day average" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.3 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

43. "Significant spills and leaks" - include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environment al Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

44. Significant materials – includes, but is not limited to raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA as amended by SARA (1986); any chemical the facility is required to report pursuant to Section 313 of Title III of SARA (1986); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges. See 5 CCR 1002-61.2(76).

45. "Stormwater" - stormwater runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).

46. "Stormwater Discharges Associated with Industrial Activity" - the discharge from any conveyance that is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Except for the provision of 61.3(2)(c) that addresses construction activities associated with oil and gas operations or facilities, the term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122 or the CDPS program under Regulation No. 61.

    For the categories of industries identified in this permit, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. See 5 CCR 1002-61.3(2)(e).

47. “Sufficiently sensitive test procedures”:

    i. An analytical method is ‘‘sufficiently sensitive’’ when the method detects and accurately and precisely quantifies the amount of the analyte. In other words there is a valid positive result; or
    ii. An analytical method is “sufficiently sensitive” when the method accurately and precisely quantifies the result to the AWQC, as demonstrated by the ML is less than or equal to the AWQC. In other words, the level of precision is adequate to inform decision making; or
    iii. An analytical method is “sufficiently sensitive” when the method achieves the required level of accuracy and precision, as demonstrated by the ML is less than or equal to the PQL. In other words, the most sensitive method is being used and properly followed.

48. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. **(See the “Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.3 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

49. "Total Maximum Daily Loads (TMDLs)" - A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. (See section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7).

50. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.

51. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.

52. "Toxicity Identification Evaluation (TIE)” is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

53. "Toxicity Reduction Evaluation (TRE)" is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

54. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty-four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

55. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.

56. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.

57. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

58. "Water Quality Standards" - means a narrative and/or numeric restriction established by the Commission applied to state surface waters to protect one or more beneficial uses of such waters. Whenever only numeric or only narrative standards are intended, the wording shall specifically designate which is intended. See 5 CCR 1002- 31.5(37).

59. “Wet pit” – generally, a non-navigable waters (frequently a flooded dry pit), from which raw material is extracted using dragline or barge-mounted dredging equipment (hydraulic dredge), both above and below the water table. (40 CFR 436).

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
FACT SHEET TO PERMIT NUMBER COG500000
GENERAL PERMIT FOR DISCHARGES FROM SAND AND GRAVEL MINING AND PROCESSING (AND OTHER NONMETALLIC MINERALS EXCEPT FUEL)

Permit Writer - Al Stafford
October 13, 2016

TABLE OF CONTENTS

I. TYPE OF PERMIT

Master General, NPDES, Surface Water, Sixth Renewal, Statewide.

II. FACT SHEET DESCRIPTION

This fact sheet addresses the following statutory and regulatory requirements:

- A permit "rationale" as required by Colorado Discharge Permit System Regulations, 5-CCR-61.5(2)
- A "preliminary analysis" as required by Colorado Water Quality Control Act, C.R.S. 25-8-502(3)(b)

- A "statement of basis and purpose" as required by the federal Discharge Permit Regulations, 40 CFR 124.7, to "describe the derivation of permit conditions and the reasons"
- A "fact sheet" as required by the federal Discharge Permit Regulations 40 CFR 124.8 and 124.56 to "briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. describe the reason" for permit terms and conditions
- A "statement of basis and purpose" as required by SB 13-073 and incorporated into Colorado Water Quality Control Act, C.R.S. 25-8-503.5, "explaining the need for the proposed requirements" and to "present evidence supporting the need for the proposed requirements, including information regarding pollutant potential and available controls, incidents of environmental damage, and permit violations"

III. NEED FOR PERMIT REQUIREMENTS

This section includes factors explaining the need for the proposed requirements and presents evidence supporting the need for the proposed requirements, including information regarding pollutant potential and available controls, incidents of environmental damage, and permit violations. The Division has also included some background information to provide context for the statutory and regulatory direction as to how permit terms and conditions are established.

A. Pollutant potential

Sand and Gravel

The Development Document for Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Industry Point Source Category (EPA 440/1-76/059b, July 1979) provides the supporting data and rationale for development of the ELGs and standards of performance for this point source category (i.e., 40 CFR Part 436). For the facilities that are eligible to discharge under the final permit, the major waste water pollutant parameters identified in the development document include total suspended solids, dissolved solids, iron, zinc, fluoride and pH. Note that a number of additional pollutant parameters were studied, including metals, temperature, asbestos, and radium 226, but were not found to be significant at the time the development document was published.

Further, EPA documented the pollutants that are typically associated with sand and gravel mining operations in the federal register with the issue of the 1995 MSGP (60 Federal Register 189, p. 50919. September 29, 1995). For most activities, such as site preparation, mineral extraction, mineral processing, and reclamation, typical pollutants included dust, total suspended solids, total dissolved solids, and turbidity. EPA also identified the potential for pollution from oil and fuel, and other toxic contaminants, such as metals, benzene, trichloroethane, tetrachloroethylene, polyaromatic hydrocarbons, and solvents from equipment and vehicle maintenance, as well as nitrogen and phosphorus from any fertilizer used in reclamation activities. In 2006, EPA issued an industrial stormwater factsheet series and identified the pollutants that may be present in stormwater discharges from sand and gravel operations and Best Management Practices (BMPs) to control these pollutants (US Environmental Protection Agency. EPA-833-F-06-025, Dec. 2006). The pollutants identified in the 1995 FR were also identified in the 2006 fact sheet.

With respect to selenium, numerous peer-reviewed articles on the environmental impacts of high selenium levels on aquatic life have been published. Many of these studies are cited in the January, 2011 TMDL. (*See, i.e.*, *Ohlendorf, et.al.,* 1986, 1988). These studies, and the potential impacts to aquatic species from selenium, were considered as part of the development process for the TMDL. Currently EPA is reviewing the Aquatic Life criterion for selenium. 79 FR 27601-27604. Once finalized, EPA's revised water quality criterion for selenium will provide recommendations to states and tribes authorized to establish water quality standards under the Clean Water Act.

Asphalt Batch Plants

EPA documented the pollutants typically associated with stormwater discharges from asphalt paving manufacturing facilities, which includes asphalt batch plants, in the federal register with the issue of the 1995 MSGP (60 Federal

Register 189, p. 50861 and 50862. September 29, 1995). For material storage and handling activities, typical pollutants included total suspended solids, oil and grease, pH and chemical oxygen demand (COD).

In addition, the 2006 industrial factsheet series issued by EPA for Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers (US Environmental Protection Agency. EPA-833-F-06-019, Dec. 2006) identifies the pollutants that may be present in stormwater discharges from these industrial activities, which includes asphalt batch plants. This factsheet expands the list of pollutants identified in the 1995 FR to also include total dissolved solids (TDS), biochemical oxygen demand (BOD), benzene, methylene blue active substances (MBAS), and metals.

Concrete Batch Plants

EPA documented the pollutants that are typically associated with concrete mixing operations in the federal register with the issue of the 1995 MSGP (60 Federal Register 189, p. 50869 and 50870. September 29, 1995). For concrete mixing activities, typical pollutants included TSS, pH, COD, lead, iron and zinc. At facilities that also conduct equipment/vehicle fueling and maintenance, additional potential pollutants included oil and grease, BOD, lead, aluminum, arsenic, cadmium, chromium, and benzene.

In 2006, EPA issued an industrial stormwater factsheet series and identified the pollutants that may be present in stormwater discharges from concrete manufacturing operations and BMPs to control these pollutants (US Environmental Protection Agency. EPA-833-F-06-020, Dec. 2006). The pollutants identified in the 2006 factsheet included TSS, pH, COD, lead, iron, zinc, oil and grease, BOD.

B. Compliance History

The Division reviewed indicators of permit compliance for general permits COG500000 and COR340000 as part of the renewal process. The Division reviewed Discharge Monitoring Report (DMR) data for general permit COG500000, and obtained input from Division inspectors who conduct field-based assessments of compliance for both COG500000 and COR340000 general permits.

DMR data

The Division reviewed DMR data for approximately 160 facilities authorized under COG500000 from 2008 through 2013. Overall, facilities reported "no discharge" conditions approximately 70% of the time, and failed to submit DMRs approximately 6% of the time. The Division observed that sampling data accuracy was hindered by incorrect data entry or unit conversions in a number of instances.

All facilities were required to monitor or sample for discharge flow, total suspended solids, oil and grease, and pH. The Division made the following observations for these parameters:

- Flow: 65% of the reported flows were less than one million gallons per day; an additional 32% were between one and ten million gallons per day.
- Total suspended solids: The data revealed that there was a 1.9% exceedance rate of the 30 day average effluent limitation.
- Oil and grease: Many facilities entered observations incorrectly and were unclear on the need for sampling; however, of the samples analyzed, none displayed exceedances of the daily maximum effluent limitation.
- pH: a total of 0.5% of the samples values fell outside of the limitation range.

Facilities discharging to the Colorado River Basin were required to monitor for total dissolved solids (TDS) – the mean 30 day average was 1,742 mg/l, with concentrations ranging from zero to 13,160 mg/l. This wide range indicates that TDS discharge concentrations are site specific and vary depending on current site activity.

A total of 19 facilities were required to sample for total recoverable iron – 0.5% of the samples exceeded the 30 day average limitation. One facility sampled for manganese – the 30 day average data displayed a wide range from 5-915 µg/l.

Ten facilities were required to sample for phosphorus, but all facilities either did not submit data or observed "no discharge" conditions during all monitoring periods. Two facilities were required to sample for sulfate – twenty total samples were analyzed, and concentrations ranged from 240-551 mg/l.

While no selenium limitations were applied in the permit certifications, a total of 54 facilities were required to sample for selenium. A total of 444 samples were analyzed, the mean 30 day average concentration was 6.2 µg/l, and the median concentration was 1.0 µg/l. The data indicates a 30% exceedance rate of the 30 day average chronic water quality standard of 4.6 µg/l.

Field-based Compliance Assessments

Input from Division inspectors who conduct field-based compliance assessments for the general permits indicate that some existing permit conditions are not sufficiently clear to enable a compliance determination in the field. Examples include variable monitoring frequency (weekly vs. 2 days/month), continuous vs. instantaneous flow measurement, applicability of monitoring to stormwater discharges, etc. The Division clarified these requirements in this renewal.

Input also indicated that other agency requirements (e.g., Division of Reclamation, Mining and Safety and Mine Safety and Health Administration) and site topography/grading practices may benefit permittees with respect to permit compliance. For example, safety berm requirements can serve as an effective perimeter berm BMP; facility grading that directs stormwater to the mine pit can minimize the need for erosion/sediment control BMPs. However, Division inspectors commonly observed deficiencies during field-based compliance assessments, which include:

- DMR forms not sent to the Division; or DMR information not reported appropriately (units not reported in correct columns; oil and grease not reported properly);
- Non-detects results not averaged appropriately; units not reported correctly; or conversion from laboratory report units to permit required units not done correctly;
- Flow measured as instantaneous instead of continuous.
- Stormwater Management Plan (SWMP) deficiencies;
- Comprehensive inspections deficient or not conducted;
- Annual reports deficient and not signed by appropriate personnel;
- Inadequate secondary containment (lack of good housekeeping);
- Equipment leaks, drip, spills (lack of spill response BMPs);
- Installation details for BMPs implemented in field not included in SWMP;
- Access road BMP deficiencies, including vehicle tracking.

The Division used this information to structure some of the changes and clarifications made to the permit, as discussed in Part III.C and Part V of this Fact Sheet.

C. Basis for Determining Permit Terms and Conditions

The Division develops permit terms and conditions as directed through federal and state statutes and implementing regulations as summarized below.

Congress created the National Pollutant Discharge Elimination System (NPDES) permit program through enactment of the Federal Water Pollution Control Act (FWPCA) Amendments of 1972. This followed a period of previous water quality legislation where Congress had authorized states to develop water quality standards that were intended to limit discharges of pollutants based on the individual characteristics of waterbodies. The FWPCA Amendments of 1972 introduced the NPDES program including the requirement to include technology-based requirements to address a concern about a lack of progress in water quality protection and a lack of enforceability in previous legislation.

The FWPCA Amendments contained four important principles related to the NPDES program as summarized by EPA:

1. The discharge of pollutants to navigable waters is not a right.
2. A discharge permit is required to use public resources for waste disposal and limits the amount of pollutants that may be discharged.
3. Wastewater must be treated with the best treatment technology economically achievable, regardless of the condition of the receiving water.
4. Effluent limits must be based on treatment technology performance, but more stringent limits may be imposed if the technology-based limits do not prevent violations of water quality standards in the receiving water.

The NPDES permit was created by Congress as the implementation tool for restriction of the quantity, rate, and concentration of pollutants that the point sources may discharge into water. The Division, as the delegated authority for development and issuance of NPDES permit for the state of Colorado, is obligated to develop and issue NDPES permits in a manner that meets both state and federal statutory and regulatory requirements.

Routine review is an integral aspect of the NPDES program. Congress's expectation is that permits remain current in their ability to incorporate advancements in science and technology, law, and be reflective of current industrial operations resulting in a discharge of pollutants to waters. The Division must renew general permits once every 5 years, and must include such conditions in the renewal permit that are necessary to implement statutory and regulatory provisions. This comprehensive permit renewal results from the Division's review of the sand and gravel stormwater and process water permits, which identified differences in the existing permits relative to EPA's MSGP, other state permits, case law, and statutory and regulatory direction provided.

EPA summarizes the major steps for development and issuance of NPDES permits, as required by 40 CFR §124, as follows:

1. Receive application from permittee.
2. Review application for completeness and accuracy.
3. Request additional information as necessary.
4. Develop technology-based effluent limits using application data and other sources.
5. Develop water quality-based effluent limits using application data and other sources.
6. Compare water quality-based effluent limits with technology-based effluent limits and choose the more stringent of the two as the effluent limits for the permit.
7. Develop monitoring requirements for each pollutant.
8. Develop special conditions.
9. Develop standard conditions.
10. Consider variances and other applicable regulations.
11. Prepare the fact sheet, summarizing the principal facts and the significant factual legal, methodological and policy questions considered in preparing the draft permit including public notice of the draft permit, and other supporting documentation.
12. Complete the review and issuance process.
13. Issue the final permit.
14. Ensure permit requirements are implemented.

During the development of this permit, the Division received a number of comments suggesting that the Division perform a cost-benefit analysis to justify the changes in terms and conditions, specifically monitoring and recordkeeping requirements and effluent limitations. Neither the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations (5 CCR 61) nor the federal Clean Water Act, and federal discharge permit regulations (40 CFR 122, 124, etc), require a formal monetized cost benefit analyses for development of permit terms and conditions, where every dollar spent on pollution control, monitoring, and recordkeeping must return at least a dollar in enhanced water quality. Rather, the Division develops permit terms and conditions as directed through federal and state statutes and implementing regulations with key thresholds for decision making as

summarized below.

All NPDES permits are required to contain technology-based limitations. [*see* 40 CFR §§122.44(a)(1) and 125.3. CWA sections 301(b)(1)(A) for (BPT); 301(b)(2)(A) for (BAT); and 301(b)(2)(E) for (BCT).] The Division developed technology based effluent limits consistent with the federal requirements cited above, and state requirements such as those contained in 5 CCR 1002-62. The Division also found in this case that more stringent limits must be imposed for some discharges, specifically those discharging to impaired waterbodies consistent with the assumptions and requirements of TMDLs. Additional information regarding the derivation and establishment of effluent limits is contained in this fact sheet.

All NPDES permits are required to contain monitoring requirements. Federal and state permitting regulations require that at a minimum permits specify monitoring requirements for each pollutant limited in the permit, and for industrial stormwater permits, specify on-site inspection requirements. Permits must specify monitoring equipment, methods, intervals, and frequencies sufficient to yield data which are representative of the monitoring activity and must specify the content of records to be maintained, and records retention requirements. The state discharge permit regulations establish a threshold of "reasonableness" in directing the derivation of monitoring and recordkeeping requirements. For development of this permit the Division determined the monitoring and records logically needed to meet the threshold of representative of the monitoring activity, demonstrate that the monitoring was adequately performed, document the conditions surrounding the event and what was observed, and document findings and actions taken, while not including superfluous requirements.

IV. SCOPE OF THE GENERAL PERMIT

Two CDPS general permits currently exist (see table below) related to sand and gravel or other non-metallic mineral mining and processing facilities (except fuel), hereafter referred to as 'sand and gravel facilities' in this fact sheet. The COG500000 general permit authorized both process water and stormwater discharges; the COR340000 general permit authorizes stormwater-only discharges. Together these general permits provide coverage for discharges from approximately 660 sand and gravel facilities across the state. Both permits were administratively extended to provide ongoing permit coverage until the renewal was complete. This renewal master general permit is necessary to provide continued coverage for these existing discharges, and for new discharges from sand and gravel facilities.

Permit name and number	Effective date	Expiration date
Sand & Gravel Mining and Processing (And Other Nonmetallic Minerals, Except Fuel) (COG500000)	July 1, 2008	June 30, 2013
Stormwater Discharges Associated with Sand & Gravel Mining and Processing (And Other Nonmetallic Minerals, Except Fuel) (COR340000)	October 1, 2007	September 30, 2012

This renewal master general permit (permit) combines the two general permits referenced above. The Division determined that combining the two existing general permits will result in a more comprehensive permitting approach; consistency of permit requirements; clearly defined termination requirements; and a more efficient renewal process.

A. Standard Industrial Classification (SIC) codes and Descriptions of Covered Discharges

This permit authorizes the discharge of **process water** and **stormwater runoff** to surface waters of the state, from active and inactive eligible facilities engaged in mining and processing of sand and gravel (and other nonmetallic minerals, except fuel). Such facilities are generally described by Standard Industrial Classification (SIC) Code Major Group 14.

This permit also authorizes the discharge of **stormwater runoff** to surface waters of the state from the following non-mining activities that are located **at** sand and gravel facilities: asphalt batch plants (SIC code 2951), concrete batch plants (SIC Code 3273), and asphalt and concrete recycling industrial activities.

The public notice version of the permit did not authorize the non-mining discharges described above, opting to authorize them through alternate permits and focus the renewal permit solely on mining activities. However, after considering the stakeholder comments received on this proposed approach during the public notice period, and further weighing the associated advantages and disadvantages of authorizing discharges from the non-mining activities, the division ultimately decided to include coverage for stormwater discharges from asphalt batch plants (SIC code 2951); stormwater discharges from concrete batch plants (SIC code 3273); and stormwater discharges from asphalt and concrete recycling activities in final permit COG500000 (see response to Comment ID COG50-2.2 and COG50-5.3).

Note that the term 'asphalt batch plant' (2951 SIC code) as used in the renewal permit documents refers to the manufacturing plant that combines aggregate and an asphalt binder to produce asphalt concrete. Asphalt concrete is known by many different names, such as hot mix asphalt, plant mix, bituminous mix, bituminous concrete, etc. The division is using the term 'asphalt batch plant' instead of 'asphalt concrete batch plant' to avoid any confusion with concrete batch plants (3273 SIC code), and for consistency with other CDPS permits.

The final permit clarifies the types of discharges that are eligible for permit coverage, as follows:

1. **Process water** discharges from facilities that produce the following commodities.

- Dimension stone (SIC code 1411)
- Crushed stone (SIC code 1422, 1423, 1429)
- Construction sand and gravel (SIC code 1442)
- Industrial sand (SIC code 1446)
- Kaolin and Ball Clay (SIC code 1455)
- Clay, Ceramic, and Refractory Minerals, Not Elsewhere Classified (SIC code 1459)
- Graphite (SIC code 1499)

This list includes all commodities identified in the applicable federal Effluent Limitation Guideline [40 CFR Part 436 (Mineral Mining and Processing Point Source Category)] for which a facility discharge is allowed. The list also includes facilities that produce Dimension stone, Kaolin and Ball Clay, and Clay, Ceramic, and Refractory Minerals, as the Division has permitted discharges from such facilities in the past. The list does not include those subparts that require 'no discharge' of process generated wastewater, as discussed in the Limitations on Coverage section of this fact sheet. APPENDIX A of this fact sheet provides a description of each SIC code identified above.

The following process water discharges from the facilities identified in this section are eligible for permit coverage.

a. mine dewatering, which includes:
   i. any water, including *groundwater, seepage, and stormwater* (precipitation and surface runoff), that is impounded or that collects in the mine pit (surface or underground workings) and is pumped, drained, or otherwise removed from the mine through the efforts of the mine operator;
   ii. additionally, for construction sand and gravel facilities and industrial sand facilities only, wet pit* overflow caused solely by direct rainfall and/or groundwater seepage.
b. process generated wastewater, which includes any wastewater used in slurry transport of mined materials, air emissions control, and processing exclusive to mining (40 CFR Part 436);
c. water used in sand and gravel processing (e.g., sorting, screening, crushing, and classifying);
d. stormwater runoff that becomes comingled with the above listed wastewaters before the discharge point.

* The division also provided a definition for "wet pit", consistent with the development document for the federal ELG (40 CFR 436), as a non-navigable water (frequently from a flooded dry pit) from which raw

material is extracted using dragline or barge-mounted dredging equipment (hydraulic dredge), both above and below the water table.

2. **Stormwater** discharges from the areas identified below, at active and inactive SIC code Major Group 14 facilities, including those from asphalt and concrete batch plants (SIC codes 2951 and 3273), and from asphalt and concrete recycling activities. Note that the final permit does not include stormwater discharges from refuse sites; sites used for the application or disposal of process waste waters; and sites used for residual treatment, storage, or disposal as stormwater discharges from these activities are not included in the eligibility scope of the permit. For example, sand and gravel facilities that have a concurrent or post-mine land use as a landfill must obtain CDPS stormwater discharge permit coverage separate from this permit.

    a. industrial plant yards;
    b. immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
    c. material handling sites, including those used for asphalt and concrete recycling activities, asphalt batch plants, and concrete batch plants;
    d. sites used for storage and maintenance of material handling equipment;
    e. shipping and receiving areas;
    f. manufacturing buildings, including asphalt batch plants and concrete batch plants;
    g. storage areas and stockpiles of raw material, intermediate products, byproducts, finished products or waste products (including topsoil, overburden, and materials associated with asphalt and concrete recycling activities, asphalt batch plants, and concrete batch plants);
    h. areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater;
    i. all disturbed areas (other than those subject to the process water discharge provisions above), including mine pit out slopes; and,
    j. stormwater run-on that commingles with stormwater discharges associated with sand and gravel mining and processing.

3. **Allowable non-stormwater discharges** as described in this part, provided that appropriate control measures are implemented to minimize erosion and sediment transport resulting from such discharges, and the non-stormwater component(s) of the discharge and the control measure(s) used are identified in the Stormwater Management Plan (SWMP). Note that in the final permit, the division clarified that 'uncontaminated condensate' as an allowable non-stormwater discharge refers to *external atmospheric condensation* only.

    a. Uncontaminated condensate (external atmospheric condensation, only) from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
    b. Landscape (including reclamation activities) watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
    c. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blow down or drains); and

B. Summary of Major Changes from Last Permit Versions

With respect to process water discharges eligible for coverage under the renewal permit, the Division made changes to the permit to clarify and update effluent limitations and other terms and conditions, consistent with regulatory

requirements and direction, and Division practice. This fact sheet addresses these changes, and an updated evaluation of parameters has been added.

With respect to stormwater discharges eligible for coverage under this renewal permit, the Division's approach was consistent with that taken for general permit COR900000 (Stormwater Discharges Associated with Non-Extractive Industrial Activity). Specifically, the Division evaluated the effluent limitations, and terms and conditions contained in EPA's 2008 and 2015 MSGPs related to sand and gravel industrial activities, and the associated basis for each provided in the Fact Sheets. The Fact Sheets for the MSGPs provide detailed background and basis for the organization, scope and content of those permits; these documents are available on EPA's website. In this fact sheet, the Division has documented where terms and conditions in this permit are consistent with the MSGPs.

Pre-Public Notice stakeholder meeting

As part of the renewal of the existing general permits, the Division conducted a stakeholder process that included a Pre-Public Notice Meeting on February 28, 2014. The purpose of the stakeholder meeting was to increase awareness of the renewal process for the general permit, discuss the substantive areas of review, and obtain input for developing draft permit conditions. The Division considered the stakeholder input received during the meeting, and written input received after the meeting.

The division considered the stakeholder input in developing draft permit conditions, and balanced these comments with regulatory and environmental obligations. Major stakeholder input that was submitted is detailed below:

1. Within the stakeholder process, the Division sought guidance on whether the former COG500000 and COR340000 permits should be combined into one permit that authorizes both stormwater and process water discharges. Permittees responded positively to this proposal, so long as the Division made the difference in permit requirements for stormwater and process water discharges very clear. The Division consequently has combined the two permits, and has clearly labeled throughout the permit sections that apply only to stormwater or only to process water discharges. The Division also provided a general overview at the beginning of the permit, which specifies which sections apply to only one type of discharge.

2. Stakeholders expressed concern regarding requiring benchmark sampling for stormwater discharge only facilities due to burden and the capacity of Practice Based Effluent Limitations to minimize pollutants of concern from discharging from the site. As noted further within this Fact Sheet, the Division has determined that benchmark sampling will not be required for stormwater discharges from SIC code Major Group 14 activities, and instead visual monitoring will be required, as further described below.

3. The Division also addresses within this Fact Sheet stakeholder concerns regarding unstaffed and remote sites. The Division acknowledges the burden in sampling at inactive and unstaffed sites (whether they are remote or not), and therefore did not require visual monitoring at such facilities. However, some level of monitoring must be maintained to continue to ensure a low pollutant potential, and therefore an increased inspection frequency is included in the permit for these sites.

4. An issue of high input within the industry was the implementation of the selenium TMDL for the Gunnison River and tributaries, as well as selenium monitoring on impaired segments. Implementation for these situations is further addressed within this fact sheet, which takes into account the input of the permittees as well as the assumptions and requirements of the established TMDL. Intake credits are also discussed in response to stakeholder comments regarding this topic.

Summary of Major Changes from the Last Permit Versions that were contained in the Draft Permit

This fact sheet provides a description of the major and significant changes from the existing sand and gravel stormwater discharge permit (COR340000) and process water discharge permit (COG500000). A summary of the major changes from the previous permits are provided below; Part V of this fact sheet provides further detail, including additional basis for the changes, where warranted.

General

- The Division added a new section entitled **Allowable Non-Stormwater Discharges** to the renewal permit to identify all allowable non-stormwater discharges, including those not specific to this sector. The Division added this section to clarify the scope of the renewal permit.

- The renewal permit clarifies the administrative aspects of permit coverage (i.e., Application Requirements, Permit Certification Procedures, Alternative permits, Permit Expiration and Continuation, Transfer of permit coverage, Modifying an existing permit, and Permit Termination Procedures), and includes clear direction for permittees to change permit coverage from one that authorizes both process water and stormwater, to stormwater-only permit coverage.

- The Division added a new section entitled **Permit Compliance** to the renewal permit to clarify conditions that constitute a violation of the permit (e.g., failure to comply with the terms and conditions of the permit; failure to perform corrective actions, etc.). This section also clarifies that correcting a permit violation does not remove the original violation.

Process water

- Discharges from facilities that produce Phosphate rock (SIC code 1475) are no longer eligible for coverage under this permit.
- Process water discharges from asphalt batch plants are no longer eligible for coverage under this permit.
- Process water discharges from concrete batch plants, including wash water discharges from associated trucks and drums are no longer eligible for coverage under this permit.
- Flow limitations were added to the effluent limitations tables.
- Effluent limits for selenium were derived for discharges to the Gunnison River and tributaries, consistent with the assumptions and requirements of the TMDL.

Stormwater

Many of the provisions applicable to stormwater in the renewal permit are consistent with CDPS general permit COR900000. Changes the division made to the final permit resulting from public comments are provided following the original list.

- The Division modified the self-inspection requirements in the renewal permit. Most significant among the changes are inspection frequency (i.e., quarterly inspections); inspection scope (i.e., one inspection must be conducted during a run-off event); modified inspection frequency for inactive and unstaffed facilities (6 per year); and corrective action requirements.
- The Stormwater Discharge Effluent Limitations contained in this permit are located in a section separate from the Stormwater Management Plan (SWMP), thereby differentiating effluent limitations from other terms and conditions of the permit.
- The Division modified the practice-based effluent limitations required by this permit from those required under permits COG500000 and COR340000. Most significant among the changes are including the term "minimize" within the practice-based effluent limitations, and adding several new practice-based effluent limitations.
- The Division added a new section (Water Quality Based Effluent Limitations) that addresses water quality-based effluent limitations (WQBELs) applicable to stormwater discharges.
- The Division consolidated and clarified monitoring requirements for stormwater discharges in the General Monitoring Requirements - Stormwater Only section of the renewal permit.

- The Division added a new section (Specific Monitoring Requirements - Stormwater Only), that addresses requirements for Visual Monitoring, and Water Quality Standards monitoring requirements as applicable to the facility.
- The Division added a new section (Corrective Actions) that identifies permittee responsibilities with respect to resolving specific facility conditions.

Summary of Major Changes from the Draft Permit to the Final Permit

The division solicited input on the draft permit conditions, specifically for situations where reviewers found that the information presented in the draft permit, upon which the Division relied to make draft decisions, was incomplete; and on the specific permit language. The final permit contains permit conditions based on the best information available to inform decisions for Colorado, and incorporates additional information received on these topics during public notice, as appropriate.

The final permit contains the following new or modified provisions. Please see the Division Response to Public Comments for a discussion of these changes.

- The division added flexibility to the self-inspection requirements in the permit by adding an exception to the annual runoff event inspection for Completed and Finally Stabilized Areas.
- The division added coverage for stormwater discharges from asphalt batch plants (SIC code 2951), stormwater discharges from concrete batch plants (SIC code 3273), and stormwater discharges from asphalt and concrete recycling activities in final permit COG500000.
- The division modified the Specific Monitoring Requirements - Stormwater Only section, to add Benchmark Monitoring requirements for Asphalt Batch Plants and Concrete Batch Plants, as applicable to the facility, and added Sector-Specific Requirements for Asphalt Batch Plants and Concrete Batch Plants at Parts I.O and I.P, respectively.
- The division added definitions to the permit (Appendix C) to clarify the meaning of 'inactive' for this permit, which broadens the applicability of the monitoring exceptions for inactive and unstaffed sites, and to clarify the terms wet pit, asphalt batch plant, and asphalt concrete as used in this permit.
- The division added new monitoring exceptions for Completed and Finally Stabilized Areas.
- The division added a new provision that allows the division to revoke any monitoring exception.
- The division added requirements regarding EPA's Net-DMR submittal.

C. Limitations on Coverage

This section of the fact sheet identifies those discharges from sand and gravel facilities that are specifically excluded from permit coverage. Permittees may seek individual or alternate general permit coverage for such discharges, as appropriate and available.

After public notice, the division added a limitation of coverage for discharges from placer mining activities (SIC Major Group 10) to clarify that the scope the permit, like the previous permit, does not authorize discharges from placer mining activities. The division further clarified the requirement to obtain permit coverage under the Construction stormwater permit (general permit COR030000) in this fact sheet (see below). In addition, the division removed the limitation for process water discharges from 'major' facilities, as determined by the NPDES Permit Rating Work Sheet. The following list of limitations incorporates these changes. Please see the Division Response to Public Comments for a discussion of these changes.

- Stormwater discharges associated with construction activity that disturbs one acre or more are excluded from coverage. Consistent with Division practice, construction activity **does not** include land disturbance resulting from the act of mining, such as removal of topsoil and overburden to expose mineable minerals, or the

extraction, removal or recovery of minerals. Construction activity does include construction of facilities necessary to conduct mining activities, including but not limited to haul roads, pads, structures, etc.

The Division considered including these construction activities (those that exceed one-acre of disturbance) as an industrial activity authorized under this renewal permit. However, the Division determined that because an ELG has been promulgated by EPA for the construction and development category (Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 40 CFR Part 450), it was more appropriate to interpret the ELG during renewal of the CDPS stormwater construction permit (COR030000). In addition, the Division finds it most efficient, for general permits, to have a specific type of discharge authorized in just one general permit rather than multiple general permits. For these reasons, the Division decided against providing coverage for construction activities in this renewal permit. Therefore, stormwater discharges from construction of haul road, pad, structure, etc. at sand and gravel facilities, that exceeds the one-acre threshold and that do not commingle with process water from the facility (see discussion on **Commingled discharges** below), must be covered by a separate stormwater construction permit certification.

- Commingled discharges: The division considers stormwater runoff (from industrial or construction activities) that combines with process water (such as water in the mine pit), to be process water. Such discharges are subject to the process water provisions in the permit, and the stormwater provisions do not apply. This approach also applies to stormwater runoff from construction activities at the facility that exceed the one-acre threshold; specifically, if run-off from such activities commingles with facility process water, the commingled discharge is subject to the process water provisions in the permit, and the activity does not require separate construction stormwater permit coverage.

- Discharges to outstanding waters are excluded because the Division requires such discharges to be authorized by an individual permit to fulfill the antidegradation requirements of Regulation 31-The Basic Standards and Methodologies for Surface Water.

- Discharges solely to ground water are excluded water if such discharges are subject to direct regulation by implementing agencies under Section 25-8-202(7) of the Water Quality Control Act or Senate Bill 181. At mining facilities, discharges solely to ground water fall under the jurisdiction of the Division of Reclamation, Mining and Safety. This exclusion does not apply to point source discharges of pollutants to groundwater in direct hydrologic connection to surface waters and for which the Division determines the surface waters requirements of Regulation 61 apply, such as for some discharges to groundwater in alluvial areas.

- Discharges currently covered by another permit or a Division Low Risk Guidance Document are excluded. As stated in the Low Risk Policy, the Division does not intend to provide general permit coverage for discharges covered by a Low Risk Guidance Document.

- Discharges with chemical additions (including release agents) are not authorized unless expressly approved by the Division, and the Division provides notification of such approval to the permittee. A release agent is a substance used to aid in the separation of the desired material from the substrate, and must be disclosed. Part I.A.3 of the permit provides the process and information required to request Division approval of a specific chemical. If authorized, all chemicals must be used and stored in accordance with the manufacturers' recommendations and in accordance with any applicable state or federal regulation. On a case-by-case basis, the Division may determine that some discharges with chemical addition require individual permit coverage, such as if the specific chemical proposed contains constituents of concern that requires a more extensive reasonable potential analysis, or if dilution is required to meet applicable water quality standards in the receiving water.

- Process water discharges from the facilities listed below are excluded from coverage due to the potential toxicity and wide variety of pollutants, the minimal operations in Colorado, or Federal ELGs that require no discharge of process water from these facilities:

Facility types that require no discharge of process water	40 CFR 436 Subpart	SIC Code
Gypsum facilities that do not employ wet air emissions control scrubbers	E	1499
Asphaltic mineral facilities	F	1499
Asbestos and wollastonite facilities	G	1499
Barite facilities that do not employ wet processes or flotation processes	J	1479
Flourspar facilities that do not employ heavy media separation or flotation processes	K	1479
Saline from brine lake facilities	L	2899
Borax facilities	M	1474
Potash facilities	N	1474
Sodium sulfate facilities	O	1474
Phosphate Rock	R	1475
Frasch sulfur facilities	S	1479
Bentonite facilities	V	1459
Magnesite facilities	W	1459
Diatomite facilities	X	1499
Jade facilities	Y	1499
Novaculite facilities	Z	1499
Tripoli facilities	AF	1499
Asphalt batch plants	40 CFR 443	2951
Concrete batch plants, including associated truck and drum wash out	---	3273

V. BASIS FOR MAJOR CHANGES FROM LAST PERMIT VERSIONS

A. General

1. **Termination criteria**

The permit identifies the process by which the permittee can inactivate permit coverage, and the mandatory termination conditions for sand and gravel facilities that have a Division of Reclamation, Mining and Safety (DRMS) financial and performance warranty, and those that do not.

Termination of permit coverage requires that 'all permitted process water discharges authorized by this permit … have ceased'. This requirement applies specifically to the discharge authorized by the Water Quality Control Division. While this discharge remains, the permit certification cannot be terminated.

In some cases, the post-mining land-use for the sand and gravel pit is identified as a pond (such as for livestock watering, recreation purposes, etc.), and occasionally, the pond will discharge due to localized hydrology, etc. In such cases, when the post-mining land-use is achieved, the Division does not require continued permit coverage for discharges from the pond, for the following reasons.

- The post-mining land-use pond no longer meets the definition of a 'mine' – As provided in the effluent limitation guidelines found at 40 CFR Part 436 (Mineral Mining and Processing Point Source Category),

the term 'mine' means an area of land, surface or underground, actively mined for the production of [commodity] from natural deposits.

- The pond discharge does not meet the definition of 'mine dewatering' – As provided in the effluent limitation guidelines found at 40 CFR Part 436, 'mine dewatering' includes any water, including groundwater and stormwater, that is impounded or that collects in the mine and is pumped, drained, or otherwise removed from the mine through the efforts of the mine operator.

Because the post-mining land-use pond is no longer a mine, and therefore, the pond discharge is not mine dewatering, the Division determined that continued permit coverage for any discharge from the pond is not required. Note that termination is contingent on the permittee demonstrating to the Division that DRMS approved the applicable financial and performance warranty release, or alternatively, that the facility meets the final stabilization criteria established in the permit. This termination approach is a long-standing Division practice for sand and gravel facilities with a post-mining land-use as described above. The Division added the specific termination criteria in the permit and the associated discussion in the fact sheet to facilitate public comment and improve transparency and certainty.

2. **Electronic reporting of data**

The final permit includes requirements regarding EPA's Net-DMR submittal, and dates when permittees must start reporting data electronically. Prior to December 21, 2016, the permittee may elect to electronically submit DMRs instead of mailing paper DMRs by using the EPA's Net-DMR service. Starting on December 21, 2016, the permittee must electronically report DMRs by using the EPA's Net-DMR service unless a waiver is granted in compliance with 40 CFR 127.

B. Process water

This section provides the basis for major changes to the process water provisions from the previous permit versions. The discussion of process water effluent limitations is at Section VI of this fact sheet. Note that after public notice, the division made the following changes to the final permit:

- removed the limitation for process water discharges from 'major' facilities, and such facilities are now eligible for coverage under the final permit, and
- removed the discussion regarding facilities that produce asphalt emulsion from the fact sheet, as it is unlikely that this manufacturing industrial activity occurs at mining facilities in Colorado.

The following list incorporates changes to the final permit resulting from the division's review of comments received during the public notice period. Please see the Division Response to Public Comments for a discussion of these changes.

1. **Process water discharges from Dimension stone; Kaolin and Ball Clay; and Clay, Ceramic, and Refractory Minerals**

The Division clarified the types of facilities that are eligible for coverage under the permit, and specifically identified the following commodities: Dimension stone (SIC code 1411); Kaolin and Ball Clay (SIC code 1455); and Clay, Ceramic, and Refractory Minerals (SIC code 1459 - except bentonite) as eligible. The Division highlighted these specific commodities as Division records indicate that discharges from such facilities have been previously permitted -- such facilities are not prohibited from discharging by an applicable federal ELG, and the pollutants of concern are similar to other facilities eligible for coverage under the permit.

2. **Process water discharges from Graphite mining facilities**

The Division clarified the types of discharges from graphite facilities that are eligible for coverage under the permit. In accordance with the Federal ELG for graphite facilities, "Only that volume of water resulting from precipitation that exceeds the maximum safe surge capacity of a process waste water impoundment may be

discharged from that impoundment. The height difference between the maximum safe surge capacity level and the normal operating level must be greater than the inches of rain representing the 10-year, 24-hour rainfall event as established by the National Climatic Center, National Oceanic and Atmospheric Administration for the locality in which such impoundment is located."

3. **Discharges from facilities that produce Phosphate rock (SIC code 1475) excluded from coverage**

The Division removed from the types of facilities eligible for coverage under the permit, facilities that produce Phosphate rock (SIC code 1475). The Division determined that the pollutants of concern associated with Phosphate rock are different from other facilities eligible for coverage under the permit (based on the Toxic Pollutant Potential factor for the NPDES Permit Rating Work Sheet), and review of Division and DRMS records indicates that facilities that produce Phosphate rock are not currently permitted. Any new facilities that produce Phosphate rock and require discharge permit coverage must apply for an individual permit or an alternative general permit, as applicable.

4. **Process water discharges from asphalt batch plants excluded from coverage**

The Division determined, based on review of the applicable federal ELG (40 CFR 443) and associated Development Document, that the required level of technology-based control (BPT/BAT/NSPS) for discharges from facilities that produce asphalt concrete is '**no discharge of process wastewater pollutants to navigable waters'**. Therefore, the Division excluded process water discharges from asphalt batch plants from coverage under this permit.

5. **Process water discharges from concrete batch plants (including truck wash water /drum wash out) excluded from coverage**

The Division determined that the pollutants of concern associated with truck wash water and process water discharges from concrete batch plants are different and potentially more toxic than those for other facilities eligible for coverage under the permit. Therefore, the Division excluded process water discharges from concrete batch plants from coverage this permit.

6. **Flow limitation**

The Division added a flow limitation in the permit, as required by 5 CCR 1002-61.8(2)(i). The chronic flow limit will be equal to the maximum monthly average flow rate provided in the permit application. As required by 5 CCR 1002-62.5(7), the flow-measuring device must indicate values within ten percent of the actual flow being measured. The division is also requiring reporting for total quarterly flow in cases where needed to support a loading analysis.

7. **Standardized monitoring frequency**

The final permit provides coverage for process water discharges from both 'minor' and 'major' facilities, determined using the NPDES Permit Rating Work Sheet. Therefore, the final permit contains monitoring frequencies for both major and minor facilities, consistent with Water Quality Control Division Policy WQP-20 (Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Domestic and Industrial Wastewater Treatment Facilities).

8. **Separate monitoring parameter line for selenium**

The Division added a separate line for selenium in the effluent limitations tables in Part I.C.1 of the permit (selenium was included in the 'Other Pollutants of Concern' line in the previous permit). This change was made for clarity, and to clearly identify the regulatory basis for selenium monitoring.

C. Stormwater

1. **Control measures**

The Division uses the term "control measure" instead of "Best Management Practice (BMP)" throughout this permit. This term has a broader range of meaning than BMP, as it includes both BMPs and "other methods", and

as such, better describes the range of pollutant reduction practices a permittee may implement. The Division does not typically mandate specific control measures a permittee must implement to control pollutant sources at their facility. The permittee has the flexibility to select appropriate control measure that when implemented, enable the permittee to meet all applicable permit effluent limitations for stormwater discharges from their facility.

In this part of the permit, the Division uses and defines the term "**minimize**" to provide the permittee with a clear expectation for the level of performance of control measures implemented to achieve effluent limits that require the permittee to "minimize" pollutants. The Fact Sheet for EPA's MSGPs provides significant discussion about both terms with respect to the levels of technology-based control required by this permit.

This permit requires that **installation and implementation specifications** be retained with the Stormwater Management Plan for each control measure used by the permittee to meet the effluent limitations contained in the permit. The Division finds that this necessary to ensure the permittee recognizes, selects, and implements control measures that are appropriate for specific pollutant sources. The Division's expectation for maintenance of control measures is that the permittee conduct this action "immediately, in most cases". The intent of this permit condition is that the permittee correct control measures as they are discovered, and that interim control measures are implemented while the primary control measure is corrected.

2. **Stormwater Discharge Effluent Limitations**

This permit identifies all stormwater effluent limitations required by the permit (practice-based effluent limits and water quality-based effluent limitations), and clearly states that all discharges authorized under the permit shall attain these effluent limitations. This permit does not contain any numeric effluent limits based on effluent limitation guidelines (ELGs) for stormwater, as they are not applicable to the discharges eligible for coverage under this permit. The effluent limitations contained in this permit are located in a section separate from the SWMP, thereby differentiating effluent limitations from other terms and conditions of the permit.

The practice-based effluent limits (PBELs) are technology-based effluent limits - technology-based effluent limits are required for all CDPS permits. The PBELs correspond to the required levels of technology-based control (BPT, BCT, BAT) for various discharges under the Colorado Water Quality Control Act. For this permit, the technology-based effluent limits for stormwater discharges (i.e., the PBELs) are based on Best Professional Judgment (BPJ) decision-making.

The renewal permit includes water quality-based effluent limits as necessary to meet applicable water quality standards and supplement the technology-based effluent limits. The Division determined that it was appropriate to include the BPJ based technology-based effluent limits and the water quality-based effluent limits on the same basis EPA used in development of EPA's MSGPs.

a. **Practice-based Effluent Limitations**

The Division modified the practice-based effluent limitations required by this permit. Most significant among the changes are including the term "**minimize**" within the practice-based effluent limitations, and adding four new practice-based effluent limitations, as described below.

i. *Minimize Exposure*

Minimizing exposure prevents pollutants from coming into contact with precipitation and can reduce the need for control measures to treat or otherwise reduce pollutants in stormwater runoff. As such, this is one of the most important control options.

ii. *Management of Runoff*

Managing runoff (diverting, infiltrating, reusing, containing, or treating stormwater runoff) prevents stormwater contact with exposed materials or pollutant sources, and like minimizing exposure, can reduce the need for control measures to treat or otherwise reduce pollutants in stormwater runoff.

iii. *Waste, Garbage and Floatable Debris*

In addition to other stormwater pollutants, the permittee must minimize the discharge of waste, garbage, and floatable debris, pollutants associated with most if not all industrial activities, so that these pollutants are not ultimately discharged to receiving waters. Trash and floating debris in waterways have become significant pollutants, especially near areas where a large volume of trash can be generated in a concentrated area. Trash can cause physical impairments in water bodies to aquatic species and birds, is also visual pollution, and detracts from the aesthetic qualities of receiving waters.

iv. *Salt Storage Piles or Piles Containing Salt*

Salt storage piles are prevalent across the country. The permit requires that permittees adequately control salt piles to prevent aquatic effects resulting from stormwater runoff from such piles. Preventing exposure of piles to stormwater or run-on also eliminates the economic loss from materials being dissolved and washed away.

b. **Water Quality-Based Effluent Limitations**

The renewal permit includes a new section that addresses water quality-based effluent limitations (WQBELs) applicable to stormwater discharges. The permit allows the Division to conduct a reasonable potential analysis that allows one of three outcomes to be determined: 1) a finding of reasonable potential, which for a new (proposed) discharge would need to be based on information other than monitoring from the proposed facility, such as monitoring information for similar sites/discharges, published scientific information, or information in the application, 2) a monitor-only reasonable potential decision, which indicates that the Division expects the pollutant to be present in the discharge, but does not have certainty that levels will cause or contribute to an exceedance of a water quality standard, or 3) a finding of no reasonable potential and no monitoring, indicating that the Division either does not expect the pollutant to be present or if expected to be present it is at levels significantly below the applicable water quality standard.

i. *Water Quality Standards*

a) Consistent with EPA's MSGPs and general permit COR900000, the Division included the requirement that 'stormwater discharges authorized under the renewal permit must be controlled as necessary to meet applicable water quality standards'. Generally, this means attaining the water quality standards in the receiving water, but may be end-of-pipe due to site-specific circumstances such as for new discharges to impaired waters. This statement replaces the statement in the preceding sand and gravel stormwater permit that 'stormwater discharges from the industrial activity shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any water quality standard, including narrative standards for water quality'. This requirement applies to all stormwater discharges; additional requirements apply to discharges to Water Quality Impaired Waters and Waters Designated as Critical Habitat for Threatened and Endangered Species, as described below.

b) The Division expects that compliance with the other conditions in the renewal permit will control discharges as necessary to meet applicable water quality standards. However consistent with EPA's MSGPs and general permit COR900000, the Division included a provision in the permit that allows a site-specific water quality-based effluent limitation to be included in the certification as necessary to comply with water quality standards. The Division also included a provision in the permit that allows site-specific terms and conditions to be included in the certification to determine whether compliance with the other terms and conditions of the permit will control the discharge as necessary to meet applicable water quality standards.

c) The type of information that the Division anticipates may become available substantiating the need for a site specific water quality-based effluent limitation includes, but is not limited to, in-stream water quality data, discharge monitoring data and information regarding corrective

actions. Any site-specific water quality-based effluent limitation will be derived from and comply with the associated water quality standard.

d) The type of additional terms and conditions the Division anticipates could be appropriate to determine if compliance with the other terms and conditions of the permit will control the discharge as necessary to meet applicable water quality standards includes, but is not limited to in stream monitoring, site-specific discharge water quality standards monitoring, site-specific benchmarks, and source characterization studies.

ii. *Additional Requirements for Discharges to Water Quality Impaired Waters*

a) **Existing** Discharge to an Impaired Water **with** an EPA Approved or Established TMDL.

Consistent with EPA's MSGPs and general permit COR900000, the Division will implement a new review process for existing discharges to impaired waters with an approved or established TMDL. Where an operator indicates on its application that the discharge is to one of these waters, the Division will determine whether the pollutant is of concern for the discharge and review the applicable TMDL to determine whether the TMDL includes requirements that apply to the individual discharger or to its industrial sector. The Division will determine whether additional requirements are necessary to comply with the wasteload allocation or alternatively, whether an individual permit application is necessary. Where the discharge is authorized under the general permit, the Division may include water quality standards monitoring to verify that the discharge will be controlled as necessary to be consistent with the assumptions and requirements of the TMDL through compliance with the other terms and conditions of the general permit.

The Division utilizes this process for new discharges to impaired waters, and intends to extend this process to existing discharges to impaired waters in this category under this renewal permit. The Division included a specific section regarding water quality standards monitoring in the permit.

Stormwater discharges to stream segments subject to the selenium TMDL – The EPA approved a selenium TMDL for the Gunnison River and Tributaries, Uncompahgre River and Tributaries, in February 2011. This TMDL identifies that selenium contributions to sand and gravel discharges occur when selenium-laden groundwater intercepts sand and gravel pits and is discharged as process water. Therefore, for the 12 segments subject to the TMDL identified above and for this permit term, the Division will not require permittees to sample stormwater-only discharges for selenium, for such discharges from the facility through outfalls not associated with the mining pit (e.g., through sheet flow, diverted stormwater, detained stormwater, etc.).

b) **Existing** Discharge to Impaired Waters **without** an EPA Approved or Established TMDL.

The Division will implement a new review process for existing discharges to impaired waters without an approved TMDL.

Where an operator indicates on its application that the discharge is to an impaired waters where a TMDL has not yet been established, the Division will determine whether a pollutant has been identified as a constituent of concern in an impairment listing, and if this constituent it is a concern for the proposed discharge covered by the permit. If so, the Division may include water quality standards monitoring to provide information to support development of the TMDL and to determine if the discharge, once a TMDL is issued, will be controlled as necessary to be consistent with the assumptions and requirements of the TMDL through compliance with the other terms and conditions of this permit.

The Division utilizes this process for new discharges to impaired waters, and intends to extend this process to existing discharges to impaired waters in this category under this renewal permit. The Division included a specific section regarding water quality standards monitoring in the permit.

c) **New** Discharge to an Impaired Water.

The Division considered emulating the conditions included in EPA's MSGPs and determined that an alternate approach was more appropriate for this permit and consistent with permitting practices conducted by the Division in Colorado. EPA's MSGPs substantively addresses requirements for new discharges to impaired waters under limitations on coverage and does not include additional water quality-based effluent limits to further control those discharges. In EPA's MSGPs, EPA included language from the permit regulations that prohibit issuance of a permit to new discharges to impaired waters in certain circumstances, as a permit condition under limitations on coverage. The Division has had a longstanding practice of meeting the subject regulatory prohibition through two practices: 1) assigning water quality-based effluent limits at the point of discharge (end of pipe) to new discharges to impaired waters, which does not allow a discharge to cause or contribute to a violation of a water quality standard, and 2) denying permit applications in cases where the Division has determined (and the applicant has been unable to substantiate otherwise) that the discharge without additional treatment or controls, would not be controlled as necessary to meet to meet permit terms and conditions, specifically water quality-based effluent limits.

The Division intends to continue that process with this renewal permit, and has included a narrative water quality-based effluent limitation in the permit, which will be included in permit certifications authorizing new discharges to impaired waters, including naming the relevant water quality standards. The Division determined that it was appropriate to include a narrative water quality-based effluent limitation in the permit as an additional protection to ensure compliance with water quality standards and make it clear to the permittee that water quality standards must be met at the point of discharge (end of pipe).

In addition, where an operator indicates on its application that the discharge is to an impaired water, the division will determine whether a pollutant (including selenium) is of concern for the discharge. If so, the Division may include water quality standards monitoring to provide information to support development of the TMDL and to determine if the discharge, once a TMDL is issued, will be controlled as necessary to be consistent with the assumptions and requirements of the TMDL through compliance with the other terms and conditions of this permit.

iii. *Additional Requirements for Discharges to Waters Designated as Critical Habitat for Threatened and Endangered Species.*

The Division, EPA, and USFWS entered into a Memorandum of Agreement (MOA) "regarding enhanced coordination in implementing Colorado's mixing zone rule and the Service's August 11, 2003 biological opinion on this matter" in October 2005 (The Mixing MOA). The Mixing MOA evolved from an Endangered Species Act (ESA) Section 7 consultation that was conducted as part of EPA's approval of Colorado's water quality standards mixing zone provisions. In development of the Mixing MOA, the parties were primarily focused on ensuring no more than minor detrimental effects from larger, continuous point source discharges during critical low flow conditions.

Since execution of the Mixing MOA and consistent with options included in the Mixing MOA, the Division's has issued permits for larger, continuous discharges that have required the discharges to meet water quality standards at the point of discharge (end of pipe) based on critical low flow conditions. The Division has also required a large continuous discharge to occur from a diffuser to ensure instantaneous

mixing. The Mixing MOA also includes an option for passive mixing in situations where the permittee can demonstrate that such mixing will be protective of the listed species.

The Division has determined that additional information is needed to determine whether compliance with the other conditions of this permit will control the discharges as necessary to eliminate or minimize the potential for no more than minor detrimental effects to listed species in regards to receiving water mixing. The Division has included a provision in the permit that requires water quality-based monitoring for discharges to waters designated as critical habitat for threatened and endangered species. The Division has also included a provision that allows additional terms and conditions to be included in the certification, and the types of additional terms and conditions the Division anticipates could be appropriate includes, but is not limited to studies to determine whether instantaneous mixing occurs due to the location of the discharge and flow in the receiving water at the time of discharge, and studies to determine whether passive mixing is protective of listed species.

iv. *Additional Requirements for New or Increased Discharges to Reviewable Waters*

Consistent with EPA's MSGPs and general permit COR900000, the Division expects that compliance with the other conditions of the permit will control discharges as necessary to comply with the applicable antidegradation requirements. However, the Division included a provision in the permit that allows additional terms and conditions to be included in the certification as necessary to comply with antidegradation requirements. Types of information that may become available warranting site-specific conditions includes but is not limited to information on new or increased discharges, including information provided consistent with Part I.I and Part II (Change in Discharge) of the renewal permit.

3. **General Monitoring Requirements – Stormwater Only**

The Division consolidated and clarified stormwater monitoring requirements for the permittee in this section of the renewal permit. Applicable monitoring requirements in the renewal permit apply to each outfall authorized by the permit, except as otherwise exempt from monitoring as a "substantially identical outfall." Outfalls are locations where stormwater exits the facility property, including pipes, ditches, swales, sheet flow and other structures that transport stormwater (EPA 832-B-09-003 (Industrial Stormwater Monitoring and Sampling Guide – March 2009 [Final Draft]), or where the discharge enters a surface water within the facility permit boundary.

To be considered substantially identical, outfalls must have generally similar industrial activities, control measures, and exposed materials that may significantly contribute pollutants to stormwater. When a permittee believes its facility has two or more outfalls that qualify as substantially identical, the permittee may monitor one of these outfalls and report that the quantitative data also apply to the other substantially identical outfalls. The Division encourages permittees to use the "substantially identical outfall' provision in the permit as it can significantly reduce the monitoring recordkeeping and reporting burden.

In addition to the monitoring exception included the draft permit (i.e., Monitoring Exceptions for Inactive and Unstaffed Sites), the final permit contains an additional monitoring exception (Monitoring Exceptions for Completed and Finally Stabilized Areas) for mine sites, or areas of the mine site, where the pollutant potential and potential for control measure failure is significantly reduced. Please see the Division Response to Public Comments for a discussion of these changes.

4. **Specific Monitoring Requirements – Stormwater Only**

The Division added a new section that addresses requirements for Visual Monitoring and Water Quality Standards monitoring requirements, as applicable to the facility. Consistent with EPA's MSGPs and COR900000, the Division added the requirement for the permittee to conduct quarterly visual examinations of stormwater discharges for the presence of obvious indicators of stormwater pollution. These assessments of stormwater discharges are an inexpensive and valuable part of the stormwater management and planning process. Permittee responsibilities with respect to documentation of results and corrective actions are provided.

The final permit authorizes stormwater discharges from asphalt batch plants (SIC code 2951) and concrete batch plants (SIC code 3273). Therefore, the division also added the associated benchmark sampling requirements for these industrial activities, consistent with CDPS general permit COR900000, and described below.

a. Stormwater benchmark sampling

Sand and gravel industrial activities

The renewal permit does not include benchmark sampling requirements for stormwater discharges from sand and gravel facilities (SIC code major group 14 activities). This is different from the Division's approach in the COR900000 general permit (Stormwater Discharges Associated with Non-Extractive Industrial Activity), which was to adopt the benchmark parameter and concentrations required in EPA's MSGPs – for sand and gravel facilities, EPA's benchmark parameters are Nitrate plus Nitrite Nitrogen and Total Suspended Solids (TSS).

The Division deviated from the benchmark approach for this renewal permit for several reasons. First, because this permit addresses only one sector, and the sector requires monitoring and reporting for just two benchmarks, the Division had more time to evaluate the basis for the benchmarks, and weigh the pros and cons of adopting the benchmarks versus determining an equivalent alternative to the benchmark approach. Secondly, as provided in the 1995 Federal Register (Federal Register / Vol. 60, No. 189 / Friday, September 29, 1995), the benchmarks for this sector are Nitrate plus Nitrite Nitrogen and TSS, which are based on stormwater discharge monitoring data reported to EPA by the Sand and Gravel sector.

The benchmark concentration for Nitrate plus Nitrite Nitrogen is 0.68 mg/l, and is based on data from the National Urban Runoff Program. The Division was concerned that since the source of the nitrogen is likely fertilizer used in reclamation efforts, that permittees could find themselves performing corrective action for exceeding the benchmark value for a pollutant that may not be controlled with conventional control measures for this sector. Further, the permit requires that permittees apply fertilizer in accordance with the approved labeling, and the narrative WQBEL is applicable to all discharges from Sand and Gravel facilities, including those that use fertilizer. Therefore, the Division determined that it would not apply Nitrate plus Nitrite Nitrogen benchmark sampling for discharges from these facilities in the renewal permit.

The Division considered retaining the TSS benchmark sampling and reporting requirements and associated corrective action in the renewal permit; and looked at the cost and benefit of benchmark monitoring, and sampling and reporting for just one parameter, particularly one for which specific technology-based effluent limitations are addressed in the permit. The Division further considered that the Division of Reclamation, Mining and Safety provides some oversight of such facilities with respect to erosion and sediment control. In an effort to reduce the burden of sampling/reporting for one parameter, and because the Division determined that compliance with the technology-based effluent limitations (PBELs) and other terms and conditions of this permit (such as control measure requirements, visual monitoring, inspections, and documentation requirements) will adequately control stormwater discharges for TSS, the Division decided to not require TSS benchmark sampling for discharges from these facilities in the renewal permit.

Asphalt batch plant and concrete batch plant industrial activities

Because the final permit authorizes stormwater discharges from asphalt and concrete batch plants, the division included applicable benchmark monitoring requirements for these activities.

- Benchmark Monitoring: This renewal permit contains the requirement to conduct benchmark monitoring as an indicator of the performance of the measures undertaken to meet the stormwater effluent limitations contained in the permit. This approach (including specific benchmark parameters and concentrations) is consistent with the benchmark monitoring requirement in the CDPS non-extractive industrial stormwater general permit (permit COR900000) for asphalt and concrete batch plants. The benchmark concentrations are not effluent limits. Therefore, an

exceedance of the benchmark four-quarter average is not a violation of the permit, provided that no separate water quality exceedance resulted from the associated stormwater discharges.

- Benchmark Monitoring Schedule: The renewal permit requires that the permittee conduct benchmark monitoring quarterly for the first four (4) full quarters of permit coverage.

- Benchmark Monitoring Actions: Data not exceeding benchmarks: Benchmark monitoring frequency can be reduced if the permittee can demonstrate monitoring values below the benchmarks concentrations. If, after collecting 4 benchmark samples, the average of the monitoring values for any parameter does not exceed the benchmark, the permittee may submit a request to the division to reduce benchmark monitoring frequency to once-per-year, and rotate through the quarterly monitoring periods such that eight (8) samples are collected every five years. This monitoring framework allows samples to capture seasonal variations in stormwater discharges, yet relieves the permittee from quarterly sampling for the entire permit term, unless the benchmarks are exceeded (see below).

- Data exceeding benchmarks: The renewal permit specifies Corrective Actions (required permittee actions, documentation and timelines) when the averaged monitoring values for any parameter exceeds the benchmark. After corrective action is taken, the permittee is required to continue quarterly monitoring for 4 additional quarters, and calculate average monitoring values. If the data from the additional monitoring does not exceed the benchmarks, permittees may reduce benchmark monitoring frequency to once-per-year as previously described. If this data from the additional monitoring exceeds the benchmarks, the permittees must again perform Corrective Actions and continue quarterly sampling. This monitoring framework requires continued quarterly sampling only for those facilities that continue to exceed benchmarks in stormwater samples.

5. **Inspections**

The Division modified the self-inspection requirements in the renewal permit. Most significant among the changes are inspection frequency (i.e., quarterly inspections); inspection scope (i.e., one inspection must be conducted during a run-off event); and corrective action requirements. This permit specifically addresses an increased inspection frequency (6 per year) for inactive and unstaffed facilities that do not meet the condition of no exposure, as such facilities continue to be sources of pollutants for stormwater runoff.

The Division made changes to this section of the permit largely based on its observations during compliance inspections of permitted sand and gravel facilities. Such observations include non-compliant field conditions the permittee did not identify and correct. Unlike the public notice version of general permit COR900000, this permit requires quarterly not monthly inspections, although in some instances, more frequent inspection (e.g., monthly) may be appropriate for areas of the facility with significant activities and materials exposed to stormwater.

The Division believes that the requirement for more frequent facility inspections (i.e., quarterly inspections) and documented corrective actions is a useful means for permittees to evaluate the effectiveness of implemented control measures, and correct any deficiencies. The Division also added the requirement to conduct one of the quarterly inspections during a run-off event, consistent with general permit COR900000. The Division determined that the run-off event inspection is a particularly useful tool for assessing control measure performance, and has received anecdotal information from permittees/stakeholders authorized under general permit COR900000 substantiating this determination.

As in general permit COR900000, this permit allows an exception to the quarterly inspection frequency for inactive and unstaffed facilities, but only if a condition of no exposure is first established at the facility and documented in the facility SWMP. If this is the case, such facilities are required to conduct two facility inspections annually, in the spring and fall. This twice yearly inspection frequency is intended to ensure that

there are no industrial materials or activities exposed to stormwater, i.e., to maintain the condition of no exposure. Facilities that are both inactive and unstaffed, when the facility no longer has industrial activities or materials exposed to stormwater, could alternatively submit a No Exposure Certification permitting under 5 CCR 1002-61.3(2)(h), terminating permit coverage. However, the Division realizes that some facilities plan to recommence industrial activity in the future and therefore may wish to keep active permit coverage.

The permit also includes an increased frequency requirement (6 per year) for those facilities that are inactive and unstaffed, but that cannot establish a condition of no exposure. The Division recognizes that some facilities, such as those meeting the conditions of "temporary cessation" in accordance with DRMS requirements, continue to be sources of pollutants as these facilities are not reclaimed, and may not be able to qualify for a condition of no exposure. Because the discharge of pollutants does not cease when pollutants sources at such facilities remain exposed to stormwater, oversight of facility conditions by the permittee is necessary.

The increased inspection frequency provides an alternative approach to requiring that permittees conduct quarterly visual monitoring for such facilities, as in general permit COR900000. The Division recognizes the burden associated with obtaining visual samples of stormwater at remote facilities that are not staffed, and developed the increased inspection frequency option accordingly. This is the Division's best effort to balance having requirements adequate to address the pollutant source, while reducing the burden to the extent possible since the facilities are not staffed to support active mining operations.

In response to comments received during the public notice period, the division added an additional exception to the inspection requirements in the final permit, specifically for the runoff event inspection at Completed and Finally Stabilized Areas (see response to Comment ID COG50-5.11).

6. **Corrective Actions**

This new section identifies permittee responsibilities with respect to resolving specific facility conditions. The corrective action process is critical to fixing conditions occurring during the permit term that are indicative of permit violations. Conditions fall into two categories: those the permittee must eliminate, and those that require the permittee to review and modify control measures. Permittee responsibilities with respect to corrective action reports and deadlines, control measure modification and substantially identical outfalls are addressed. In the final permit, the 24-hour and 5-day reporting requirements are condensed into one 5-day reporting requirement.

7. **SWMP requirements**

This permit locates all technology-based effluent limitations (i.e., practice-based effluent limitations and federal ELGs), and water-quality based effluent limitations in sections separate from the requirement to develop and implement a SWMP.

As such, the requirement to prepare a SWMP and the documentation requirements set forth in the SWMP are not effluent limitations themselves, but terms and conditions of the permit, because the permittee is documenting information on how it intends to comply with the effluent limitations of the permit. This difference allows the permittee to modify, at any time and as required by the terms and conditions of the permit, the control measures used to meet these effluent limitations. The Fact Sheets for EPA's MSGPs provides significant discussion regarding the effluent limitation vs. the requirement to develop a SWMP, as required by this permit.

The final permit allows **180 days** from the certification effective date, for an existing permittee to modify the SWMP to meet the final permit requirement. Please see the Division Response to Public Comments for a discussion of this change.

a. General SWMP Requirements

i. SWMP requirement: The Division added the requirement that the permittee must modify the SWMP to reflect current site conditions. The Division expects that the permittee use the SWMP as a tool to plan and implement stormwater management at the facility. The requirement that permittees update the facility SWMPs to reflect current site condition formalizes this expectation.

ii. Signatory Requirements: The Division added the requirement that the permittee must sign and certify all SWMPs, which applies to the original SWMP prepared for the facility, and each time the permittee modifies a SWMP. This requirement ensures that the individual or a position with responsibility for the overall operation of the regulated facility or activity, or a duly authorized representative of that person consistent with 5 CCR 1002-61.4(1)(f), is aware of and approves changes to the SWMP.

iii. Permit Retention: The Division added the requirement that the permittee must maintain a copy of this renewal permit and the permit certification issued to the permittee with the SWMP. The Division determined that it is appropriate to require the permittee to retain a copy of this permit and the permit certification with the SWMP to allow the facility's personnel ready access to both. The Division notes that an electronic copy easily available to facility personnel is also acceptable.

b. Specific SWMP Requirements

The Division modified the Specific SWMP Requirements to require that permittees maintain additional documentation with the SWMP. These documentation requirements include:

i. Facility Map. The Division added a requirement to the renewal permit that requires permittees to identify the locations and sources of run-on to the facility from adjacent property that contains significant quantities of pollutants.

ii. Facility Inventory and Assessment of Pollutant Sources. The Division added the requirement to maintain, and update as data is available, an assessment of potential pollutant sources that describes the potential of a pollutant to be present in stormwater discharges for each facility activity, equipment and material identified by the permittee.

iii. Additional Control Measure Requirements. The Division added the requirement to document, and maintain with the SWMP, the schedules, procedures, and evaluation results for the following subset of practice-based effluent limitations.

- Good Housekeeping;
- Maintenance;
- Spill Prevention and Response Procedures;
- Employee Training; and,
- Non-Stormwater Discharges.

The stormwater provisions in existing permits COR340000 and COG500000 require such procedures and practices – this permit additionally requires that the permittee document these procedures and practices in the SWMP. Documentation may be electronic as long as all other requirements of the permit are met.

iv. Inspection Procedures and Documentation. The Division added the requirement to document, and maintain with the SWMP, inspection procedures and other documentation related to inspections.

v. Monitoring Procedures and Documentation. The Division added the requirement to document, and maintain with the SWMP, monitoring procedures and other documentation related to monitoring.

8. **Reporting and Recordkeeping**

Permittees required to sample stormwater, other than visual monitoring, must summarize monitoring results for each calendar quarter and submit the results to the division on a quarterly basis (by the 28th day of the following month).

These changes are consistent with the existing reporting convention for monitoring results in Division permits. The Division enters all industrial stormwater facility data into EPA's database of record, which is called the "Integrated Compliance Information System" (ICIS), and is a secure system for National Pollutant Discharge Elimination System (NPDES) that is only available to EPA and state users. The public can access information in ICIS by using the "Enforcement and Compliance History Online" (ECHO), or Envirofacts.

The final permit includes requirements regarding EPA's Net-DMR submittal, and dates when permittees must start reporting data electronically. Prior to December 21, 2016, the permittee may elect to electronically submit DMRs instead of mailing paper DMRs by using the EPA's Net-DMR service. Starting on December 21, 2016, the permittee must electronically report DMRs by using the EPA's Net-DMR service unless a waiver is granted in compliance with 40 CFR 127.

To ensure that permittees know how to report information on the DMR form, this permit contains data reporting conventions, to include reporting "No Discharge" on the DMR if no discharge occurs within the reporting period; "General Permit Exemption" for each parameter for the period the site meets the monitoring exception.

The Division modified the required content of the Annual Report. Specifically, only a summary of inspection dates need to be reported; however, all correct action documentation (including that for inspections) and the status of any outstanding corrective action(s) must be submitted with the annual report. As such, the annual reporting requirements are less than that required by the previous permits, unless the facility has corrective actions to document.

VI. DISCUSSION OF PROCESS WATER EFFLUENT LIMITATIONS

A. Regulatory Basis for Limitations

1. **Technology Based Limitations**

a. Federal Effluent Limitation Guidelines – The federal guidelines that apply to discharges from sand and gravel facilities are found under 40 CFR Part 436 (Mineral Mining And Processing Point Source Category). These limitations will typically apply, unless the Division applies a more stringent limitation or an alternate limitation (as is the case with pH, as discussed in the Parameter Evaluation section of the fact sheet).

b. Regulation 62: Regulations for Effluent Limitations – Regulation 62 includes effluent limitations that apply to all discharges of wastewater to State waters. This regulation is applicable to the discharges from sand and gravel facilities certified under the COG500000 permit, and is the basis for the oil and grease and total suspended solids (TSS) effluent limitations where federal Effluent Limitation Guidelines do not apply to the discharge.

2. **Numeric Water Quality Standards**

For sand and gravel facilities, applicable water quality standards exist for pH, metals, and organic parameters, and may be applied as daily maximum (acute), 30-day average (chronic) limits, or two-year rolling averages. Most acute and chronic water quality standards will apply at the point of discharge (end-of-pipe), with case-by-case exceptions for select parameters, which are detailed below.

While effluent limitations for metals and other parameters are not automatically included in certifications under this general permit, they may be added on a case-by-case basis based on discharge- or receiving water-specific considerations.

3. **Narrative Water Quality Standards**

Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.

a. Agricultural Use Protection (SAR, EC, and TDS) – Section 31.13(2) of the Basic Standards and Methodologies for Surface Waters (Regulation No. 31) also includes specific narrative provisions for the protection of agriculture as follows;

> *Agriculture. These surface waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock*.

For the protection of irrigated crops, the Division initiated a workgroup in 2007 to address concerns about the impacts of industrial discharges on the quality of downstream water and its suitability for use in irrigating crops. As a result of the workgroup, the Division determined that additional discharge controls were necessary in certain situations to protect the beneficial uses of downstream crop irrigation. This culminated in Water Quality Policy (WQP) #24, entitled *Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops* (hereafter the Ag Policy), March 10, 2008.

The evaluation of the suitability (i.e., quality) of irrigation water is complex and involves interactions of plant tolerances, soil types, and agricultural management practices. Irrigation water has two properties – salinity and sodicity – that can have concurrent impacts on the irrigated crop beneficial use. The Division has thus determined that two parameters, specifically electrical conductivity (EC) and sodium absorption ratio (SAR), are the best parameters to regulate in discharge permits to control levels of salts to minimize both the loss of irrigated crop yield and the sodium hazard.

Electrical Conductivity (EC or Specific Conductivity): Crops have varying sensitivity to electrical conductivity. Studies have established the maximum conductivity in the water that will result in a 'no reduction' of crop yield. Thus, an EC value based on a 'no reduction' of crop yield is implemented in permits as the maximum conductivity based on the most sensitive crop usually grown in the area.

Common crop *EC* thresholds reproduced from the Ag Policy are summarized in the table below. Note that this is not an exhaustive list and *EC* values for additional crops are listed in tables in appendixes to the Ag Policy.

Maximum EC_w That Will Not Reduce The 100% Yield of Selected Irrigated Crops	
Common Colorado Crops	***Irrigation Water Electrical Conductivity (EC_w)***
Beans	0.7
Onion	0.8

Maximum EC_w That Will Not Reduce The 100% Yield of Selected Irrigated Crops	
Common Colorado Crops	***Irrigation Water Electrical Conductivity (EC_w)***
Corn (grain)	1.1
Potato	1.1
Peaches	1.7
Corn (silage)	1.2
Alfalfa	1.3
Orchard grass	1.5
Grapes	1.5
Wheat	4.0
Sugarbeet	4.7
Barley	5.3

The permit writer will determine if EC must be limited and/or monitored in the discharge to protect downstream crop irrigation. ***For new discharges, this may include an EC limitation in the permit, if warranted. For existing discharges, a 'report' only requirement is anticipated during this permit term to characterize EC in discharges from this industry.***

Sodium Adsorption Ratio (SAR): This value is a representation of the relative proportion of sodium cations to calcium and magnesium cations (also known as the "sodium hazard"). The equation for SAR follows:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{++} + Mg^{++}}{2}}}$$

The SAR standard used to establish a SAR permit limit, is calculated using the SAR/EC equation of SAR = (7.1* EC)-2.48), reproduced herein from the Ag Policy. A permit limitation for SAR is based on this calculation using an EC value from the established crop grown in the area. For example,

CORN GRAIN IRRIGATED CROP	
EC for Corn (grain) = 1.1	***SAR = (7.1 * 1.1) - 2.48 = 5.3***

Note that to retain a 'no reduction in infiltration' per the Ag policy, SAR permit limitations are capped at 9. Please see the Ag policy for a full discussion of EC and SAR for irrigated crops.

Since sand and gravel process water discharges covered under this permit are typically from shallow mining operations (e.g. alluvial pit dewatering), or from processing related to materials extracted from shallow deposits (crushing, sorting, screening, etc.), SAR values in the soil profile can be used to estimate the concentrations of SAR in the effluent. The Division reviewed statewide NRCS SSURGO Soils profiles in areas where the majority of process water discharges occur. The result of this analysis indicates that, for the vast majority of sites, there is no reasonable potential for SAR to cause or contribute to an exceedance of the standard. ***Thus, monitoring for SAR will not typically be required***. Note however, that for facilities located in high SAR soil locations, or facilities where SAR is expected in concentrations that may cause or contribute to an exceedance of the standard, a limitation or reporting for SAR may be implemented on a case-by-case basis. An individual permit may be requested for detailed mixing zone (dilution) considerations, if warranted.

Total Dissolved Solids (TDS) - The Division's practice has been to include a TDS limitation of 3,500 mg/l where discharges are to surface waters that are used for livestock (range cattle) watering. This practice is based on EPA's "Blue Book" (Water Quality Criteria 1972 ("Blue Book"). U.S. Environmental Protection Agency. Wash., D.C.: U.S. Government Printing Office, #R3-73-003, 3/73. The "Blue Book" was developed by a Committee on Water Quality Criteria formed through the National Academy of Sciences. The Colorado State University (CSU) Cooperative Extension also uses the "Blue Book" values as recommendations for livestock watering (Livestock Drinking Water Quality, CSU Cooperative Extension, October 1993, Reviewed March 1999).

b. Whole Effluent Toxicity - The Division has established the use of Whole Effluent Toxicity (WET) testing as a method for identifying and controlling toxic discharges from wastewater treatment facilities. WET testing is used as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Regulation 31, Section 31.11 (1).

The requirements for WET testing are implemented in accordance with Division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010).

4. **Water Quality Regulations, Policies, and Guidance Documents**

a. Antidegradation – As required by Section 31.8 of The Basic Standards and Methodologies for Surface Water, an antidegradation (AD) review is required for discharges to "reviewable waters", except in cases where the regulated activity will result in only temporary or short term changes in water quality, or where the ratio of the low flow to the facility flow is 100:1 or more. Discharges permitted under this general permit are not normally temporary or short-term, thus, these discharges are not exempted from an AD review. Based on the information and data in the application, the permit writer will assess the ratio of the chronic low flow of the receiving stream to the facility design flow to determine if antidegradation applies.

The AD review is applicable only to water-quality based effluent limitations, not technology-based effluent limitations. For discharges eligible under this general permit, an antidegradation (AD) limit will be calculated as 15% of the Water Quality Standard, and the resulting effluent limitation will be identified as a site-specific limitation in the certification.

The permittee would then have the choice of this AD limit, or of a non-impact limitation (NIL). The NIL is either the limitation contained as of September 2000, or may be determined by the use of an implicit limitation if a previous limit did not exist. The implicit limit is determined as the maximum effluent concentration in the years prior to September 2000 (later data may be substituted on a case-by-case basis if data is unavailable from this time period). Alternately, if effluent data are not available, the division will include monitoring requirements in the permit so that data can be collected in order to make such a determination of an implicit limit. An individual permit will be required where the permittee requests consideration of dilution and ambient water quality.

In addition, the permittee may elect to perform an alternatives analysis. As this may be subject to public notice requirements, an individual permit will be required. See Regulation 31.8(3)(d) and the Division's Antidegradation Guidance document for more information regarding an alternatives analysis.

AD limitations will not be calculated for facilities discharging to segments that are impaired for a pollutant of concern. For these facilities, the water quality standard will be applied, as there is no new or increased impact to the assimilative capacity of the previously impaired stream segment.

b. Discharges to Threatened and Endangered (T&E) Species Designated Waters – Discharges to T&E waters are subject to the Memorandum of Agreement between the Division and the U.S. Fish and Wildlife Service. In summary, a discharge to a T&E water must achieve one of three options: 1) The permit contains end of pipe limitations based on the water quality standards; 2) the permittee installs a diffuser, and is then granted a portion of the assimilative capacity of the receiving stream; or 3) the discharge is relocated to a segment that is not designated as T&E habitat.

   For facilities discharging to T&E species designated water, all WQBELs must be met at the point of discharge (end-of-pipe) and therefore, the first option is met. End-of-pipe limitations will satisfy the MOA, and no further consideration is needed.

c. Antibacksliding – As the receiving waters are either designated Use-Protected, or the Division has performed an antidegradation evaluation in accordance with the Antidegradation Guidance, the antibacksliding requirements in Regulation 61.10 have been met.

d. Implementation of Total Maximum Daily Loads (TMDLs) – When reissuing the renewal certifications and for new permit applications under this revised general permit, the Division will assess whether or not any permitted facility discharges to segments for which a TMDL has been completed and approved. As required under the Clean Water Act Section 303(d), TMDLs are submitted, through the normal public notification process, to EPA Region VIII for their review and approval.

   At the present time, at least twelve sand and gravel facilities in the Gunnison and Uncompahgre Basins with effective permit certifications are subject to a waste load allocation (WLA) in the February 2011 selenium TMDL for the Gunnison River and Tributaries, Uncompahgre River and Tributaries. The Division will establish effluent limitations, consistent with the requirements and assumptions of the TMDL, and as consistent with the Reasonable Potential Analysis described in Part VI.A.4.i, below. Selenium limitations will be applied as necessary in the permit certifications issued to facilities assigned WLAs in the TMDL.

   As part of the renewal, the Division included a provision in the general permit that authorizes including additional effluent limits and other terms and conditions in a certification for discharges to segments for which a TMDL has been completed. The Division will apply a limitation in the certifications consistent with the assumptions and requirements of the TMDL.

e. Determination of Discharges to 303(d) Listed Waters— When reissuing the renewal certifications and for new permit applications under this revised general permit, the Division will assess whether or not any permitted facility discharges to segments, or may effect a downstream portion of a segment, on the 303(d) list of impaired waters. The Division has included a provision in the general permit that authorizes the inclusion of additional effluent limits and other terms and conditions in a certification for discharges to segments that are on the 303(d) list of impaired waters. The determination of whether compliance with numeric effluent limitations is required will be made on a case-by-case basis.

f. Colorado Mixing Zone Regulations – With the exception of facilities discharging to segments assigned TMDLs, the mixing zone regulations do not apply to discharges covered under this general permit, as nearly all effluent limitations are applicable at the point of discharge (end of pipe). The Division is not considering mixing zones for this general permit due to the time and resources required to conduct a thorough analysis of the receiving stream and associated assimilative capacity.

g. Total Phosphorus – If the discharge from a facility, certified under this permit, ultimately impacts a water body subject to a Phosphorus Control Regulation, such as WQCC Regulations 71 – 74, restrictions on the amount of total phosphorus discharged may be placed in the certification under this general permit. These control regulations may impose total phosphorus concentration limitations. No

phosphorus data have been submitted from these facilities in the previous permit term. Reporting requirements and/or limitations will be implemented for facilities discharging to the basins specified by these regulations.

h. Salinity Regulations – In compliance with the Colorado River Salinity Standards and the Colorado Discharge Permit System Regulations (Regulation 39), the permittee shall monitor for total dissolved solids on a quarterly basis when discharging to the Colorado River basin. Data submitted during the previous permit term did not include loading calculations, and also displayed a large range of concentrations both between sites and within sites over time, rendering it difficult to determine compliance with the salinity standards. Therefore, reporting for both concentration and load (lbs/day) will be required in the permit certification.

i. Reasonable Potential Analysis – Regulation 61, Section 61.8(2)(b)(i)(A) requires that permit limitations be placed upon any discharged pollutant that causes or contributes to, or that has the reasonable potential (RP) to cause or contribute to, an exceedance of water quality standards. The Division's RP analysis is based on the Division's procedural guidance Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, dated December 2013. This guidance document utilizes both quantitative and qualitative approaches to establish RP depending on the amount of available data.

A qualitative determination of RP may be made where ancillary and/or additional treatment technologies are employed to reduce the concentrations of certain pollutants. Because it may be anticipated that the limits for a parameter could not be met without treatment, and the treatment is not coincidental to the movement of water through the facility, limits may be included to assure that treatment is maintained. This is the case for pH, selenium and other metals, and organic compounds in discharges from sand and gravel facilities.

A qualitative RP determination may also be made where a state or federal ELG exists for a parameter. This is the case for iron and fluoride (40 CFR Part 436-Mineral Mining And Processing Point Source Category).

To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with Division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the Division's guidance prescribes the use of best professional judgment.

For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established.

Where there is no RP, no concentration based effluent limit is included. However, the division has prescribed ongoing monitoring to inform future RP analyses and TMDL implementation.

j. Intake Credits – The Division included a discussion of intake credits in this fact sheet in response to questions and written input received during the pre-public notice stakeholder process. In response comments received on the draft permit, the Division took a second look at the potential applicability of intake credits under the general permit. In doing so, the Division re-reviewed all available EPA guidance, including the EPA Region 8 memo on Intake Credits and the Region 5 Great Lakes System (GLS) rule which both discuss the application of intake credits.

In general terms, an intake credit refers to the extent that the presence of a pollutant in intake waters should be considered when conducting a reasonable potential analysis and in the establishment of effluent limitations. Allowances for intake credits under the Clean Water Act were originally designed to apply in the context of cooling water intake structures or similar water uses where water from a surface water diversion was not chemically modified before it was discharged to the same stream. Intake credits may be available for other industrial processes, but are only allowed under very specific circumstances. Regulation 61 prohibits the Division from issuing intake credits if issuance would be inconsistent with federal law (Regulation 61.8(2)(d)(i)).

As a preliminary matter, the Division concludes that intake credits incorporated into the general permit on an industry-wide basis are not appropriate under state or federal law. This position is consistent with numerous court decisions that have held that the application of intake credits can only be analyzed in the context of a particular factual setting. *See American Iron & Steel Inst. v. EPA*,115 F.3d 979, 999 (D.C. Cir.1997), *citing NRDC v. EPA*, 859 F.2d 156, 204-205 (D.C. Cir. 1988); *Diamond Shamrock Corp. v. Costle*, 580 F.2d 670, 674 (D.C. Cir. 1978).

Intake credit availability differs based on the effluent limitation in the permit. Intake credit rules vary for technology-based effluent limits ("TBELs"), water quality based effluent limits ("WQBELs"), and WLAs assigned under a TMDL. The draft sand and gravel general permit contains TBELs, WQBELs, and WLA requirements. Any intake credits incorporated into the draft general permit must be consistent with EPA's requirements for TBELs, WQBELs, and WLAs.

Intake Credits for a TBEL - EPA allows intake credits for TBELS if a discharger demonstrates that the intake water is drawn from the same body of water into which the discharge of effluent is made. 40 CFR §122.45(g)(4). The application of intake credits for TBELs is not at issue for this permit.

Intake Credits for a WQBEL - National federal guidelines for intake credits for WQBELs have not been codified. EPA takes different approaches for WQBEL intake credits at a regional level. For many years, the Division relied upon a 1992 EPA Region 8 memo for guidance. EPA also adopted more official intake credit guidance for WQBEL in the Water Quality Guidance for the Great Lakes System (EPA Region V). 60 F.R. 15366. The Great Lakes System approach is not a legal requirement in Colorado since it only applies to EPA Region 7 states. However, the Division reviewed this approach as useful guidance to aid in its determination of whether intake credits could be applied. The Region VIII and Region V approaches are consistent, but the Great Lakes System rule is' much more comprehensive.

Under the 1992 EPA Region 8 memo approach, intake credits are only available if: 1) the industrial activity discharging water in no way modifies the intake water character; 2) the point of diversion is the same waterbody as the point of discharge; and 3) the time of the discharge does not create a water quality standard exceedance that would not occur otherwise.

Under the Great Lakes System approach, EPA developed procedures for considering intake pollutants in determining reasonable potential and for establishing WQBELs. EPA has allowed Great Lakes States to

determine that there is no reasonable potential for the discharge of an identified intake pollutant or pollutant parameter to cause or contribute to an excursion above a narrative or numeric water quality standard where a discharger specific demonstration is made in accordance with Procedure 5 of 40 C.F.R. §132 Appendix F. This demonstration must be made as part of a permit application, and must show that all five of the following conditions are satisfied:

1) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made
2) The facility does not contribute any additional mass of the identified intake pollutant to its wastewater
3) The facility does not alter the identified intake pollutant chemically or physically in a way that would cause adverse impacts to occur that would not occur if the pollutants were left in the stream;
4) The facility does not increase the identified intake pollutant concentration
5) The timing and location of the discharge would not cause adverse water quality impacts to occur that would otherwise not occur if the identified intake pollutant were left in the stream. 40 C.F.R. §132 Appendix F Procedure 5.D.3.

1) Same Body of Water requirement:

In order to be considered the same body of water under Procedure 5, the permitting authority must determine that a pollutant in the intake water would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. This can be demonstrated by showing that 1) the background concentration of the pollutant in the receiving water and the intake and the receiving water are the same; 2) there is a direct hydrologic connection between the intake and discharge points; 3) and the water quality characteristics are similar in the intake and receiving waters. An intake pollutant from groundwater may be considered to be from the same body of water if the permitting authority determines that the pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. Importantly, a pollutant is not from the same body of water if the groundwater contains the pollutant partially or entirely due to human activity, such as industrial, commercial, or municipal operations, disposed actions, or treatment processes (40 C.F.R. §132, Appendix F, Procedure 5 D.2).

The Division concluded that there has not been a sufficient demonstration that all sand and gravel facilities covered under the permit can sufficiently demonstrate the "same body of water" requirements under the Great Lakes System approach. Some commenters have argued that alluvial groundwater flowing into sand and gravel should generally be considered the same "body of water" as a surface water stream, based in part on assumptions of Colorado water rights administration and Water Quality Control Commission standards for alluvial wells. While these arguments have been made in general terms, they do not include site-specific analyses about intake and receiving water quality, hydrologic connection, and discharge characteristics for each covered facility. It is problematic to make general conclusions about the characteristics of the intake and discharge locations of all sand and gravel operations in the State of Colorado in the context of a general permit. Each individual mining operation has unique hydrology, and water that collects in a gravel pit may come from various sources. Making this conclusion on a state-wide basis is also inconsistent with previous decisions in the federal case law cited above.

2) Contribution of Additional Mass of Identified Pollutants:

Under the Great Lakes System approach, EPA also allows states to consider intake pollutants in establishing effluent limits where reasonable potential exists. A permitting authority can establish limits based on a principle of "no net addition" (i.e., the limit would allow the mass and concentration of the pollutant to discharge up to the mass and concentration of the pollutant in the intake water. The

permitting authority may establish effluent limitations allowing the facility to discharge a mass and concentration of the pollutant that are no greater than the mass and concentration of the pollutant identified in the facility's intake water ("no net addition limitations"). This procedure allows the discharge to design and operate its treatment system to only remove the mass and concentration of the pollutant contributed by their operations. This determination can only be made if a permittee can also demonstrate that the intake water is from the "same body of water" as the receiving water.

As stated previously, Division concluded that there has not been a sufficient demonstration that all sand and gravel facilities covered under the permit can sufficiently demonstrate the "same body of water" requirements; therefore the Division cannot issue an intake credit based solely on an analysis of the contribution of pollutant mass. However, looking at this issue independently, the Division also cannot concluded that, that "no reasonable potential" exists if intake credits were granted on an industry-wide basis to all covered facilities. There is not sufficient information about the individual intake and receiving water quality, and the water quality characteristic of the effluent being discharged from covered facilities to conclude that no reasonable potential exists. Furthermore, there is not sufficient information to determine the mass and concentration of intake water bodies and receiving water bodies. Without this information, the Division cannot conclude that all sand and gravel facilities throughout the state do not contribute additional mass of pollutants, are not increasing intake pollutant concentrations, do not alter the intake pollutant in a way that would cause adverse impacts, and are not timing their discharge in a way that would cause adverse water quality impacts.

Intake Credits when a TMDL has been established – As a general rule, intake credits are generally not available for waterbodies where a TMDL has been established. The development of a TMDL process is the preferred mechanism for addressing the equitable division of the loading capacities in non-attainment waters (see 60 FR 15371). Discharge limitations in a WLA apply regardless of background water quality. Any application of intake credits to WLAs would need to occur through the TMDL process rather than a permitting process. Here, a TMDL has already been established on the Gunnison River and Tributaries, Uncompahgre River and Tributaries. The concept of intake credits was raised during the TMDL development process. Intake credits were not applied in the development of selenium TMDLs being implemented in this permit. Intake credits cannot be independently established along these stretches as part of the permitting process. The TMDL specifically identifies sand and gravel operators as a point-source contributor of selenium. (TMDL, p. 57-58). Water treatment at sand and gravel facilities typically consists of retention in settling ponds, and little, if any selenium removal is accomplished. (TMDL, p. 58).

B. Parameter Evaluation

1. **Total Suspended Solids (TSS)** – Limitations for TSS in the renewal permit are based on both the federal ELG (as applicable to discharges from specific mining commodities) and Regulation 62.

   - *Industrial Sand and Graphite Mining*: The federal ELG (40 CFR Part 436) is applied to discharges consistent with Regulation 62.

   - The Regulation 62 TSS limitations are applied to all other process water discharges authorized by the permit, for which a federal ELG for TSS does not exist.

These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

2. **Oil and Grease** – Limitations for Oil and Grease in the renewal permit are based on Regulation 62.

This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

3. **pH** – This parameter is limited by the water quality standards of 6.5-9.0 s.u., as this range is more stringent than other applicable standards. This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

4. **Selenium**

   a. *Discharges to stream segments subject to the selenium TMDL* – The EPA approved a selenium TMDL for the Gunnison River and Tributaries, Uncompahgre River and Tributaries, in February 2011. The TMDL affects non-attainment portions of 12 stream segments in these water sheds. Currently, sand and gravel facilities discharge to 4 segments included in this TMDL as follows;

      Lower Gunnison- COGULG01, COGULG02
      North Fork of the Gunnison- COGUNF03
      Uncompahgre River- COGUUN04b

      The Division will implement a waste load allocation (WLA) in the permit certifications for facilities discharging within the segments listed in the TMDL consistent with the requirements and assumptions of the TMDL. In addition, consistent with Regulation 61.8(2)(i), all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of concentration and mass or concentration and flow. Therefore, for facilities that are subject to a mass-based WLA for selenium, the Division may also implement a concentration-based limitation for selenium in the permit certification, based on a quantitative reasonable potential (RP) analysis as described in Part VI.A.4.i.

      For existing sand and gravel dischargers, the mass-based WLA listed in the TMDL for each segment is noted as 'WLA Sand and Gravel' or 'WLA' depending on the segment. A separate allocation for each facility was not assigned in the TMDL. Rather, to allow flexibility in implementation, the WLA for all sand and gravel facilities on a given segment is listed collectively, as one allocation (lbs/day). Thus, where more than one sand and gravel discharger is present on a segment, implementation of limitations for specific dischargers may be based on, or adjusted from, the design flow of the facility at the time of the TMDL, and the presence or absence of other sand and gravel dischargers on the segment since the development of the TMDL. For new sand and gravel dischargers, loading allocations may be based on the collective allocation within the TMDL, the 'WLA Reserve,' where applicable, or the water quality standard will be applied end of pipe.

      For all facilities, concentration-based limitations may be based on mixing zone considerations, where consistent with the TMDL. The TMDL notes that in some months certain segments may be in attainment (assimilative capacity is available) of the standard. As a result, the concentration-based limitations in these months may incorporate dilution, where available, using the monthly low flows documented in the TMDL.

   b. *Discharges to 303(d) waters listed for selenium* – Consistent with Division practice, this permit establishes monitoring requirements for these pollutants until such time as the TMDL(s) is complete and waste load allocations have been determined.

      The Division will require sampling and reporting of selenium data for discharges to 303(d) listed waters impaired for selenium. At a minimum, the sampling and reporting will be a "monitor and report" requirement. The Division may determine whether compliance with numeric effluent limitations is also required, on a case-by-case basis.

5. **Site Specific Organics, Inorganics, and Metals** – The Division may make a case-by-case determination as to whether organics, inorganics, and metals are potential pollutants of concern that must be limited and/or monitored to protect the classified uses assigned to the receiving water. The case-by-case determination will be made based on the chemicals used in the treatment process, pollutants of concern for the industrial sector, the potential for characterization of the mine dewatering water to change due to locations of contaminant plumes (such as Leaking Underground Storage Tanks, Corrective Action sites, Voluntary Clean-Up sites, Superfund site, etc.), and data used to characterize the mine water.

   a. *Discharges to 303(d) waters listed for arsenic, iron and manganese*: The Division may require sampling and reporting of iron and manganese data for discharges authorized under this permit, as they have been identified as pollutants that dewatering activities can increase in pollutant concentration and loading due to their presence in the dewatering environment. The Division also considered requiring sampling and reporting of arsenic data for discharges to 303(d) waters listed for arsenic, since arsenic is also present in the dewatering environment, it can be affected by the discharge activity. Due to the uncertainty in the underlying standard and the limitation of 'current conditions' for facilities existing prior to June 2013, the Division decided not to impose this requirement for this permit term.

      The effluent data collected during the course of this permit term will be used to make a new reasonable potential determination at the time of permit renewal in accordance with Clean Water Policy 1, Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential."

      The limitations for organics, inorganics, and metals are based upon the water quality standards contained in Regulation 31 and the basin regulations (Regulations 32-38). Standards for metals in the basin regulations that are shown as Table Value Standards (TVS) must be derived from equations that depend on the receiving stream hardness or species of fish present. These equations can be found in the basin regulations (Regulations 32-38).

      The effluent data collected during the course of this permit term will be used to make a new reasonable potential determination at the time of permit renewal in accordance with Clean Water Policy 1, Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential."

6. **Electrical Conductivity (EC or Specific Conductivity)** - Consistent with the discussion at A.3.a of this section, reporting for this parameter will be included in the permit certification.

7. **Whole Effluent Toxicity (WET) Testing** – The Division anticipates that the majority of discharges from sand and gravel facilities will not require WET testing; however, some discharges covered under this general permit may exhibit whole effluent toxicity based on the potential pollutant concentrations in the discharge (e.g., chemical additive use, or treatment or production processes that add pollutants to the discharge). Therefore, WET monitoring requirements or limitations may be imposed in the permit certification, on a case-by-case basis.

   For most certifications covered by this permit, a mixing zone is not applicable, and the low flow is considered to be zero. Therefore, consistent with the Division WET policy [Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010)], chronic WET testing will generally be applied in the permit certification. The WET dilution series will be specified in the certification, and will be 0% effluent (control), 20%, 40%, 60%, 80%, and 100% (effluent) for facilities for which a mixing zone is not applicable.

However, on a site-specific basis, the Division may apply acute WET testing requirements in the permit certification, consistent with the Division WET policy referenced above, for facilities that demonstrate to the Division that they qualify for acute WET testing.

The permittee should read the WET testing section of Part I.D and Appendix B of the permit carefully, as this information has been updated in accordance with the Division's updated WET policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010). These sections of the permit outline the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should also read the above mentioned policy, which is available on the Permit Section website. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II.A.2. of the permit. Such changes shall be reported to the Division immediately.

C. Parameter Speciation

1. **Total / Total Recoverable Metals (EXCEPT Arsenic)**

For standards based upon the total and total recoverable methods of analysis, the limitations are based upon the same method as the standard.

2. **Dissolved Metals / Potentially Dissolved**

For metals with aquatic life-based dissolved standards, effluent limits and monitoring requirements are typically based upon the potentially dissolved method of analysis, as required under Regulation 31, Basic Standards and Methodologies for Surface Water. Thus, effluent limits and/or monitoring requirements for these metals will be prescribed as the "potentially dissolved" form.

3. **Dissolved Iron and Dissolved Manganese if WS based**

The dissolved iron and chronic manganese standards are drinking water-based standards. Thus, sample measurements for these two parameters must reflect the dissolved fraction of the metals.

4. **Fluoride if WS based**

The fluoride standard is a drinking water-based standard. Therefore, to conservatively protect drinking water uses, sample measurements for this parameter must reflect the total fluoride method.

VII. ADDITIONAL TERMS AND CONDITIONS

A. Monitoring

Effluent Monitoring – Effluent monitoring is required as shown in the general permit document. Refer to the permit certification for locations of monitoring points. Monitoring requirements have been established in accordance with the frequencies and sample types set forth in the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities.

B. Reporting

Discharge Monitoring Report – Facilities authorized under this permit must submit Discharge Monitoring Reports (DMRs). The final permit includes the requirement for electronic submission of DMRs to the division. Prior to December 21, 2016, the permittee may elect to electronically submit DMRs instead of mailing paper DMRs by using the EPA's Net-DMR service. Starting on December 21, 2016, the permittee must electronically report DMRs by using the EPA's Net-DMR service unless a waiver is granted in compliance with 40 CFR 127.

For those facilities subject to a WLA and associated concentration based WQBEL in the permit certification, DMRs shall be submitted on a monthly basis to assure loading calculations are as accurate as possible. DMRs shall be submitted on a quarterly basis for all other facilities. These reports should contain the required summary of the test

results for all parameters and monitoring frequencies identified in the permit certification. See the permit, Part I.F, for details on such submission.

Many facilities statewide are required to submit monthly DMRs, though the practice for the sand and gravel industry has been quarterly submission to reduce the burden to the permittees. For sand and gravel facilities subject to a selenium WLA, the increased DMR burden (monthly) is necessary to incorporate monthly variations in dilution that are included in the TMDL, which may result in monthly effluent limitations.

The Division considered requiring monthly DMR submittal to improve the accuracy of salinity loading for facilities discharging to the Colorado River basin. However, the Division found that more accurate salinity loading information can be obtained by requiring permittees to report quarterly total flow as well as a TDS concentration.

Special Reports – Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II.A. of the permit for reporting requirements. Permittees are no longer required to submit these reports to the US Environmental Protection Agency Region VIII.

C. Spills

Spill requirements apply to materials spilled that result in their presence in the discharge authorized under this permit. Spills that may cause pollution of state waters that are not discharged through an outfall authorized under this general permit are not within the scope of this general permit and are required to be reported in accordance with the Colorado Water Quality Control Act 25-8-601(2), since the Division views these actions as not authorized under the scope of a discharge permit. Additional information regarding reporting of unauthorized spills is contained in the Divisions Guidance for Reporting Spills.

D. Signatory and Certification Requirements

Signatory and certification requirements for reports and submittals are discussed in Part I.F.4 of the permit.

E. Compliance Schedules

Existing dischargers may be granted compliance schedules for any new effluent limitations applicable to the discharge. Some items requiring a compliance schedule may require an individual permit.

F. Economic Reasonableness Evaluation

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the Division to "determine whether or not any or all of the water quality standard based effluent limitations are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-192 and 25-8-104."

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this requirement under 61.11 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

1. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or
2. In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the basin regulations, considered economic reasonableness.

Furthermore, no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the

economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 25-8-102 and 104. If a party that desires coverage under this general permit disagrees with this finding, pursuant to 61.11(b) (ii) of the Colorado Discharge Permit System Regulations, they should submit all pertinent information to the Division during the public notice period.

VIII. PUBLIC NOTICE COMMENTS – See Appendix B for Division Response to Public Comments document.

IX. REFERENCES

A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number COG500000.

B. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 31, 2013.

C. Classifications and Numeric Standards for Arkansas River Basin, Regulation No. 32, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 31, 2013.

D. Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12), Regulation No. 33, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2013.

E. Classifications and Numeric Standards for Upper San Juan River and Dolores River Basins, Regulation No. 34, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2013.

F. Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, Regulation No. 35, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2013.

G. Classifications and Numeric Standards for Rio Grande Basin, Regulation No. 36, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 31, 2013.

H. Classifications and Numeric Standards for Lower Colorado River Basin, Regulation No. 37, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2013.

I. Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin, Regulation No. 38, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2013.

J. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 30, 2012.

K. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective July 30, 2012.

L. Colorado River Salinity Standards, Regulation No. 39, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective August 30, 1997.

M. Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective April 30, 2010.

N. Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2001.

O. Memorandum Re: First Update to (Antidegradation) Guidance Version 1.0, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 23, 2002.

P. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2013.

Q. The Colorado Mixing Zone Implementation Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 2002.

R. Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Domestic and Industrial Wastewater Treatment Facilities, Water Quality Control Division Policy WQP-20, May 1, 2007.

S. Implementing Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (WET) Testing. Colorado Department of Public Health and Environment, Water Quality Control Division Policy Permits-1, September 30, 2010.

T. Code of Federal Regulations, 40 CFR Part 132, Water Quality Guidance for the Great Lakes System, Office of the Federal Register, Government Printing Office, effective July 24, 1975 and as amended.

U. Code of Federal Regulations, 40 CFR Part 443, Paving and Roofing Materials (Tars and Asphalt) Point Source Category, Office of the Federal Register, Government Printing Office, effective July 1, 2015.

V. Code of Federal Regulations 40 CFR Part 436, Mineral Mining And Processing Point Source Category Point Source Category, Office of the Federal Register, Government Printing Office, effective October 16, 1975 and as amended.

W. McKee, Jack and Harold Wolf, Water Quality Criteria ("California Book") Sacramento, State of California Water Resources Control Board, 2nd Ed. 1963

X. Environmental Protection Agency, Office of Wastewater Management, Water Permitting 101. Available at: https://www3.epa.gov/npdes/pubs/101pape.pdf. Last accessed October 10, 2016.

Y. Environmental Protection Agency. Final Water Quality Guidance for the Great Lakes System. 60 Fed. Reg. 15366, March 23, 1995.

Z. Environmental Protection Agency Region VIII. Intake Credits. Memo Ref: 8WM-WQ, March 2, 1992.

APPENDIX A – Description of Standard Industrial Classification (SIC) Code Major Group 14 facilities

Major group 14 includes establishments primarily engaged in mining or quarrying, developing mines, or exploring for nonmetallic minerals, except fuels.

Dimension Stone (SIC code 1411) - Establishments primarily engaged in mining or quarrying dimension stone. Also included are establishments engaged in producing rough blocks and slabs.

Crushed and Broken Limestone (SIC code 1422) - Establishments primarily engaged in mining or quarrying crushed and broken limestone, including related rocks, such as dolomite, cement rock, marl, travertine, and calcareous tufa.

Crushed and Broken Granite (SIC code 1423) - Establishments primarily engaged in mining or quarrying crushed and broken granite, including related rocks, such as gneiss, syenite, and diorite.

Crushed and Broken Stone, Not Elsewhere Classified (SIC code 1429) - Establishments primarily engaged in mining or quarrying crushed and broken stone, not elsewhere classified.

Construction Sand and Gravel (SIC code 1442) - Establishments primarily engaged in operating sand and gravel pits and dredges, and in washing, screening, or otherwise preparing sand and gravel for construction uses.

Industrial Sand (SIC code 1446) - Establishments primarily engaged in operating sand pits and dredges, and in washing, screening, and otherwise preparing sand for uses other than construction, such as glassmaking, molding, and abrasives.

Kaolin and Ball Clay (SIC code 1455) - Establishments primarily engaged in mining, milling, or otherwise preparing kaolin or ball clay, including china clay, paper clay, and slip clay.

Clay, Ceramic, and Refractory Minerals, Not Elsewhere Classified (SIC code 1459) - Establishments primarily engaged in mining, milling, or otherwise preparing clay, ceramic, or refractory minerals, not elsewhere classified.

Potash, Soda, and Borate Minerals (SIC code 1474) - Establishments primarily engaged in mining, milling, or otherwise preparing natural potassium, sodium, or boron compounds.

Phosphate Rock (SIC code 1475) - Establishments primarily engaged in mining, milling, drying, calcining, sintering, or otherwise preparing phosphate rock, including apatite.

Miscellaneous Nonmetallic Minerals, Except Fuels (including Graphite) (SIC code 1499) - Establishments primarily engaged in mining, quarrying, milling, or otherwise preparing nonmetallic minerals, except fuels. This industry includes the shaping of natural abrasive stones at the quarry.

APPENDIX B – See Division Response to Public Comments document for Appendix B.

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division

APPENDIX B

DIVISION RESPONSE TO PUBLIC COMMENTS

CDPS GENERAL PERMIT COG500000

FOR
DISCHARGES FROM SAND AND GRAVEL MINING AND PROCESSING
(AND OTHER NONMETALLIC MINERALS EXCEPT FUEL)

COLORADO DISCHARGE PERMIT SYSTEM

October 13, 2016

This document provides the Water Quality Control Division's (Division) Response to Public Comments for CDPS General Permit COG500000. This permit and the associated Fact Sheet were posted for public notice on April 25, 2014. All comments received by the Division are arranged by applicable permit section, and reflect the renewal permit numbering format. Only those permit sections for which comments were received are addressed in this document.

Note that some of the attachments to a few of the comments were not included in this document due to their size or length. Interested parties may obtain copies of the original comments in their entirety from the division, online through the following link: http://environmentalrecords.colorado.gov/HPRMWebDrawer/Record.

Changes to the permit or Fact Sheet made in response to comments, or as initiated by the Division, are identified by permit section in this document. The Division made several editorial-only (e.g., spelling, grammar, punctuation, format) changes to the permit – these corrections are not further discussed.

TABLE OF CONTENTS

NUMBERING CONVENTION FOR COMMENTS

Commenter	Comment ID
Water Quality Control Division changes	COG50-0.XX
American Gypsum	COG50-1.XX
Colorado Asphalt Pavement Association	COG50-2.XX
Colorado Mining Association	COG50-3.XX
Colorado Stone, Sand & Gravel Association	COG50-4.XX
Colorado Springs Utilities	COG50-5.XX
Elam Construction Inc.	COG50-6.XX
Front Range Aggregates, LLC	COG50-7.XX
Holcim (US) Inc.	COG50-8.XX
Martin Marietta Materials	COG50-9.XX
Rocky Mountain Aggregate	COG50-10.XX
Varra Companies, Inc.	COG50-11.XX
Wright Water Engineers	COG50-12.XX
Loveland Ready Mix Concrete, Inc.	COG50-13.XX

GENERAL COMMENTS

Comment ID: COG50-2.1
Author Name: Thomas M. Peterson
Organization: Colorado Asphalt Pavement Association

Increased effort for compliance: At the Outreach Meeting held on May 23 in Loveland, much time was spent by you and Ms. Rosow in explaining the increased effort that will be needed for monitoring, sampling, testing, documenting, reporting, and submittals to meet the permit requirements plus more stringent requirements to construct and maintain BMP's (Control Measures). The questions we ask are, *"What is the estimated increase in cost per facility to comply with the permit requirements and what is the expected benefit in reduced pollution?"* Can you provide an answer to these very critically important questions?

Division Response
Please note that many of the monitoring, recordkeeping, or BMP requirements identified in the comment existed in the previous permit(s), or are clarifications of the previous permit requirements and division expectations, and are not additional requirements.

For example, monitoring parameters in the final permit remain unchanged from that in the previous permit for technology-based effluent limitations (pH; oil and grease; and TSS), and also for the majority of water quality-based effluent limitations such as TDS; phosphorus; WET; and other pollutants of concern, which can include metals , organics etc. The standardized monitoring frequency in the final permit (2x monthly) is the same as the previous certifications for ~90% of permittees; for some, this standardized frequency is less than previously required.

The SWMP in the previous permits required documentation of pollutant sources and the practices/procedures implemented for their control. With respect to the comment on BMPs, both the previous and the renewal permit contain requirements for selecting and implementing BMPs (or Control Measures) in a manner that appropriately manages the pollutant sources at the facility. In the renewal permit, the division clarified this requirement to ensure permittees understand what their regulatory obligations are with respect to compliance with the permit. Therefore, there are not "more stringent requirements to construct and maintain BMPs (Control Measures)" as indicated in the comment.

<u>Cost Benefit Analysis</u>
The division added a section to the fact sheet that addresses cost benefit analyses for development of permit terms and conditions. Please also see response to Comment ID: COG50-4.8. No changes were made to the fact sheet or permit with respect to monitoring or recordkeeping in response to this comment.

Comment ID: COG50-3.1
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Combining permits: CMA supports the WQCD's decision to combine the stormwater and process water general permits, COG340000 and COG500000, respectively. This should simplify the permitting process for sand and gravel operations, as long as there are clear definitions of process water and stormwater. The complexity of sand and gravel operations often leads to the commingling of process water and stormwater, and there should also be well-defined procedures for determining requirements on these types of waters.

Division Response

The division appreciates CMA's support for combining CDPS permits COR340000 and COG500000 in the renewal permit. The permit and fact sheet clarify, by definition or example, the difference between process water, stormwater, and commingled discharges. The division added clarity to the final fact sheet and permit pertinent to the requirements for each type of discharge.

Comment ID: COG50-3.3
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Overall permit complexity: CMA acknowledges that the Water Quality Control Division has made some changes that will simplify this permit and will assist the dischargers in complying. Overall however, CMA believes that the WQCD can make this permit more streamlined while providing an equal level of environmental protection. First, many of the changes that have been made are a result of two sources: 1) the Federal EPA MSGP and 2) the review of onsite inspections and Discharge Monitoring Reports (DMRs) from the previous permit. First, CMA would like to reiterate comments made on the pre-publication draft of the coal mining general permit that the benefit of a general permit is lost to both the permittee and the State as more and more requirements are added to the permit. Just because the MSGP contains a requirement does not mean that it is appropriate or necessary for Colorado operations.

Second, CMA appreciates the fact that actual DMR data was reviewed to determine where requirements were lacking and where issues may exist. However, CMA does not agree with the WQCD interpretation of those results in all cases. For example, the first analysis is for flow and states that 70% of time, facilities reported "no discharge" conditions over the previous 5-year period. The draft permit then proceeds to impose additional requirements for flow (discussed in subsequent comment). Rather, the fact that the data shows that under normal conditions these operations are not discharging and pose minimal environmental risk, gives the WQCD latitude to *lessen* permit requirements, not increase them.

Last, although CMA feels many of these requirements are overly complicated for large operations, they are even more onerous for small operations. The permit should consider the operation's overall footprint and onsite activities when imposing requirements. Permit writers should be given leeway to exclude requirements where risk is considered minimal. Following are some examples of where the draft requirements are overly stringent and/or complex.

- Permit applicability (construction activity over one acre), [see Comment ID: COG50-2.2]
- Process water requirements: Flow limitations and monitoring, [see Comment ID: COG50-3.5]
- Process water requirements: Selenium and related definitions, [see Comment ID: COG50-3.6]
- Process water requirements: TDS monitoring, [see Comment ID: COG50-3.7]
- Process water requirements: Phosphorus monitoring, [see Comment ID: COG50-3.8]
- Process water requirements: WET testing, [see Comment ID: COG50-3.9]
- Stormwater requirements: Visual sampling, [see Comment ID: COG50-3.10]
- Stormwater requirements: Inspection requirements, [see Comment ID: COG50-3.11]
- Stormwater requirements: WQBELs, [see Comment ID: COG50-3.12]

Division Response

Note: the division's responses to comments in paragraph form above are provided below. The division's responses to the specific examples provided by the commenter (bulleted list) are identified in brackets following each bullet.

General permit requirements

With respect to stormwater discharges, the division agrees with CMA that just because the MSGP contains a requirement does not mean that it is appropriate or necessary for Colorado operations. For example and as stated in the fact sheet, renewal permit COG500000 did not adopt benchmark monitoring of stormwater discharges from SIC code 14 industrial activities as required in the 2008 EPA MSGP, but instead relies on compliance with the technology-based effluent limitations and other terms and conditions of the permit to control stormwater discharges. The division intentionally and thoughtfully deviated from EPA's approach on SIC code 14 benchmarks, and the result was a reduction in the sampling/reporting requirements for the permittee. Other examples of the division deviating from EPA's approach in the 2008 MSGP include not covering construction activities greater than 1 acre for the reasons provided at Comment ID: COG50-2.2, and requiring four inspections per year instead of the five EPA requires in the 2008 EPA MSGP. In cases where the division adopted the approach taken in the MSGP the determination was intentional and thoughtful and is documented in the fact sheet.

Lastly, the division wishes to provide information relevant to the role and benefits of general permits (GPs) and individual permits (IPs) in the CDPS permitting framework. The GP is often a streamlined permitting approach for qualifying facility discharges when compared to the individual permit process for reasons such as: 1) the GP facilitates permit coverage for a large number of facilities; 2) renewal of the GP occurs for all the covered facilities at once as opposed to individually; 3) the GP has a simplified application form; 4) GP certifications are issued more quickly than individual permits; 5) GP conditions are consistent with other similar facilities (i.e., promotes a level playing field); 6) GP requirements are available prior to applying for coverage; and 7) the GP annual fee is generally less than the individual permit fee. For these reasons, obtaining permit coverage under a general permit may be a benefit to a permittee, but coverage under a General Permit is not *required*. The permittee may apply for, and obtain coverage under, an Individual CDPES Permit.

Note that the statutory and regulatory direction for permit terms and conditions, specifically the inclusion of effluent limitations, monitoring, recordkeeping, and reporting, are the same for GPs and for Individual Permits. GPs are a tool for administrative efficiency, but are not a mechanism for avoidance of or a lessening of regulatory requirements. Further, while this general permit includes a number of flexibilities to cover differences in operational and discharge situations, it is not intended to cover every possible scenario within the industry. Therefore, the Division retains the option to require any operation to apply for coverage under an individual permit, and operators may request coverage under an individual permit to accommodate unique site-specific considerations.

Flow requirements at facilities that report "no discharge"

Consistent with Regulation 61.8(2)(i), which requires that "all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of concentration and mass or concentration and *flow* … " (emphasis added) , the division must include flow limitations for all outfalls. Therefore, the division does not have discretion to eliminate flow limitations simply because a facility typically does not discharge. However, a facility that never discharges to surface water, should terminate CDPS permit coverage on that basis.

As in the previous permit, the sample type requirement for flow is "instantaneous or continuous" in the renewal permit, which maintains the option for the permittee to measure flow on an instantaneous basis where power is not available. . The division found that it was necessary to require additional flow discharge reporting, such as total flow, to better characterize intermittent discharges and for TMDL development and implementation, and other loading analyses. Note that for the facilities that continue to report "no discharge" conditions, there is no additional burden.

Large versus small facilities

All discharges to State Waters, regardless of size, are regulated under the Colorado Water Quality Control Act. Discharges to surface water are implemented via *the Colorado Discharge Permit Regulations*, Regulation No. 61. These regulations require that discharges to surface waters are authorized by a permit, and comply with *the Basic Standards for Surface water,* Regulation No. 31, technology-based limitations established in *the Regulations for Effluent Limitations*, Regulation No. 62, and applicable Federal ELGs. The permitting framework implements these regulations regardless of the size of facilities, or the size of the discharge. For stormwater, the requirement to obtain permit coverage for discharges from the mineral industry is based on SIC code, and does not explicitly consider the size or complexity of the mining operation.

Consistent with Regulation 61.9(2), general permit COG500000 covers a category of discharges, where the sources (A) involve the same or substantially similar types of operations; (B) discharge the same types of wastes; (C) *the same effluent limitations or operating conditions*; and (D) *the same or similar monitoring* (emphasis added). Therefore, general permit COG500000 requirements are the same for small and large facilities. Note that in many cases, the more complex the facility (e.g., large size, varied pollutant sources, multiple industrial activities, steep terrain, etc.), the more complicated its stormwater management

becomes; therefore, small and uncomplicated facilities should not experience the same effort to comply with the renewal permit terms and conditions as a larger, more complicated facility.

No changes were made to the permit with respect to these comments.

Comment ID: COG50-4.7
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

Request for studies and data: The industry understands the need to abide by scientifically supported information and would like to see peer reviewed studies and data where applicable.

Division Response

The division is uncertain of the specific nature of the comment, but assumes that the comment is a request for documentation of the pollutants of concern at sand and gravel mining facilities, including batch plant discharges. This information is provided below.

Sand and Gravel
The Development Document for Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Industry Point Source Category (EPA 440/1-76/059b, July 1979) provides the supporting data and rationale for development of the ELGs and standards of performance for this point source category (i.e., 40 CFR Part 436). The major waste water pollutant parameters identified in the development document include total suspended solids, dissolved solids, iron, zinc, fluoride and pH. Note that a number of additional pollutant parameters were studied in the development document, including metals, temperature, asbestos, and radium 226, but were not found to be significant at the time the development document was published.

Further, for stormwater discharges, the EPA documented the pollutants that are typically associated with sand and gravel mining operations in the federal register with the issue of the 1995 MSGP (60 Federal Register 189, p. 50919. September 29, 1995). For most activities, such as site preparation, mineral extraction, mineral processing, and reclamation, typical pollutants included dust, total suspended solids, total dissolved solids, and turbidity. EPA also identified the potential for pollution from oil and fuel, and other toxic contaminants, such as metals, benzene, trichloroethane, tetrachloroethylene, polyaromatic hydrocarbons, and solvents from equipment and vehicle maintenance, as well as nitrogen and phosphorus from any fertilizer used in reclamation activities. In 2006, EPA issued an industrial stormwater factsheet series and identified the pollutants that may be present in stormwater discharges from sand and gravel operations and BMPs to control these pollutants (US Environmental Protection Agency. EPA-833-F-06-025, Dec. 2006). The pollutants identified in the 1995 FR were also identified in the 2006 fact sheet.

With respect to selenium, numerous peer-reviewed articles on the environmental impacts of elevated selenium levels on aquatic life have been published. Several of these studies are cited in the January, 2011 TMDL. (*See, i.e.*, *Ohlendorf, et.al.,* 1986, 1988). These studies, and the potential impacts to aquatic species from selenium, were considered as part of the development process for the TMDL. EPA provides several peer reviewed studies on selenium toxicity in aquatic life on their website at: www.epa.gov/wqc/aquatic-life-criterion-selenium-documents.

Asphalt Batch Plants
EPA documented the pollutants that are typically associated with asphalt paving manufacturing facilities, which includes asphalt batch plants, in the federal register with the issue of the 1995 MSGP (60 Federal Register 189, p. 50861. September 29, 1995). For material storage and handling activities, typical pollutants included total suspended solids, oil and grease, pH and chemical oxygen demand (COD).

In addition, the 2006 industrial factsheet series issued by EPA for Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers (US Environmental Protection Agency. EPA-833-F-06-019, Dec. 2006) identifies the pollutants that may be present in stormwater discharges from these industrial activities, which includes asphalt batch plants. This factsheet expands the list of pollutants identified in the 1995 FR to also include total dissolved solids (TDS), biochemical oxygen demand (BOD), benzene, methylene blue active substances (MBAS), and metals.

Concrete Batch Plants
EPA documented the pollutants that are typically associated with concrete mixing operations in the federal register with the issue of the 1995 MSGP (60 Federal Register 189, p. 50869 and 50870. September 29, 1995). For concrete mixing activities, typical pollutants included TSS, pH, COD, lead, iron and zinc. At facilities that also conduct equipment/vehicle fueling and maintenance, additional potential pollutants included oil and grease, BOD, lead, aluminum, arsenic, cadmium, chromium, and benzene.

In 2006, EPA issued an industrial stormwater factsheet series and identified the pollutants that may be present in stormwater discharges from concrete manufacturing operations and BMPs to control these pollutants (US Environmental Protection Agency. EPA-833-F-06-020, Dec. 2006). The pollutants identified in the 2006 fact sheet included TSS, pH, COD, lead, iron, zinc, oil and grease, BOD.

No changes were made to the permit in response to this comment.

Comment ID: COG50-7.1
Author Name: Mike Sheahan
Organization: Front Range Aggregates

Expanded regulations and lack of clarity: The draft rewrite of CDPHE Permit COG500000, as I interpret it is cause for considerable concern. As an aggregate producer, a company that would be required to comply with the broadly expanded regulations contemplated, the draft permit creates a variety of gray areas that are not clearly objective directions with clearly defined outcomes.

Rather than attempting to restate specific concerns of my company, I am including a copy of Todd Ohlheiser's letter to you on behalf of Colorado Stone Sand and Gravel Association regarding this issue. I support Todd's comments and urge you and your staff to reconsider the attempt to vastly expand the regulatory scope of the discharge permit while reducing the clarity of the document with little or no evidence that it will improve the quality of the discharged water.

Division Response
The division wishes to clarify that renewal permit COG500000 is a permit action, not a regulation action. The permit implements existing regulation, and the division made changes to the permit to clarify and update effluent limitations and other terms and conditions, consistent with already established regulatory requirements and direction, and division practice.

Please see response to the Colorado Stone Sand and Gravel Association's comments (Comment ID: COG50-4.1, 4.2, 4.3, etc)

Comment ID: COG50-11.1
Author Name: Garrett Varra
Organization: Varra Companies Inc.

Economic impact: First I have attached a letter written by CSSGA Director Todd Ohlheiser (I am sure you have seen it). I stand behind his comments fully. Second, I have attached an article by Jay Lehr that I ask you read and share with others in your department. It is rather old, but the point of the article brings to light the heart of our issue, specifically the COG500000 permit, and in a more broad sense, the issues facing us all as inhabitants of this planet.

I do not believe the goals of the mining industry run contrary to the goal of having clean water (or air). I believe, most of the time, that many people who get in to the mining industry are people who love the environment. I know that is what pushed me towards it as a child. Where we do differ is in how to achieve the goal of clean water (or air or soil). As someone who operates a mining business I will be blunt, if we enacted every regulation possible to keep our water (soil/air) clean, we will bankrupt our country. You see, humans make a mess, especially in the pursuit of happiness. It is all of our jobs to balance cleaning up the mess (environmental concerns), without creating another misery behind it (economic concerns). We walk a thin line while doing it.

My thoughts on this are not self-serving. I want to be clear. Whatever regulation is enacted, we will live with it. However, we have to acknowledge the value of construction materials to the overall economy. The new COG500000 permit represents an additional cost that our overall economy will have to absorb. That is the economy that provides for us. I would caution everyone, not just you and your colleagues at WQCD, that we have to keep walking this thin line without falling to one side or the other. I think in this case specifically that may mean more time and study, especially when it comes to selenium.

To sum it up, we have to protect the environment while also protecting the economy. Having one without the other ruins the legacy that we have inherited and are safeguarding for the next generation. We must be careful.

Division Response
The division added a section to the fact sheet that addresses cost benefit analyses for development of permit terms and conditions - please also see response to Comment ID: COG50-4.8. With respect to the portion of the comment regarding selenium, please see responses to Comment ID: COG50-3.6, COG50-4.3, COG50-4.15, COG50-4.16, and COG50-12.1 through - COG50-12.8 and Section VI.A.4.j of the Fact Sheet. No changes were made to the permit in response to this comment.

Comment ID: COG50-5.2
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

Duplicate regulations: Several industrial facilities to be permitted under COG500000 have Air Quality Control Commission (AQCC) construction permits. These permits typically include control measures and requirements designed to minimize generation of fugitive particulate emissions from industrial processes (haul roads, vehicle tracking, stockpiles, material transfer, material processing, etc.). The requirements in the draft COG500000 regarding particulate emissions appear to be duplicative to the AQCC requirements, which could result in redundant regulation. Please consider adding an exception to these requirements for facilities with AQCC permits. (AQCC, Regulation No. 1, 5 CCR 1001-3, III.D). (see requirements at Parts I.M.4.a.iv, M.4.b.iii, and C.2.a.xi of the permit).

Division Response
Dust control requirements are not new for the renewal permit. The previous permits (COR340000 and COG500000) required that the permittee implement Best Management Practices (BMPs) for significant dust and particulate generating activities (see Part I.B and Part I.C, respectively). Fugitive particulate emissions from industrial processes are potential pollutant sources with respect to stormwater discharges. Fugitive particulate emissions that are deposited on surfaces may be discharged with stormwater from the facility.

Control measures selected by the permittee for an air permit may also function as control measures for stormwater discharges, to comply with the Practice-based Effluent Limitations in this permit. The division views the requirements as complimentary. To ensure water quality protection, the division maintains that the requirement for Dust Generation and Vehicle Tracking of Industrial Materials, and associated requirements in the stormwater management plan, are necessary.

No changes were made to the permit in response to this comment.

PART I

A. COVERAGE UNDER THIS PERMIT

1. Activities Covered

Comment ID: COG50-8.1
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Process water and stormwater applicability clarification: Part I.A.1 of the draft permit contains discharge standards and requirements for discharges of both process water and stormwater. Part I.A.1 of the draft permit states which sections of the permit apply to which type of discharge. Specifically, the permit states:

The permit contains both process water and storm water provisions, as follows:
- *Applicable to process water and stormwater discharges: Parts.I.A, 8, E, and F; Part II; Part Ill; and Appendices A and C*
- *Applicable to process water discharges, only: Part I.C.l, Part D; Appendix 8*
- *Applicable to stormwater discharges, only: Part I.C.2 and Parts I.G through* 0

The permit should be more clear to which sections of the permit apply to discharges of that only contain process water or stormwater. For example, if a permit is issued for discharging stormwater, only, are there any sections in Part II, Part Ill, or any of the appendices that apply?

Division Response

The first bullet point from the draft permit (see above) applies to ***all*** discharges covered under the permit, i.e., both process water and stormwater. For clarity, the division modified Part I.A.1 of the permit so that the first bullet point reads as "Applicable to all discharges" rather than "applicable to process water and stormwater discharges."

Comment ID: COG50-5.4
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

From the draft permit, natural stormwater runoff from a dry mine pit appears to be included as a Stormwater discharge.

Part I.A.1.b.ix. "***all disturbed areas***, including mine pit out slopes"

Note that **natural runoff** from a **dry** mine pit is not described in allowable process water discharges:

Part. I.A.1.a.i. "mine dewatering, which includes:

· Any water, including groundwater and stormwater, that is impounded or that collects in the mine and is pumped, drained, or otherwise removed from the mine **through the *efforts of the mine operator;***

· Additionally, for construction sand and gravel facilities and industrial sand facilities only, ***wet* pit overflow** caused solely by direct rainfall and/or groundwater seepage

ii. Process generated wastewater, which includes any wastewater used in slurry transport of mined materials, air emissions control, and processing exclusive to mining (40 CFR Part 436)

iii. Water ***used*** in sand and gravel processing

iv. Stormwater runoff that becomes comingled with the above listed wastewaters before the discharge point.

Language in the draft permit seems to mirror the EPA's Mineral Mining and Processing Effluent Guidelines (40 CFR Part 436, Subpart C (section 31)). However, based on conversations with the Division, it appears the Division's intent is to include all runoff from the mine "pit" as an allowable process water discharge. We disagree with the opinion verbally expressed by the Division that any stormwater runoff contacting mining "pits" is process water, based on our understanding of EPA and CDPHE definitions.

We request the Division cite applicable regulations that would otherwise lead to inclusion of all natural surface runoff contacting a dry mine pit in the definition of process water. Additionally, we request clarification of the exact limits and definition of a mine "pit", as contrasted with processing areas, outslopes, drainages created during the mining process, mined slopes, "all disturbed areas", etc. We also request the Division include a definition of "**wet** pit" in the permit.

Division Response

<u>Process water vs. stormwater</u>

Division practice for the sand and gravel sector has been and continues to be that any mine dewatering water (groundwater and stormwater) that is discharged from the facility <u>cannot</u> be covered under a stormwater-only permit certification, and instead, requires permit coverage under COG500000, which contains applicable sampling provisions for process water. The practice relates to the applicability of the federal ELG to mine dewatering discharges, the pollutant potential of stormwater that is contained in or flows through mine workings, the likelihood for commingling of stormwater and groundwater in the mining pit, and the limitations on coverage of stormwater-only permits, which typically do not allow coverage for discharges subject to federal ELGs. The division's intent with the language in Part I.A.1.a of the renewal permit was to clarify this historical practice to improve transparency for the stakeholder community and certainty for applicants/permittees. For renewal permit COG500000 and consistent with division practice for the sand and gravel sector, both types of discharges are addressed as "process water" in the permit. To respond to the comment, specific examples of division practice and detail regarding interpretation of the ELG follow.

- Existing CDPS permit COR340000 (administratively continued) makes it clear that mine dewatering of runoff is considered process water, and is not authorized by the permit (Part I.A.1.b) as follows (bold emphasis added):

b. Stormwater vs. Process water: When stormwater mixes with process water, any discharge of the resulting mixed water to state waters must be authorized by a separate CDPS discharge permit. For purposes of this permit, **discharge of process-generated wastewaters are not authorized by this permit**, including:

1) Product wash waters;
2) Maintenance/equipment wash waters;
3) Transport waters;
4) Scrubber waters (crushers or classifiers);
5) **Mine dewatering (groundwater and/or runoff);**
6) Other process water as determined by the permit issuing authority;
7) Stormwater runoff from mine or processing areas; and
8) Stormwater runoff, which mixes with process generated wastewater before sampling.

- The permit applications for this industrial sector distinguish stormwater-only discharges from process water discharges in the following manner:

COR340000 permit application excerpt:

IS THIS THE CORRECT APPLICATION FOR YOUR FACILITY?
This application is for use by all industrial stormwater-only dischargers engaged in sand and gravel production operations (and other nonmetallic minerals, except fuels). This application is for both active and inactive mining operations, and concrete and asphalt batch plants at the facility. It is suggested that all applicants contact the Division of Reclamation, Mining and Safety at the Colorado Department of Natural Resources, for information on their rules and regulations for Sand and Gravel mining and processing.

Are any of the following discharged from the sand and gravel production operation subject to this application?

YES □ NO □ Product wash waters?
YES □ NO □ Maintenance/Equipment wash waters?
YES □ NO □ Transport waters (e.g. slurries)?
YES □ NO □ Scrubber waters (Crushers or classifiers)?
YES □ NO □ **Mine dewatering (groundwater and/or runoff from the mine)?**

If the answer is **YES** to any of these questions, **DO NOT** complete this application. Instead, complete the application for Discharges Associated with Sand and Gravel Mining and Processing (**COG500000**).

COG500000 permit application excerpt:

IS THIS THE CORRECT APPLICATION FOR YOUR FACILITY?
This application is for use by all industrial process water dischargers, or process water plus stormwater dischargers, engaged in sand and gravel production operations (and other nonmetallic minerals, except fuels). This application is for both active and inactive mining operations and concrete and asphalt batch plants at the facility. It is suggested that all applicants contact the Division of Reclamation, Mining and Safety at the Colorado Department of Natural Resources, for information on their rules and regulations for Sand and Gravel mining and processing.

Are any of the following discharged from the sand and gravel production operation subject to this application?

YES □ NO □ Product wash waters?
YES □ NO □ Maintenance/Equipment wash waters?
YES □ NO □ Transport waters (e.g. slurries)?
YES □ NO □ Scrubber waters (Crushers or classifiers)?
YES □ NO □ **Mine dewatering (groundwater and/or runoff from the mine)**?

If the answer is **YES** to any of these questions, this is the correct application for the discharge.
If the answer is **NO** to **ALL** of these questions, **STOP NOW**, and instead, complete the application for Stormwater Discharges Associated with Sand and Gravel Mining and Processing (COR340000).

With respect to surface runoff and the applicability of the federal ELG, the Development Document for Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Industry Point Source Category (EPA 440/1-76/059b, July 1979) provides the supporting data and rationale for development of the ELGs and standards of performance for this point source category (i.e., 40 CFR Part 436). This document clearly indicates that mine dewatering includes **surface runoff** that is directed to the mine pit. The development document (Section IX - Effluent Reduction Attainable Through The Application Of The Best Practicable Control Technology Currently Available) identifies that 'mine dewatering wastewater is that portion of mine drainage that is **pumped, drained, or otherwise removed from the mine through the direct action of the mine operator**', and goes on to state that 'pit pumpage of ground water, seepage and precipitation or **surface runoff** entering the active mine

workings is an example of mine dewatering' (emphasis added). Therefore, 'natural surface runoff' that enters the pit and is dewatered, whether dewatering occurs actively or passively, falls within the category of 'mine dewatering' as provided in the development document. To reiterate, division practice for the sand and gravel sector has been and continues to be that any mine dewatering water, which includes surface runoff as described above, that is discharged from the facility is subject to the process water provisions in the permit.

No changes were made to the permit with respect to this portion of the comment.

Mine pit
The permit currently provides a list of those areas from which stormwater discharges are eligible for coverage, i.e., not considered process water. For clarity, the division modified two parts of the permit to ensure that permittees understand what is considered process water vs. stormwater for this permit: Part I.A.1.a to indicate that mine dewatering refers to dewatering from the mine pit (surface or underground mine workings), and Part I.A.1.b.viii of the permit to clarify that allowable stormwater discharges from disturbed areas do not include mine dewatering. The fact sheet was also updated with these changes.

Wet pit
While a definition of wet pit is not specifically provided in the federal ELG (40 CFR 436), the development document generally refers to a wet pit as non-navigable waters (frequently a flooded dry pit), from which raw material is extracted using dragline or barge-mounted dredging equipment (hydraulic dredge), both above and below the water table. For clarity, the division added this definition to the permit, and updated the fact sheet with this change.

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2. Limitations on Coverage

Comment ID: COG50-2.2
Author Name: Thomas M. Peterson
Organization: Colorado Asphalt Pavement Association

Additional permit requirements: It appears that an operation that currently has a single contained SWMP with a single discharge permit that includes a batch plant, asphalt plant, haul roads and a quarry within the contained permit area will be forced to develop 4 separate permits, one each for the batch plant, asphalt, haul roads and quarry. This is unnecessary and will cause additional reporting and ineffective monitoring for the Department. It will be very difficult and impractical to set up and keep track of 4 separate SWMP's, 4 separate monitoring/testing regimes, and 4 separate sets of control measures to manage comingled process waters.

Division Response

Concrete and asphalt batch plants:
The division proposed to exclude stormwater and process water discharges from concrete and asphalt batch plants in the public notice version of the renewal permit. The division received significant stakeholder comment on this proposed approach, and after considering the comments, modified the permit to authorize stormwater discharges from concrete and asphalt batch plants at sand and gravel facilities.

Specifically, discharges from **fixed** concrete and asphalt batch plant facilities located at sand and gravel facilities are now authorized in the final permit. In addition, discharges from **mobile** concrete and asphalt batch plants that operate at sand and gravel facilities, where the sand and gravel facility is permitted for such operations, may be covered by this permit. Note that mobile concrete and asphalt batch plants that operate at sand and gravel facilities, where the facility is NOT permitted for such operations, must obtain alternate permit coverage, currently under CDPS general permit COR900000.

The division also modified the permit to authorize stormwater discharges from asphalt and concrete recycling activities under COG500000, as further discussed in the response to Comment ID: COG50-5.3. The division changed Parts I.A.1 and I.A.2 of the permit, and added specific provisions throughout the permit to address these changes; associated language was added to the fact sheet.

Haul roads and the Construction stormwater permit:
The division has historically required, and continues to require, separate permit coverage for stormwater discharges from construction activities that exceed the one-acre threshold at facilities covered by an existing industrial stormwater permit. This approach is the same as that taken by EPA in early iterations of the MSGP (please see the March 1992 and July 1993 NPDES Storm Water Program Question And Answer Document, Volumes 1 and 2, [EPA 833-F-93-002 and EPA 833-F-93-002 B, respectively]).

The division is consistent in applying this approach at all facilities where both a construction and industrial stormwater permit are applicable, or where a stormwater discharge is otherwise excluded from the permit requirement. For example, construction stormwater permit coverage is required for land disturbing activities of one or more acres (e.g., construction of buildings [such as barns, livestock feeding facilities], structures, roads, or development for a future land use) on agricultural land where the agricultural stormwater runoff exclusion typically applies. In addition, one or more acres of land disturbing activities for the construction of well pads, pipeline right-of-ways, and roads for the oil and gas industry also requires separate construction stormwater permit coverage. Similarly, the requirement to obtain separate permit coverage for stormwater discharges from construction activities also applies to all entities (approximately 950 facilities) that operate under general permit COR900000 (Stormwater Discharges Associated with Non-Extractive Industrial Activity).

To be clear, construction activity **does not** include land disturbance resulting from the act of mining at sand and gravel facilities, but **does** include the construction of facilities associated with mining, including but not limited to haul roads; pads; lay down areas; structures; areas that serve a support function such as transportation or storage; development for a future land use, etc.

As provided in the fact sheet, the division considered including construction activities (those that exceed one-acre of disturbance) as an industrial activity authorized under this renewal permit. However, the division determined that because an ELG has been promulgated by EPA for the construction and development category (Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 40 CFR Part 450), it was more appropriate to interpret the ELG during renewal of the CDPS stormwater construction permit (COR030000).

Therefore, stormwater discharges from construction activities at the facility that exceed the one-acre threshold and *that do not commingle with process water* from the facility (see discussion on **Commingled discharges** below), must be covered by a separate stormwater construction permit certification. Stormwater discharges from construction activities at the facility that exceed the one-acre threshold, but *that commingle with process water* from the facility are not required to be covered by a separate stormwater construction permit certification. The division has clarified this in the fact sheet.

Commingled discharges:
Stormwater runoff (from industrial or construction activities) that combines with process water (such as water in the mine pit) are subject to the process water provisions in the permit, and the stormwater provisions do not apply. This approach also applies to stormwater runoff from construction activities at the facility that exceed the one-acre threshold; specifically, if run-off from such activities commingles with facility process water, the commingled discharge is subject to the process water provisions in the permit, and the activity does not require separate construction stormwater permit coverage. This is consistent with the previous permit. The division has clarified this in the fact sheet.

Comment ID: COG50-4.6
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

Has the CDPHE considered the detriment this permit will have on the state and local economy? The permit greatly increases companies' costs by requiring multiple permits per site. Prices will be raised on everything from homes to roads, and industrial building projects.

Division Response
The division added a section to the fact sheet that addresses cost benefit analyses for development of permit terms and conditions, and addressed this topic in the response to Comment ID: COG50-4.8. Please see response to Comment ID: COG50-2.2, which addresses the portion of the comment that deals with multiple permits at one facility. No changes were made to the permit in response to this comment.

Comment ID: COG50-13.6
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Part 6.2.1.1 of the MSGP calls for quarterly benchmark monitoring for any benchmark parameters specified for the industrial sector(s), *both primary industrial activity and any co-located industrial activities,* applicable to your discharge.

Part 8.E.5 and Part 8.J.5 identify effluent limits that apply to the corresponding industrial activities. Compliance with these limits are to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under the permit. This section implies that there can be more than one industrial activity occurring on one site and covered by one permit.

Division Response
The division understands the commenter's statement as a request and basis for authorizing stormwater discharges associated with asphalt and concrete batch plants, and asphalt and concrete recycling activities in the permit. The division received significant stakeholder comment on this topic, and after considering the comments, modified the permit to authorize stormwater discharges from concrete and asphalt batch plants, and asphalt and concrete recycling activities.

Please see response to Comment ID: COG50-2.2 and Comment ID: COG50-5.3.

Comment ID: COG50-2.3
Author Name: Thomas M. Peterson
Organization: Colorado Asphalt Pavement Association

Haul roads and construction activity are constantly changing and evolving as mining progresses throughout the site. It will be extremely difficult and impractical to obtain a separate construction permit every time a haul road or conveyor is extended, or every time berms, stockpiles or overburden is moved and grading is done. Please clarify this within the proposed permit.

Division Response
Please see response to Comment ID: COG50-2.2.

Comment ID: COG50-3.4
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Permit Applicability: The WQCD proposes that any disturbance over one acre associated with construction activity must obtain CDPS storm water construction permit. The WQCD argues that it is more efficient if a general permit authorizes only one specific type of discharge. CMA would argue that this requirement is going to be less efficient for both the mine operators and the WQCD. Anytime a site adds an access road, facility area, haul road, or expansion area, it is going to be required to obtain a separate permit, with a permit-specific application process, reporting requirements, and termination process, which will have to be completed by both the mine operation and the WQCD.

Furthermore, it will be difficult for both the operation and the WQCD to determine when the threshold has been crossed to require a separate construction stormwater permit. Mining is a dynamic process and facility layout and configuration can change relatively frequently based on operational conditions and market demands. Similar stormwater control BMPs are used across the mine site, whether for new construction areas or established stormwater areas. Because of these considerations, the entire operation should be covered by a single permit, including both process water discharges and stormwater areas. The stormwater requirements for construction activity should not be limited to areas less than one acre in extent. CMA believes that these construction activities over one acre could be included under this permit and SWMP during construction and until they are stabilized, at which time the area could be removed from the SWMP if they no longer meet the definition of a stormwater discharge.

Division Response
Please see response to Comment ID: COG50-2.2.

Comment ID: COG50-4.2
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

Haul roads and construction activity are constantly changing and evolving as mining progresses throughout the site. It will be extremely difficult and impractical to obtain a separate construction permit every time a haul road or conveyor is extended, or every time berms, stockpiles or overburden is moved and grading is done to advance the mining footprint as mine sites are constantly changing with the mining.

Division Response
Please see response to Comment ID: COG50-2.2.

Comment ID: COG50-13.1
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Part 1.1.4.2 of MSGP states that "Stormwater discharges associated with construction activity disturbing one acre or more, or that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more, are not eligible for coverage under this permit, *unless in conjunction with mining activities* as specified in Sectors ….J of this permit. "

Therefore, construction of haul roads would be covered under the MSGP.

Division Response
The division understands the commenter's statement as a request and basis for authorizing discharges associated with construction activities in the permit. Note that this is another example of where the division deviated from EPA's approach in the 2008 MSGP. Please see response to Comment ID: COG50-3.3 and COG50-2.2.

Comment ID: COG50-4.9
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Haul Roads: This same comment applies to haul roads and the use of portable plants. Haul roads and construction activity are constantly changing and evolving as mining progresses throughout the site. It will be extremely difficult and impractical to obtain a separate construction permit every time a haul road or conveyor is extended, or every time berms, stockpiles or overburden is moved and grading is done. Mine sites are constantly changing with the mining. CSSGA appreciates clarification by CDPHE that additional permits would not be required if excavation occurs in an existing permit area. Please let me know if I misunderstand this point.

Division Response
Please see response to Comment ID: COG50-2.2.

Comment ID: COG50-4.1
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

Both stationary and portable batch plants located within an aggregate mining facility are integral with the mining operation. There is no clear "boundary" between the operations of the aggregate mining operation and the batch plant. How will the department effectively regulate an operation with a batch plant, hot plant and quarry if the operator is now forced to permit these all separately? This is an unnecessary and burdensome separation that will create ineffective monitoring for the department.

- The aggregate screens, washers, crushers, stockpiles are often adjacent to batch plants, with process water from this operation often comingling with process water from the batch plant.

- It will be very difficult and impractical to set up and keep track of 2 separate SWMP's, 2 separate monitoring/testing regimes, and 2 separate sets of control measures to manage comingled process waters. Additionally, how are boundaries between 2 separate permits to be identified? This will be very difficult and impractical to administer for producers as well as inspectors. It will set up a paperwork nightmare.

- Section A.3 calls for permit applicant to submit a list of proposed chemicals used in treatment process. If aggregate facility is set up in such a way as process water from aggregate plant comingles with process water from batch plant, then does producer need to submit list of chemicals used to treat batch plant process water?

- Process water from batch plant operations is fairly straight forward – why is it so important to separate it from the aggregate mining?

- The previous 500000 Permit was working well as far as discharge monitoring is concerned, what data does CDPHE have that supports this change?

- If the aggregate mining and the batch plant are kept as 2 separate permits and the plant is designed so that process water comingles, which situation does the producer need to set up and test for, is the aggregate process water considered running into the batch plant site as run-on, or is the batch plant process waster considered running into the aggregate site as run-on, and how does an inspector distinguish the 2 and properly evaluate: monitoring, monitoring frequency, inspections, inspection frequency, benchmark exceedances, corrective actions?

Division Response
Please see response to Comment ID: COG50-2.2 and Comment ID: COG50-4.10.

Comment ID: COG50-4.8
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Complexity of Additional Permits: As the permit is currently drafted, the fact that several different permits will be required to achieve what now falls under one, remains very complex and unwarranted. As there remains no physical boundary between a concrete or asphalt plant and the balance of the mine site, any variation or additional permits between these operations would be nearly impossible to monitor or measure. Your current draft would add unnecessary complexity, yet serve no benefit, as the operator is ultimately responsible for ***water quality as it leaves their site***. Furthermore, in preliminary meetings, the discussions were regarding the possibility of combining permits 340000 and 500000 to help simplify the process. Our industry supported this approach. The aspect of creating several plant specific permits for each site was not discussed and only appeared in the draft permit document. Our industry supports combining the current two-to-one permit (340000 & 500000), but is opposed to creating several additional permits per site. I would request an analysis take place to calculate the additional cost per facility for the operator and CDPHE, as well as an explanation on the expected benefit to the environment. The previous 500000 Permit was working well as far as discharge monitoring is concerned, what data does CDPHE have that supports this change?

Division Response
Please see response to Comment ID: COG50-2.2 for the portion of the comment that discusses multiple permits at one facility.

<u>State law requirements to consider cost-benefit analysis</u>
In general, see the discussion in the fact sheet that addresses cost benefit analyses for development of permit terms and conditions.

This commenter raises some potential issues related to the Division's requirement to consider costs and benefits under state law, specifically §25-8-503.5 (also known as SB 13-0373). The commenter requests that the Division perform an analysis to calculate the additional costs per facility and the expected environmental benefit as a result of the changes to the sand and gravel general permit requirements.

The Division is required to give due weight to a cost-benefit analysis when changing a general permit, but the burden is upon the affected parties to prepare and submit this cost benefit analysis during the comment period. §25-8-503.5(1)(d)(I). A proposed cost benefit analysis concerning one or more of the proposed requirements not already required by federal or state law must be prepared by a third party chosen from an approved list of analysts and paid for by the affected party. §25-8-

503.5(1)(d)(I)-(IV). None of the affected parties prepared and submitted a cost benefit analysis consistent with the requirements of §25-8-503.5 during the comment period.

Comment ID: COG50-13.2
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Part 1.1.2 of MSGP, and Part 8 authorizes stormwater discharges from a "primary industrial activity and any co-located industrial activities", including, mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities, runoff from asphalt emulsion facilities, asphalt paving materials, and concrete product facilities. Sector-specific requirements apply to those areas of the facility where those sector-specific activities occur. This appears to be a much more practical approach to sites that have combined mining and concrete plants on the same site, rather than requiring separate permits.

The potential pollutants from concrete batch plants are very few and easily identified, they are not random "chemicals". Concrete plants will typically have the following possible pollutants present at the batch plant: cement, fly ash, calcium chloride, small amounts of admixtures and colors. Upon review of MSDS sheets and TRI reports the only reportable toxic chemical from admixtures is Calcium Nitrate which is in aqueous solution. Admixtures and colors are often delivered and stored in totes or smaller drums inside batch plants and therefore often qualify for "no exposure" per the MSGP.

Division Response
The division understands the commenter's statement as a request and basis for: 1) authorizing discharges associated with asphalt and concrete batch plants, and asphalt and concrete recycling activities in the permit; and 2) for not having to provide the division with the chemicals used in treatment processes at the facility. Please see response to Comment ID: COG50-2.2 and Comment ID: COG50-4.10.

Comment ID: COG50-2.4
Author Name: Thomas M. Peterson
Organization: Colorado Asphalt Pavement Association

Portable/temporary plants: Will portable/temporary plants be required to get a permit under the general industry permit? A portable/temporary plant typically will go to 3 – 4 sites in a calendar year and will go to a site that already has a SWMP with a single discharge permit. To require the portable plant to have a separate SWMP and discharge permit for each site will be costly and confusing and have the same ramifications as described in the second bullet point above. We oppose having a more complex system that will be difficult to attain and enforce.

Division Response
CDPS General Permit COR900000 (Stormwater Discharges Associated with Non-Extractive Industrial Activity) authorizes stormwater discharges from fixed and mobile asphalt and concrete batch plant primary industrial activities. Under COR900000, certifications for mobile asphalt batch plants (SIC code 2951) and mobile concrete batch plants (SIC code 3273), may be issued for a specific plant, with the equipment defined as the facility. This allows batch plants to move around the state without re-applying for permit coverage at each new location.

While COR900000 provides coverage for stormwater discharges from asphalt and concrete batch plants, the Division has decided to include coverage for these types of facilities, that are <u>located at sand and gravel facilities</u>, under the COG500000 permit (please see Comment ID: COG50-2.2). Therefore, the division does not intend to require separate permit coverage for those mobile asphalt and concrete batch plants <u>that operate at sand and gravel facilities</u>.

If a mobile batch plant operation moves to a sand and gravel facility that <u>does not</u> have permit coverage for asphalt and/or concrete batch plant industrial activities, the owner/operator of the batch plant must obtain permit coverage under COR900000 or modify the COG500000 certification to include authorization for discharges associated with the asphalt and/or concrete batch plant(s). Note that under COR900000, permittees must notify the Division in writing each time the mobile plant is moved, and must meet all permit requirements, terms and conditions for each location.

No additional changes were made to the permit.

Comment ID: COG50-4.5
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

What effect will the permit renewal have on portable/temporary plants? Will they be required to get a permit under the general industry permit? We advocate for a simple system to keep this permit attainable and enforceable; incorporating similar methods that have been established by the Air Quality Control Division.

Division Response
Please see response to Comments ID: COG50-2.4 (Portable/temporary plants) and COG50-2.2.

Comment ID: COG50-5.3
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

The draft permit lists "stormwater discharges resulting from asphalt and concrete recycling activities" as an unauthorized discharge under this permit. The draft fact sheet guides permittees to seek coverage under Sectors D and E of the COR900000 permit.

The activities and pollutant sources associated with concrete and asphalt recycling are not accurately described by the SIC codes covered under Sectors D and E (i.e. concrete recycling does not include raw cement or fine sand stockpiles, added process water, or chemical curing process; asphalt recycling does not include bulk oil storage or usage, emulsion chemical storage or usage, heat sources, or raw aggregate storage). Concrete and asphalt recycling facilities contain similar pollutant sources and activities to sand and gravel processing facilities (e.g. sorting, crushing, and stockpiling of typical construction materials which are used as final products). Recycling facilities do not inherently perform truck and drum washing as part of the recycling. Therefore, we request concrete and asphalt recycling be covered under the revised COG500000 permit.

Additionally, SIC code 1442 (Construction Sand and Gravel) includes facility processes such as crushing, pulverizing, or otherwise treating concrete and asphalt. The description of Major Industrial Group 14 (Mining And Quarrying Of Nonmetallic Minerals, Except Fuels) states: “Establishments primarily engaged in crushing, pulverizing, or otherwise treating other nonmetallic minerals are classified in Mining, whether or not they are operated in conjunction with mines” (WWW.OSHA.gov). Finally, coverage of asphalt and concrete recycling activities under permit COR900000 will force many facilities to seek coverage under two separate permits (COR900000 and COG500000).

Division Response
The division modified the permit to authorize discharges from concrete and asphalt batch plants, as described in the response to Comment ID: COG50-2.2. Because the pollutants associated with asphalt and concrete recycling activities are similar to those for concrete and asphalt batch plants, the division also modified Parts I.A.1 and I.A.2 of the permit to include coverage of discharges from asphalt and concrete recycling activities.

Comment ID: COG50-0.1
Division Initiated Change to the Permit
Organization: Water Quality Control Division

The division modified the final permit to authorize discharges from facilities that are considered ‘major’ facilities by the NPDES Permit Rating Work Sheet, as the division determined that the general permit allows flexibility to address the factors that resulted in a ‘major’ determination, i.e., discharge flow and impaired receiving water body, sampling frequency. As a result, the division also modified the permit effluent tables to include monitoring frequency requirements for major facilities in addition to minor facilities. Certifications issued under the permit will identify the facility as major or minor, as determined by the NPDES Permit Rating Worksheet. Most facilities currently covered under the general permit are “minor” facilities.

Comment ID: COG50-0.2
Division Initiated Change to the Permit
Organization: Water Quality Control Division

The division modified the final permit to clarify that discharges from placer mining activities (process water and stormwater) are not eligible for coverage.

Placer mining discharges (SIC code Major Group 10) are subject to a different federal ELG (40 CFR 440) than sand and gravel facilities (40 CFR 436). The previous COG500000 permit scope does not include discharges from placer mining activities, but does not specifically limit coverage of these discharges. The division determined it was appropriate to clarify this limitation of coverage in the final permit. Facilities that conduct both sand and gravel and placer mine activities may obtain permit coverage from the division through an individual permit.

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3. Chemical addition

Comment ID: COG50-4.10
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Duplication of Chemicals Used: Section A.3 calls for the permit applicant to submit a list of proposed chemicals used in the treatment process. If an aggregate facility is set up so that process water from the aggregate plant comingles with process water from a batch plant, why do producers need to submit lists of chemicals used to treat batch plant process water? This appears to be yet another unnecessary step that only adds bureaucracy. Ensuring clean and safe water returned to the environment is the ultimate objective. Producers understand and respect this fact. They already comply with all safety standards under MSHA and/or OSHA and to add yet another agency to report to would be unnecessary.

Division Response
As provided in the permit and fact sheet, discharges with chemical additions (including release agents) are not authorized unless expressly approved by the division, and the division provides notification of such approval to the permittee. The division must know what chemicals, if any, have the potential to be in the discharge from the facility so that it can determine whether organic, inorganic, and/or metal parameters are potential pollutants of concern that must be limited and/or monitored to protect the classified uses assigned to the receiving water. This approach is consistent with all CDPS permitting, whether under a general permit or an individual permit, and is not a new requirement. Part I.A.6 of the previous COG500000 permit required that:

> 'No chemicals shall be added to the discharge unless the Division grants specific approval in a certification, letter, or other form of communication. To approve a chemical (including release agents), the Division must have the chemical's MSDS sheet. All chemicals must be used and stored in accordance with the manufacturer's recommendations and in accordance with any applicable state or federal regulation.'

Further, some discharges covered under this general permit may exhibit whole effluent toxicity (WET) based on the potential pollutant concentrations in the discharge from chemicals used in the treatment process. In such cases, the division may apply WET testing as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life"(Regulation 31.11) as required by Section 61.8(2)(D) of the Colorado Discharge Permit System Regulations. WET testing is used to evaluate effluent aquatic toxicity and includes a consideration of the synergistic effects that wastewater may have to aquatic life.

No changes were made to the permit in response to this comment.

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4. Obtaining and maintaining Authorization under this permit

Comment ID: COG50-8.2
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.A.4.c of the draft permit states: *A permittee authorized to discharge under this general permit may request to be excluded from coverage by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge. The permittee's authorization to discharge under this general permit is terminated on the effective date of the individual permit.*

Holcim maintains an individual permit, C00000671. This permit allows for the discharge of process water from plant operations as well as the discharge from quarry dewatering. By maintaining the quarry dewatering in the existing individual permit, Holcim's authorization to discharge stormwater via draft permit COG500000 should not be terminated.

Division Response
The division issues permits for discharges from specific activities through specific outfall(s) from a facility. A facility may hold both an individual permit and a permit certification under a general permit as long as the discharges are distinct, i.e., discharged through different outfalls, and the discharges are authorized by the permit (i.e., are within the scope of the permit). Specific to the concern expressed in the comment, if the above scenario applies to the Holcim facility, the division agrees that stormwater coverage may be retained under COG500000. Thus, the scope and applicability of the stormwater provisions in the renewal permit are limited to those discharges not covered under Holcim's individual permit. Note however, that an individual permit and a certification are not *required* for the same site. Should Holcim wish to incorporate all discharges into its individual permit to reduce the number of permits for a given site, a modification to the individual permit can be requested.

No changes were made to the permit in response to this comment.

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7. Permit Termination Procedures

Comment ID: COG50-3.2
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Permit and Termination: CMA also strongly supports the WQCD's discussion of permit termination. The fact sheet clarifies that many times, ponds and impoundments are left behind following mining as an enhancement to the post mine land-use, and such ponds may discharge occasionally. Many times, post mine land-uses on mined lands include some combination of agriculture, wildlife, and reclamation. The WQCD has determined that because the post mine land-uses no longer meet the definition of mine or mine dewatering, the facility can terminate CDPS coverage on these Ponds, assuming they has been approved by DRMS for bond release or meet final stabilization criteria. CMA strongly supports this approach to permit termination. DRMS regulations require mine operations to make extensive stabilization, vegetation, and hydrologic demonstrations that the post mine land uses have been achieved and the hydrologic balance protected, prior to final bond release. Thus, compliance with DRMS regulations should be sufficient to prove that environmental obligations have been met and the CDPS permit is no longer necessary.

Division Response
The division appreciates CMA's support of clear permit termination criteria and requirements specific to the sand and gravel industry.

The division was thoughtful in developing termination criteria for this permit that differentiates it from other extractive sectors, such as coal and metal mining. The termination criterion for the sand and gravel industry acknowledges that a reclaimed pond adjacent to a river or stream may be the post-mining land-use under DRMS regulation, but that any discharge from the pond following bond release will not violate water quality standards and beneficial uses of the receiving water as the discharge is caused by surface runoff to the pond. This contrasts with a post-mining land-use pond for coal and metal mining, where a reclaimed pond can continue to discharge due to contributions from mine adits, seeps, or spoil spring contributions. The division wants to be clear that CDPS permit termination is not contingent on a post-mining land-use, but instead, on a demonstration that any remaining discharge does not contain pollutants that can violate water quality standards and beneficial uses of the receiving water.

C. EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS

1. Process Water Discharge Effluent Limitations

Comment ID: COG50-3.5
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Process Water Requirements: Flow Limitations and Monitoring: WQCD intends to impose a 30-day average limit on the flow that is equal to the design capacity provided by the permittee in the application. The WQCD also intends to continue requiring continuous monitoring on flow (continuation of requirements from 2008 general permit). First, attempting to put an accurate limit on process water flow at mining facilities is nearly impossible. Discharges at most mining facilities are dependent on a number of factors beyond the permittee's control such as precipitation and evaporation, groundwater inflow, and storm water runoff. In many cases, discharge water will be a combination of what the WQCD considers process water and storm water. Attempting to impose a limit on flow is only going to create compliance issues for these operations with little or no resulting environmental benefit.

Similarly, requiring continuous flow monitoring at these facilities will not provide any additional environmental protection. Flow can adequately be characterized using instantaneous measurements during sample events. Continuous flow monitoring adds cost and the burden of constant upkeep and maintenance, including downloading data, dataset corrections, freeze protection, and device calibration and will consume significant time and resources of onsite personnel. Rather, the WQCD can rely on the mine personnel's continuous presence and knowledge of the site to take accurate and representative flow measurements during discrete sample events.

Division Response

As indicated in the fact sheet, the division must include flow limitations for all outfalls consistent with Regulation 61.8(2)(i), which requires that "all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of concentration and mass or concentration and *flow* … " (emphasis added). Please also see response to Comment ID: COG50-3.3 regarding the flow limitation portion of the comment.

Additionally, the division has, in other CDPS permits, imposed flow limitations at outfalls where the discharge flow is influenced by precipitation. Furthermore, as pointed out by the commenter, the division does not select the flow limit, but rather asks the permittee to determine a reasonable limit based on their knowledge of the site, and to state this flow limit in the application. The division also reiterates that flow limitations are 30 day averages, and that report only conditions apply to the daily maximum flow.

The division agrees that in some circumstances, instantaneous flow measurements may be appropriate for discharges from sand and gravel facilities. However, all flow measurements must be representative of the discharge and if power is available, continuous monitoring is appropriate. The permit addresses representative sampling at Part I.E.2 (Representative sampling and Monitoring points); Part I.E.5 (Flow Measuring Device – Process water discharges); and in Appendix C (Definitions) in the definition of Grab sample. Additionally, the permit addresses availability of power in Note 2 (Flow Measurement) to Table C.1.1, which states that if power is not available, flow may be measured on an instantaneous basis, consistent with division policy WQP-20 (Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Waste water Treatment Facilities).

Finally, as in the case of TMDL implementation for selenium, a permit limitation when dilution is granted can only be derived with a discharge flow (max monthly average). Without a discharge flow, there is no way to calculate the assimilative capacity available to the discharge, and no way to set an appropriate permit limit. When the limit is calculated based on that effluent flow, the flow limit ensures that the discharge does not cause or contribute to an exceedance of the standard. It is inappropriate to derive a permit limit based on, for example a facility effluent flow into the stream at 1 MGD, and then allow a facility to discharge at for example, 2 MGD with a limit that was derived under the assumption that the facility would only be contributing 1 MGD into the receiving water.

No changes were made to the permit in response to this comment.

Comment ID: COG50-4.11
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Process Water Requirements: Flow Limitations: WQCD intends to impose a 30-day average limit on the flow that is equal to the design capacity provided by the permittee in the application. The WQCD also intends to continue requiring continuous monitoring

on flow (continuation of requirements from 2008 general permit). First, attempting to put an accurate limit on process water flow at mining facilities is nearly impossible. Discharges at most mining facilities are dependent on a number of factors beyond the permittees control such as precipitation and evaporation, groundwater inflow, and stormwater runoff. In many cases, discharge water will be a combination of what the WQCD considers process water and stormwater. Attempting to impose a limit on flow is only going to create compliance issues for these operations with little or no resulting environmental benefit.

Division Response

Please see responses to Comment ID: COG50-3.3 and Comment ID: COG50-3.5

Comment ID: COG50-3.7
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Process Water Requirements: TDS Monitoring: The WQCD requires quarterly TDS monitoring, stating that it is based on the Salinity Regulations. However, collection of this data provides no additional environmental protection at these facilities. First, TDS does not correlate with toxicity to aquatic life and is not an appropriate indicator for aquatic life protection. Also, it is known that the primary method of treatment for dissolved solids, reverse osmosis, is extremely costly, energy intensive and produces waste byproducts that generally do more harm than good. Since operations do not have any recourse to reduce dissolved solids concentrations, periodic monitoring should not be required. Requiring monitoring only for the sake of it is not fair or responsible.

Division Response

The division is responsible for implementing all Colorado Water Quality Control Commission regulations, including Regulation 39, the Colorado River Salinity Standards. Regulation 39 outlines Colorado's participation in a multi-state basin-wide approach for salinity management as regulated by the Clean Water Act, Section 208. The Regulation is to control TDS throughout the Colorado River Basin for *all uses* of the Colorado River, and is not specifically for aquatic life protection. The division is required to gather and evaluate information from all dischargers in the Colorado River basin to maintain its requirements for the salinity control program.

Consistent with division practice for all CDPS permits, including the previous COG500000 permit, the division will continue to require that facilities discharging to the Colorado River basin monitor for TDS and may apply limitations or require additional studies, as necessary and consistent with the Regulation.

No changes were made to the permit in response to this comment.

Comment ID: COG50-3.8
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Process Water Requirements: Phosphorus Monitoring: The draft permit requires phosphorus sampling at facilities that discharge to waterbodies subject to the Phosphorus Control Regulation and may place phosphorous allocations on these facilities. However, the fact sheet explains that for nitrate, the Division chose not to impose a limit since the source of nitrogen is likely fertilizer used for reclamation. Similarly, there is no significant source of phosphorus expected at these facilities, other than the phosphorus found in fertilizers. Requiring these facilities to monitor for and potentially limit phosphorus discharge is unnecessary.

Division Response

The division is responsible for implementing all Colorado Water Quality Control Commission regulations, including the phosphorus control regulations 71, 72, 73, and 74, which apply to facilities that discharge to the following watersheds – Dillon Reservoir, Cherry Creek Reservoir, Chatfield Reservoir, and Bear Creek Reservoir. The division maintains the position, as stated in the fact sheet, that data is required to determine the impact of all facilities, including the sand and gravel sector, on phosphorus concentrations in these controlled areas. There is no exclusion in the control regulations for sectors or specific types of discharges, and therefore the division will continue to require that facilities discharging to these watersheds monitor for phosphorus, subject to the effluent limitations established in the permit. Further, phosphorus monitoring/effluent limitations is not a new requirement as the previous COG500000 permit included phosphorus as a site-specific parameter subject to potential monitoring and waste load allocations.

The information provided in the comment regarding nitrate is not entirely correct. The division made a decision to not require benchmark sampling for nitrate-nitrite for stormwater-only discharges from SIC major group 14 industrial activities; the division did not chose to waive an effluent limitation for this parameter. This distinction is important – benchmark requirements are not stormwater discharge effluent limitations, but a tool to assess control measure effectiveness. In contrast, the division has a regulatory responsibility to implement monitoring/effluent limitations for phosphorus in CDPS permits, as described above.

No changes were made to the permit in response to this comment.

Comment ID: COG50-3.6
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Process Water Requirements: Selenium and Related Definitions: Similarly, it appears that the WQCD may be creating a widespread compliance issue with selenium at these locations. According to the sampling data reported, the WQCD reports a 30% exceedance rate for selenium but the WQCD determines that intake credits do not apply to these operations. The WQCD should not require these operations to treat for a pollutant that is ambient. Essentially, the WQCD is potentially creating a widespread compliance issue for sand and gravel operations for a pollutant that is naturally occurring.

Division Response

Intake Credits
In response to this comment and several others, the Division has taken a second look at the potential applicability of intake credits under the general permit. In doing so, the Division re-reviewed the EPA Region 8 memo along with the Great Lakes System (GLS) rule (60 FR 15366) which both discuss the application of intake credits. While the Division's position has not changed, Section VI.A.4.j of the Fact Sheet has been modified to provide a more in-depth analysis of the potential applicability of intake credits in response to the comments provided.

Reporting information shows that over 50% of the facilities in the Gunnison Basin that have reported selenium effluent data have exhibited at least one instance of selenium discharge concentrations exceeding the water quality standard of 4.6 ug/l. Selenium discharge concentrations for two facilities were at times in excess of 30 ug/l.

The Division notes that facilities that cannot immediately meet the new WLAs and associated WQBELs are eligible for compliance schedules commensurate with the Divisions Compliance Schedule Policy, Permit Compliance Schedules, WPC-2, February 2010.

No changes were made to the permit in response to this comment.

Comment ID: COG50-4.3
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

Regarding selenium and intake-credits, the Division's "conclusion" does not provide scientific data as the following statements include "**reasonably** expected to modify the character of selenium" and "**can** increase solubility of selenium present". (Fact Sheet page 24, section A-4, subsection i).

Division Response
A discussion of intake credits is included in response to Comment ID: COG50-3.6 and in Section VI.A.4.j of the Fact Sheet.

No changes were made to the permit in response to this comment.

Comment ID: COG50-4.15
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Intake Credits: It remains the opinion of CSSGA that the WQCD is creating a widespread compliance issue with selenium. According to the sampling data reported, the WQCD reports a 30% exceedance rate for selenium but the WQCD determines that intake credits do not apply to these operations. The WQCD should not require these operations to treat for a pollutant that is either naturally occurring or caused completely outside the control of this industry and the companies involved. Lastly, regarding Intake Credits and the Fact Sheet, page 24, section A-4, subsection i, I have recreated your statements and included comments with several points:

The Divisions practice has been that the following three conditions must be met in order to conclude that an intake credit is appropriate. These conditions are consistent with those documents by the EPA Region 8 in the 1992 statement, a copy of which can be found on the Division's website.
• *The industrial activity that uses the water and generates the discharge in no way modifies the intake water character for the pollutant of concern.* **Our process does not modify the water, if there were any data regarding modification; it is that selenium is decreased from mine intake to discharge.**
• *The point of diversion of use is the same waterbody as the point of discharge.* **This is the same waterbody, although under the surface.**
• *The timing of the discharge is such that the discharge does not create water quality standards exceedances that would not have occurred otherwise.* **Our process does not create water quality exceedances that would not have occurred otherwise, and this is our point of contention.**

Therefore, I would argue the industry does, in fact, meet the three necessary conditions regarding Intake Credits. The fact that selenium is caused by agricultural irrigation is generally known and accepted, and to solely push responsibility for this issue to the sand & gravel industry is unwarranted. This point is discussed in great detail with the letter to CDPHE from Wright Water Engineers, Inc., dated June 20, 2014. A copy is also attached with this letter.

Division Response
A discussion of intake credits is included in response to Comment ID: COG50-3.6 and in Section VI.A.4.j of the Fact Sheet.

On February 14, 2011, the USEPA Region 8 approved the *Gunnison River and Tributaries, Uncompahgre River and Tributaries, Selenium TMDL.* That TMDL contains WLA's for selenium for point (and non-point) source discharges to specific segments within these river basins. Point source discharges, including sand and gravel facilities that operate in these basins were assigned specific WLAs. The implementation of TMDL WLA's for point source discharges is via NPDES discharge permit limitations. Thus, at this time, the WLAs for selenium are being implemented in certifications for facilities discharging to applicable segments within these basins. Note that domestic wastewater treatment facilities that were listed in the TMDL already have load allocations limited in their current permits (e.g. Town of Hotchkiss, Olathe, City of Delta), and are working to reduce selenium concentrations in their effluent. Limitations that are new, or become more stringent are eligible for compliance schedules. The permit does not require or specify treatment, only that the discharge authorized in the certification meet discharge effluent limitations.

The Division disagrees with the commenter that sufficient demonstration of the three conditions in the 1992 Region 8 Memo has been made on an industry-wide basis.

- **The facility diverts water for use and in no way modifies the intake water character for the pollutant of concern (i.e., either by increasing pollutant concentration through evaporation or by adding pollutant mass from internal sources).**

Sand and gravel facilities (or sanitary sewage conveyance systems which intercept selenium rich groundwater (TMDL p.5) do not simply 'divert' water for 'use' (an example given by EPA is once-through cooling water). Sand and gravel facilities mine subsurface alluvial deposits in and around areas of Mancos shale, and do not simply divert water for a use. It is unreasonable to conclude, and no data has been provided, which clearly demonstrates that these facilities are diverting water for a use, and the character of the discharge water is 'in no way modified' from 'intake water.'

- **The point of diversion of use is the same waterbody as the point of discharge.**

As explained in Section VI.A.4.j of the Fact Sheet, there has not been a sufficient demonstration that all sand and gravel facilities covered under the permit can sufficiently demonstrate the "same body of water" requirement in accordance with the specific requirements of 40 C.F.R. §132.

- **The timing of the discharge is such that the discharge does not create water quality standards exceedances that would not have occurred otherwise.**

As explained in the Fact Sheet, the facilities have not shown that the timing of the discharge does not have a reasonable potential to contribute to an exceedance of the standard. Sand and gravel pits can be large, with large detention times, and large discharge flows. The facilities have not demonstrated that the dewatering during high flow periods is entirely discharged during the high flow month. Per the EPA Memo:

Facilities that have a reasonable potential ***to contribute to*** an exceedance by diverting water during high flow conditions, when background water quality could be poor, and returning the water during low flow conditions, when background water quality may be good, will not satisfy this condition.

Comment ID: COG50-4.16
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Adherence to Legislation Regarding Selenium: I have the following points in regards to procedures outlined in legislation passed last year with Senate Bill 13-073. While CDPHE has developed a Fact Sheet as a STATEMENT OF BASIS AND PURPOSE, the NEED FOR THE PROPOSED REQUIREMENTS remains unclear as outlined in 25-8- 503.5(a). The industry understands the need to abide by scientifically supported information and would like to see peer reviewed studies and data where applicable.

As I stated in my previous email, the statement regarding the disallowance of Intake Credits does not appear to follow SB 13-073 with the statement *"The Division's conclusion is that mining and dewatering operations, and nature of the discharge,* ***are reasonably expected to modify the character of selenium*** *in the discharge and the change in the timing of the pollutant loading to the receiving water. The mining activity by its nature disturbs material that is part of the mining operation,* ***which can increase solubility of selenium*** *present in those materials (Fact Sheet page 24, section A-4, subsection i).* I would request adherence to the above referenced bill that reads: 25-8-503.5(b) PRESENT EVIDENCE SUPPORTING THE NEED FOR THE PROPOSED REQUIREMENTS, INCLUDING INFORMATION REGARDING POLLUTANT POTENTIAL AND AVAILABLE CONTROLS, INCIDENT OR ENVIRONMENTAL DAMAGE, AND PERMIT VIOLATIONS.

Division Response

The commenter merges two distinct issues: The Division's statutory requirements under §25-8-503.5, C.R.S. (SB-13-073), discussed in Comment ID: COG50-4.8, and the Division's analysis of the availability of intake credits, discussed in the division's response to Comment ID: COG50-3.6 and Section VI.A.4.j of the Fact Sheet. The statement from page 24 of the Fact Sheet cited in the comment was made as part of the Division's analysis to determine if intake credits are appropriate, and whether the "industrial activity that uses the water and generates the waste in no way modifies the intake water character of the pollutant of concern".

The entire Fact Sheet explains the Division's statement of basis and purpose, explaining the need for the proposed requirements, and a summary of the evidence reviewed which supports the need for the proposed changes to the General Permit. Note that different statutes and regulations refer to this document that accompanies public notice and issuance of a permit in different ways, which may result in some confusion.

In response to this comment, the Division added reference to the various terms for the fact sheet document and clarified that the content addresses those requirements, however no changes were made to the permit in response to this comment.

Comment ID: COG50-12.1
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

<u>Causes of Elevated Selenium</u>

The causes of elevated selenium in the Grand and Gunnison Valley region are due to the presence of naturally occurring geologic conditions that are exacerbated by irrigation practices. Many references document these conditions. For example, in USGS Scientific Investigations Report 2008-5036 "Concentrations and Loads of Selenium in Selected Tributaries to the Colorado River in the Grand Valley, Western Colorado 2004-2006" (Lieb 2008), the USGS provides multiple statements regarding the causes of elevated selenium. A few examples include:

Selenium exists naturally in the Mancos Shale and in Mancos Shale-derived soils common to the Grand Valley. Studies in the Grand and Gunnison Valley regions of western Colorado (Butler, 2001; Butler and Leib, 2002) indicate that selenium mobilization occurs primarily in shallow aquifers and results from deep percolation from irrigation and seepage of irrigation water from unlined canals. Water in shallow aquifers is a diffuse nonpoint source of return flow to tributaries and the Colorado River, thus making it difficult to determine source locations of selenium loading.

The most prevalent water-quality concerns in the Grand Valley are related to elevated concentrations of salinity and selenium in the Colorado River and tributaries to the Colorado. Elevated levels of these two constituents are directly attributable to the location and amount of irrigation in the Grand Valley.

Tributary streams to the Colorado River in the Grand Valley that have the highest selenium and salinity concentrations tend to be those in subbasins that have large tracts of agricultural or residential development and extensive outcrops of, and soils derived from, the Mancos Shale. Volcanic ash layers that occur as interbeds throughout the Mancos Shale could be the source of selenium and other trace constituents in the Grand Valley (Butler and others, 1996)…. As the unused irrigation water moves over the land surface or through the subsurface as ground water, it mobilizes salinity and selenium by mechanical or chemical means. Without irrigation water, the rate of mobilization and loading of salinity and selenium from the Mancos Shale would be greatly reduced because only water that originated as precipitation would be available.

Although statements like the ones above are not "new" information, they serve as an important reminder of the causes of elevated selenium and the likely solutions for selenium reduction, which are focused on improving irrigation-related practices. Unlike irrigation activities, dewatering activities by sand and gravel operations are not causing elevated selenium. Similarly, the solutions for reducing elevated selenium in the basin are primarily focused on irrigation management, both in agricultural and residential contexts. To our knowledge, there are not scientific studies that have demonstrated that removal of sand and gravel operations in these areas would result in a substantive improvement in instream selenium water quality. Requiring sand and gravel operations to treat a pollution problem caused by others (and nature) displaces the cost of remediation to entities not responsible for the pollution. Thus, WWE suggests that the concepts associated with intake credits, discharger specific variances or other similar approaches should be considered prior to requiring treatment to attain numeric effluents when the sand and gravel operations have not caused the elevated selenium in the discharge.

Division Response

The comments submitted pertain specifically to ambient selenium levels in the Grand and Gunnison Valley and the TMDL for this region. The imposition of permit limits are not based upon a demonstration (or not) of a point source discharge *causing* elevated ambient conditions. Rather, discharge permits are authorized with limitations for specific pollutants based on the reasonable potential to cause, *or contribute to* an exceedance of a standard, and/or the assignment of a WLA in an approved TMDL. In this case, there is a TMDL with WLAs for facilities, including domestic facilities and sand and gravel operations, within these segments. Further, effluent data indicates that discharges from sand and gravel facilities on these segments have the potential to cause or contribute to an exceedance of the selenium standard assigned to the receiving waters by the Water Quality Control Commission. Thus, limitations are required for selenium, including the TMDL WL allocations that were approved by the USEPA in February 2011.

As discussed in Section VI.A.4.j of the Fact Sheet, intake credits do not apply to WLA's, and are not applicable for WQBELs for selenium at this time. Note that the General Permit will implement the TMDL through the permit certification process, and adjustments to the WLA assigned to individual permittees must be made through that process. The permit and associated certification to discharge will not include a provision or requirement to actively treat the effluent. The permit limits function to control effluent quality. How those limits are attained is managed by the permittee. The compliance schedules will require the permittees to identify sources of selenium and strategies such that compliance with the effluent limits may be attained. Once better information becomes available regarding discharge concentrations and flows, some permittees may be able to comply with the selenium limits without any operational changes or control strategies. Permittees that find that they do need to make some change in order to be able to comply with selenium limits can consider a wide range of options, including water management options, changes to mining practices, changes to dewatering practices, and treatment.

At this time, specific changes are not being made in response to this comment. In general, please see response to Comment ID: COG50-3.6, Intake Credits, above, and Section VI.A.4.j of the Fact Sheet.

Comment ID: COG50-12.2
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Site-specific Standards and Associated Uncertainty Regarding Attainability of Standards under TMDL

Selenium impairment listings are one of the most common causes of stream impairments in Colorado, with selenium generally recognized as a statewide issue where selenium-bearing geologic formations are located. The Water Quality Control Commission has approved site specific chronic and acute standards for selenium for streams where natural or irreversible human-induced conditions cause elevated selenium instream. Such site-specific standards, based on appropriate scientific documentation, have enabled discharge permittees to obtain more feasibly attainable numeric effluent limits that differ from 4.6 µg/L (chronic) and 18.4 µg/L (acute). Although WWE understands that the approval of the Gunnison TMDL creates constraints for the Division's Permits Unit regarding application of alternative permit limits, uncertainty remains regarding the appropriate underlying standard that will be attainable for the stream segments included in the TMDL, as well as for other selenium-impaired streams without TMDLs. Stated differently, the Gunnison TMDL's goal is attainment of stream standards, but even if contributions of irrigated agriculture are controlled, the presence of naturally occurring Mancos shale may still limit attainment of a chronic 4.6 µg/L selenium stream standard. Prior to implementing costly treatment for selenium removal (or potentially shutting down sand and gravel operations), it is important to have more information on areas where site-specific standards are warranted. In the case of the Gunnison TMDL, it is likely that natural contributions of selenium may limit the standard that is ultimately attainable simply due to the ongoing presence of a selenium source. As noted previously, Figure 1 illustrates the significant presence of Mancos shale in the Gunnison and Grand Valley region. This issue is relevant when costs of treatment are considered, as discussed later in this comment letter.

Division Response
The Division appreciates the commenters' input about the source of selenium in the Gunnison and Grand Valley region, but reiterates that the Division does not have the authority to change the underlying selenium standard in the stream segments at issue. The Water Quality Control Commission (WQCC) is the governing body that sets and revises stream standards. The underlying stream standard for these segments has not changed since the TMDL approval, and as such, the TMDL and associated WLAs remains valid. No changes to the permit have been made in response to this comment.

Comment ID: COG50-12.3
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Concerns with Assumptions Regarding Sand and Gravel Discharges in Gunnison TMDL

From discussions with Division staff, we understand that the permit COG500000 must comply with the Gunnison TMDL. Although WWE was not involved with the Gunnison TMDL process, we understand that the CSSGA and the Selenium Tasks Force raised a number of concerns during the development of the TMDL. Although the Division provided responses to comments in the TMDL, the CSSGA continues to disagree with some of the decisions made in the TMDL. There does not appear to be an adaptive management process or provision for adjustment of the TMDL as the science improves in the watershed (or as more information becomes available regarding whether a standard of 4.6 µg/L is attainable, even once agricultural irrigation sources are managed). Because of the significant implications to sand and gravel permittees, we recommend that where additional data indicate that assumptions related to sand and gravel operations contribution are incorrect in the TMDL, that the permit should be able to accommodate different assumptions from those in the TMDL, if supported by appropriate data analysis.

For purposes of this comment letter and the meeting planned by the Division in July 2014, we would like to repeat a few pertinent excerpts provided in a comment letter from the Gunnison and Grand Valley Selenium Task Force (January 15, 2010) on the Gunnison River TMDL. These statements include:

1.) The Gunnison TMDL has far reaching economic and environmental implications for local and regional communities. It is the first TMDL in western Colorado to be implemented in federally-designated critical habitat under the Endangered Species Act. With this in mind, the STF believes the TMDL report could benefit from additional data collection, analyses, and stakeholder collaboration, especially with point source dischargers;

2.) The TMDL erroneously states that sand and gravel extraction "accelerates the mobilization and transport of selenium…" (page 4, paragraph 1). It is the opinion of the STF that sand and gravel operations do not accelerate the mobilization, add, or load selenium to the river system. They intercept selenium laden groundwater in their operations and discharge it back to the river system;

3.) Much of the burden of compliance within the TMDL lies with sand and gravel operators and municipal wastewater service providers. The STF does not believe this is a reasonable approach to dealing with needed selenium load reductions.

Similar and additional concerns were expressed directly by the CSSGA in a separate letter (January 15, 2010) to the Division (Attachment 1). One such concern is that the assumptions of the TMDL likely overestimate the loading contributed by sand and gravel operations due to the intermittent nature of dewatering discharges to the stream. Unlike municipal wastewater treatment plants or other industrial operations, sand and gravel discharges vary from year to year, depending on various production related issues and hydrologic conditions. In an example provided for the Delta Paving Pit in the CSSGA comment letter on the TMDL, the number of discharge days per year over a six year period included 0, 30, 125, 135, 136, and 157 days at one pit. Additionally, the flow rates at each pit vary substantially—DMR data for some pits show daily averages of 0.1 million gallons per day (MGD) (or even no discharge), with maximum flow rates of 4 MGD or more. This variation in flow rate and discharge days is a critically important consideration in loading assumptions applied in the Gunnison TMDL. If numeric limits for selenium are ultimately adopted in COG500000, recognition of this variability is important. These variable flow rates also complicate design and operation of potential treatment alternatives.

Division Response

The Division appreciates the commenters' input, but has not made changes to the General Permit in response to this comment. As previously stated, any changes to underlying assumptions, adaptive management process or submission of additional data in the TMDL must be made as part of the TMDL process. The Division does not have the ability to change the underlying selenium standard in the stream segments at issue.

The commenter does raise important considerations about loading assumptions based on variable flow rates from sand and gravel facilities. As discussed in the fact sheet and the accompanying meeting held with the TMDL sand and gravel facilities in July 2014, the Division outlined the flexibility in setting permit limitations for these facilities based on monthly flows (both ambient and effluent facility flow). As such, some facilities may be able to attain compliance with the effluent limits by managing effluent flows. For example by discharging when flows in the rivers are largest (spring), and reducing effluent flows when ambient flows have ebbed. See also Comment ID: COG50-4.4

Comment ID: COG50-12.4
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Intake Credits

As stated in the Fact Sheet, the Division's practice has been that the following three conditions must be met in order to conclude that an intake credit is appropriate:
1. The industrial activity that uses the water and generates the discharge in no way modifies the intake water character for the pollutant of concern.
2. The point of diversion of use is the same water body as the point of discharge.
3. The timing of the discharge is such that the discharge does not create water quality standards exceedances that would not have occurred otherwise.

The Division provides explanation in the Fact Sheet regarding the reasons that it believes the Sand and Gravel industry does not meet these conditions, whereas the industry continues to believe that these conditions are met. Additional comment on these three conditions in the context of sand and gravel dewatering operations includes:

1. For dewatering operations, data collected by the industry on several representative pits demonstrates that movement of alluvial groundwater through the pit does not increase selenium concentrations discharged from the pit. Example data from various pits show that the concentration discharged from the pit is often lower than the concentration of the alluvial groundwater flowing into the pit, as shown in Figures 2a-b.

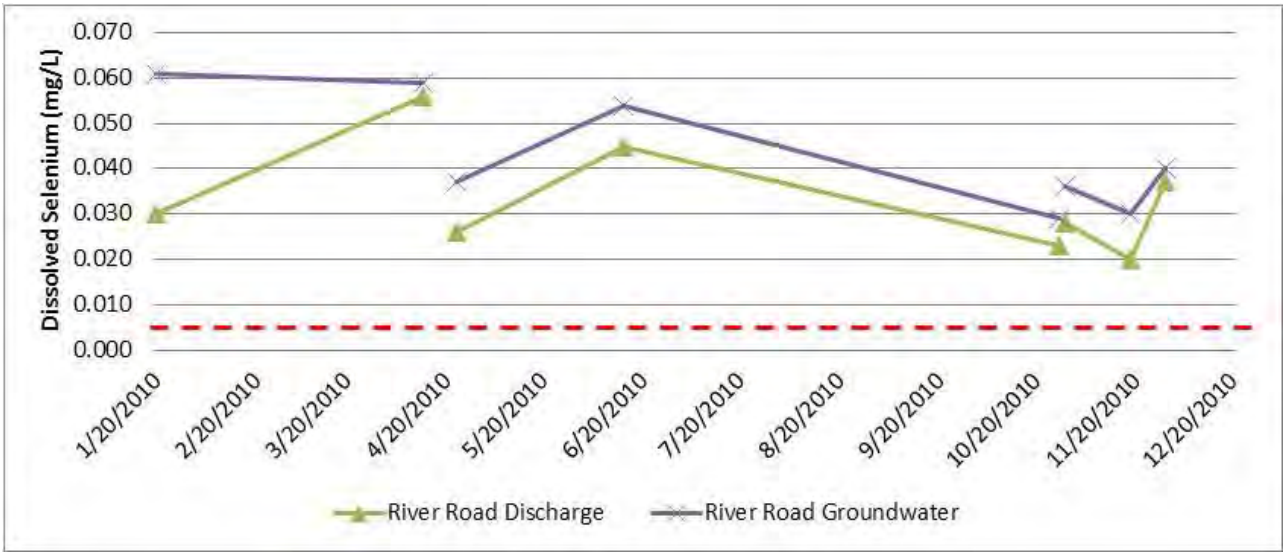
2. Alluvial groundwater and surface stream flows are closely related and function as a single system. At times, surface waters move into the alluvial groundwater and at other times alluvial groundwater discharges to the stream. This relationship is

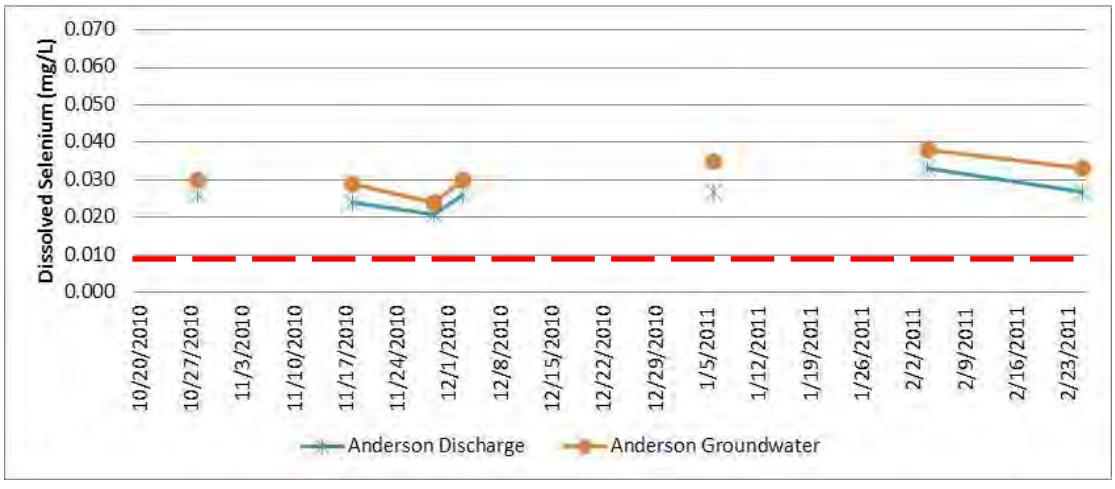
recognized both in water rights administration, as well as throughout Water Quality Control Commission regulations, such as in cases where water supply uses are assigned to streams with hydraulically connected alluvial wells (even when no surface water diversion for domestic use is present on the stream).

3. When viewed over a reasonable hydrologic time period (e.g., perhaps a year or other time period, depending on the site), the selenium load delivered by dewatering operations is expected to be comparable to the load delivered naturally through diffuse alluvial discharges to the stream. As illustrated in Figures 3a-b, dewatering operations change the location of discharge of alluvial groundwater to the stream, but not the amount of discharge. Instream monitoring data indicating that changes in the delivery method of the alluvial groundwater have caused increases in selenium exceedances have not been documented by the industry and the industry is not aware of this information being documented by the Division. Although it is possible that short-term variations in loading (rate of delivery) could occur, the net change in selenium loading over time is not expected to be significant based on hydrogeologic principles. During initial dewatering, the rate of discharge may be temporarily higher than the natural alluvial rate for a limited time period; however, after this initial time period, it is expected that the alluvial discharge rate may be lower than the natural discharge rate. Even though there may be some short-term variation, the "net" loading is not expected to be substantively different than what would have occurred in the absence of the gravel pit operations.

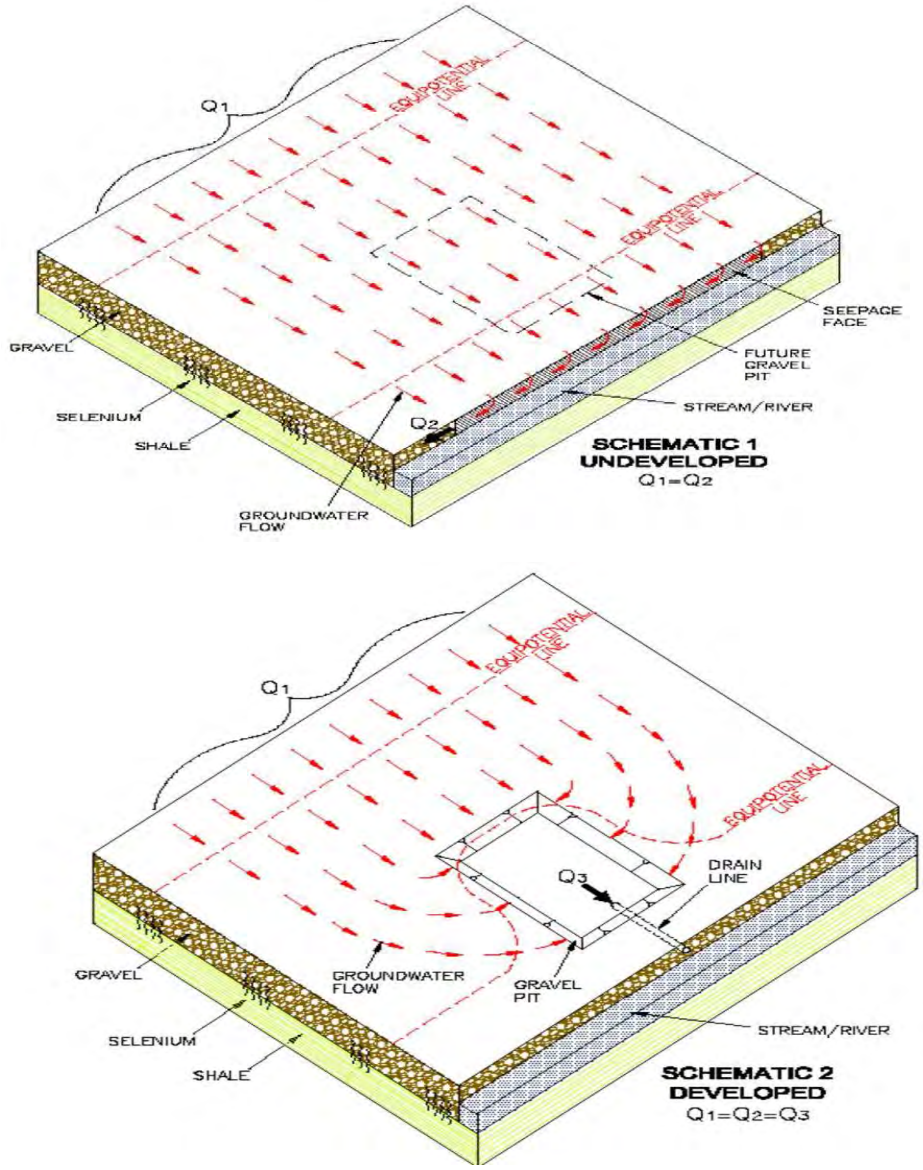
If the Division is open to reconsidering its position on "intake credits," WWE believes that it would be feasible to further develop examples based on site-specific data further illustrating these concepts. An additional consideration based on the three principles above is that if the concentration of selenium in the alluvial groundwater is decreased by some percentage in the open gravel pit, then it may be that short-term changes in volume-related discharges may be off-set by these reductions in concentrations.

Figure 2a-b. Example Data Comparing Selenium Concentrations in Alluvial Groundwater Inflows to Pits vs. Piped Outfalls from Gravel Pits





Figures 3a-b. Conceptual Alluvial Groundwater Flows Before and During Gravel Pit Dewatering



Division Response

The division considered this comment, but did not made any changes to the permit. In general, please see response to Comment ID: COG50-3.6, Intake Credits, above, and Section VI.A.4.j of the Fact Sheet.

Comment ID: COG50-12.5
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Costs of Treatment

Costs of selenium removal are substantial and do not reliably remove selenium below 5 µg/L (CH2M HILL 2010). Table 1 below provides a brief overview of full-scale technologies characterized in a technology review focused on selenium removal prepared by CH2M HILL in 2010 titled "Review of Available Technologies for the Removal of Selenium from Water." (This report can be accessed at http://www.namc.org/docs/00062756.PDF.) These costs are presented to simply illustrate the capital and annual operation and maintenance costs that an operator could incur to attain dissolved selenium concentrations approaching 5 µg/L. Some of the technologies identified in the CH2M HILL report would not be viable due to water rights (e.g., evaporation based approaches) and space constraints (e.g., certain bioreactor approaches). Others are cost prohibitive and have other environmental tradeoffs such as

the disposal of treatment waste streams (e.g., reverse osmosis). Based on initial review of the CH2M HILL report for technologies available as of 2010, a ballpark range associated with the capital costs for selenium removal is in the range of $11 – 40 million per 1 MGD of treatment plus ongoing operational and maintenance costs. Thus, there are real concerns regarding the feasibility of implementation of selenium treatment to levels that would meet 4.6 µg/L numeric effluent limits.

An additional consideration related to treatment requirements for sand and gravel operations is that the capital investment required is particularly costly relative to the operational lifespan of a gravel pit. Unlike industrial plants or municipal wastewater plants, sand and gravel operations have a shorter operational life, moving from location to location after mining operations are completed. Additionally, the capital investment required by one company operating multiple pits to implement multiple treatment facilities is not realistic economically. For example, one company could be required to install multiple relatively short-term, multi-million dollar treatment facilities to meet numeric effluent limits for dewatering operations.

Another consideration is that because the Division is proposing both concentration-based and load-based limits, a discharger could potentially be required to implement costly treatment in situations where treatment will result in insignificant improvement in instream water quality (e.g., is a $17 million investment appropriate for a 0.1 µg/L improvement in stream water quality?). Although application of assimilative capacity concepts may help to dampen this effect for certain locations; multiple dischargers will likely be affected by discharges to segments where there is no assimilative capacity available. In such cases, dischargers could be held to treatment requirements where multi-million dollar investments are required, yet the instream water quality improves by a negligible (e.g., de minimus, statistically insignificant) amount and the stream standard is still exceeded.

Table 1. Highlights of Various Selenium Removal Technologies (Information Source: CH2M HILL 2010)

Treatment Type	**Design Flow** (MGD)	**Capita Cost** (Million $)	**Annual O & M Costs** (Million $)	**Comments**
ABMet® Bioreactor	1	30	3	Flow equalization/diversion required as part of treatment train. Large footprint required. Wasted biomass residuals contain elemental Se which may be hazardous. Biological residuals need to be thickened and dewatered for landfill disposal.
Reverse Osmosis	1	40	3	Flow equalization/diversion required as part of treatment train. Requirements for pretreatment and chemical addition. Frequent membrane monitoring and maintenance. Requires treatment and disposal of brine. Permeate stream will require treatment prior to discharge to receiving waters to meet toxicity test. Operational issues with very low and high temperatures.
Ferrihydrite Absorption or Iron Co-Precipitation (Two-step absorption process)	1	11	4	Flow equalization/diversion required as part of treatment train. Produces relatively large quantities of sludge that may need to be disposed of as a hazardous waste.
Ferrous Hydroxide (Two-step redox and physical absorption process)	0.432 (300 gpm)	15	1.5-2	Similar issues as ferrihydrite absorption or iron co-precipitation.
Constructed Wetlands	1	17	0.15	Flow equalization/diversion required as part of treatment train. Large flat footprint required. Performance is affected by temperature. Se removal is greater in the summer months. Monitoring may be required to assess ecological risk from bioaccumulation of Se. Potential groundwater contamination.

Passive Biochemical Reactor	0.03	0.2	$0.95 per 1000 gal	Large foot print required. Organic substrate degrades over time and may need replacement.

Table Footnotes: *Table excludes pilot-scale examples and evaporation-based treatment approaches. Costs estimated summarized by CH2MHill (2010) are defined by the American Association of Cost Engineers International as Class 5 with an accuracy of +100% and -50%. Estimates are based solely on the information available at the time of the report. Actual final costs will depend on the actual labor and material costs, competitive market conditions, location and site conditions, final project scope, implementation schedule, and other variable factors. As a result, actual cost will vary from these estimates. Costs considered direct and indirect costs. Direct costs included equipment, delivery, taxes, and installation costs. Indirect costs included engineering, construction, contingency for undefined items, escalation, permitting, startup and commissioning costs.*

In addition to the research in the CH2M Hill (2010) review, the Selenium Task Force sponsored a pilot project conducted by Mesa State College (now Colorado Mesa University) to evaluate performance of a bioreactor treatment approach. Although the pilot scale monitoring showed reductions in selenium, the technology is not viable for the sand and gravel industry due to the space requirements associated with a full-scale system for discharge rates associated with dewatering activities. Preliminary test results indicated that a residence time of 12 hours would be required to effectively remove selenium to levels below the proposed TMDL. Based on the flow rates used for the bench scale test, it is impractical to scale up the bioreactor to treat discharges from gravel pits. For example, at the Anderson Pit the design capacity for discharge as permitted by the CDPHE would require a bioreactor 10 feet by 10 feet and 1.7 miles long. This treatment option is prohibitively expensive, and the generated waste would have to be disposed of in a landfill. Even with this treatment, the United Companies estimates that the expected improvement in instream water quality would be on the order of less 0.1 µg/L (from January 15, 2010 letter from Oldcastle to Mr. Steve Gunderson, Water Quality Control Division Regarding Oldcastle Group SW, Inc. Objection to the Proposed TMDL for Selenium).

Division Response

No changes have been made to the permit in response to this comment. In general, see the discussion in the fact sheet that addresses cost benefit analyses for development of permit terms and conditions, and State law requirements to consider cost-benefit analysis (Comment ID: COG50-4.8), above.

Implementation of the TMDL does not mandate that a sand and gravel operator install selenium treatment technology. Under the TMDL, sand and gravel operators along segments of the Gunnison River and its tributaries may not necessarily need to perform treatment for selenium. Many stretches of these water bodies have some assimilative capacity for selenium during certain points of the year. Sand and gravel operators may be able to discharge water without treatment if it is discharged seasonally when the stream has some assimilative capacity available. This flexibility in the TMDL implementation has been discussed with dischargers and will be included in the permit certifications for those facilities.

The summary of available selenium treatment technologies is helpful, but may not be up-to-date. Requirements to treat selenium below 5 ug/L are being implemented at least three different facilities are for substantially lower costs than those included in the CH2MHill report cited by the commenter. For example, in NPDES Permit No. R2-2014-0010 the Lehigh Permanente limestone quarry and cement manufacturing facility is being required to treat for selenium to at a permit limit of 4.1 ug/L. This facility discharges water to Permanente Creek, which is on the 303(d) list for selenium. Untreated selenium discharges associated with mine dewatering from the facility contained selenium at levels up to 75 ug/L. The San Francisco Bay Water Quality Control Board has issued a three year time schedule order to come in to compliance with the selenium effluent limits, but will require compliance with the 4.1 ug/L limit in February, 2017.

Again, the Division does not necessarily believe that selenium treatment will be required to comply with the TMDL. However, the Division believes that there are other treatment technologies beyond those submitted by the commenter that should be considered in determining the feasibility and potential water quality improvement that could be achieved through selenium treatment.

Comment ID: COG50-12.6
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Discharger Specific Variances

In 2012, the Commission adopted provisions for discharger-specific variances into Regulation 31. WWE believes that the conditions described above could potentially qualify sand and gravel dewatering operations to be considered by the Division for discharger-specific variances. WWE recommends that provisions for discharger specific variances be recognized in the final permit language. Further discussion of conditions where discharger-specific variances would be allowed in the context of sand and gravel dewatering operations would be an important topic of discussion at the July 2014 meeting being organized by the Division.

Division Response
The renewal permit provides for flexibility for applying, or not applying, water quality standards consistent with the Water Quality Control Commission (WQCC) direction, including discharger specific variances. Discharger specific variance and site-specific standards are WQCC actions.

No changes were made to the permit as a result of this comment.

Comment ID: COG50-12.7
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Pollutant Trading

In keeping with the load-based concepts in the TMDL, one potential approach to increase flexibility for permitted dischargers would be to allow pollutant load trading among multiple permits under the control of a single operator, as well as among multiple operators. A current constraint of this strategy is the Division's currently proposed draft permit language that requires both concentration and load based limits. If dischargers will be held to a numeric limit of 4.6 µg/L, then pollutant trading will not provide substantial relief to operators. However, additional language outlining how pollutant trading could be incorporated into the permit would be helpful, if flexibility regarding selenium concentrations in discharges is allowed. This topic could be discussed further during the July meeting.

Division Response
The Division agrees that one potential approach to increase flexibility for permitted discharges would be pollutant trading. The Division has extensive guidance on how trades can be incorporated into permits in the Colorado Pollutant Trading Policy (WQCD, October 2004). Specific language on how to set pollutant trading is not needed in the general permit as trading must be done on a facility specific basis and a specific trade has not been proposed at this time.

No changes have been made to the permit in response to this comment

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Comment ID: COG50-12.8
Author Name: Jane Clary and Peter Foster
Organization: Wright Water Engineers, Inc. (at the request of the Colorado Stone, Sand and Gravel Association)

Conclusion and Suggested Alternative Approach

Based on the factors considered above, WWE recommends that additional consideration be given to an alternative approach to numeric effluent limits for selenium for process water discharges from sand and gravel operations. Based on available information, WWE's opinion is that the current approach to the general permit will likely not have a significant positive impact on instream water quality for selenium, but will have a significant negative impact on the economic viability of the sand and gravel industry in areas with Mancos shale.

Alternatives to numeric effluent limits for selenium in the proposed permit could include the following:

1. Delay implementation of numeric effluent limits in the general permit in the Gunnison TMDL affected segments to allow additional data collection and hydrogeologic calculations that quantify representative ranges of conditions showing: 1) the selenium load contribution delivered in the absence of gravel permits and 2) the selenium contribution delivered during typical sand and gravel operations. If the conditions of such a study were mutually agreed upon by the Division and affected permittees, then a scientifically based resolution to differing viewpoints could be implemented in the next permit cycle.

2. If option 1 is not viable on an industry-wide basis in the Gunnison TMDL basin, then the discharge permit could include specific provisions for discharger specific variances or require the discharger to demonstrate on a site-specific basis that their operations are not significantly adversely influencing instream water quality, considering factors such as expected natural loading, upstream selenium concentrations, and other factors. For example, influent groundwater and pit dewatering samples at the point of discharge could be collected in conjunction with hydrologic monitoring and hdyrogeologic characterization to develop an estimate of loading with and without gravel operations. This information could be used to help demonstrate that loading beyond the natural (existing) rate is not occurring as a result of their operations, thereby enabling a variance (waiver) for additional treatment requirements.

Division Response

The Division has considered the two alternative approaches to numeric effluent limits for selenium. Further delay of the implementation of numeric effluent limits (including WLAs) for facilities discharging to TMDL is not warranted. The TMDL was first contemplated beginning in 2006, and was approved in 2011. The TMDL is approved, and must be implemented. Note that compliance schedules for facilities not able to meet the WLAs and associated WQBELs for selenium will be included in the permit certifications.

Discharger specific variances and site-specific standards are WQCC actions. Please see Comment ID: COG50-12.6.

No changes were made to the permit.

Comment ID: COG50-4.4
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association

We understand that Fact Sheet page 25, section B-4, subsection a, acknowledges that TMDL's are based on current design flow of the facility and not historic flows. How are the TMDL's calculated regarding concentration based limitations that incorporate dilution on a monthly basis?

Division Response

First, to clarify how the division intends to implement mass-based WLAs as provided in the TMDL, the fact sheet was modified to indicate that for existing sand and gravel dischargers, implementation of the mass-based WLA for specific dischargers may be based on, or adjusted from, the design flow of the facility at the time of the TMDL, and/or the presence or absence of other sand and gravel dischargers on the segment since the development of the TMDL.

With respect to monthly concentration-based limitations, the division intends to calculate these limitations using 1) monthly in-stream upstream background data as provided in the TMDL, 2) the monthly low flows listed in the TMDL to determine the monthly assimilative capacity of the receiving streams for selenium (where available), and 3) the combined effluent flow from the existing facilities identified in the TMDL that discharge to a stream segment with a WLA. The Division's standard analysis for metals such as selenium is to use a mass-balance equation that accounts for the 1) upstream concentration of a pollutant at the existing quality, 2) critical low flow (minimal dilution), 3) effluent flow (in this specific case, the effluent flow from all existing facilities identified in the TMDL that discharge to a stream segment with a WLA), and 4) the water quality standard. The mass-balance equation is expressed as:

$$M_2 = \frac{M_3 Q_3 - M_1 Q_1}{Q_2}$$

Where,

Q_1 = Upstream low flow as calculated in the TMDL
Q_2 = Combined facility design capacity (30 day limit) as specified in the application or application supplement by the permittee for a given segment
Q_3 = Downstream flow ($Q_1 + Q_2$)
M_1 = In-stream background pollutant concentrations at the existing quality as calculated in the TMDL
M_2 = Calculated concentration based limit (Water Quality Based Effluent Limit, or WQBEL)
M_3 = Water Quality Standard (4.6 µg/l chronic; 18.4 µg/l acute)

Monthly concentration based selenium limits will be applied where there is reasonable potential for each facility assigned a WLA. To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with Division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the Division's guidance prescribes the use of best professional judgment.

For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established. Where there is no RP, no concentration based effluent limit is included. However, the division has prescribed ongoing monitoring to inform future RP analyses and TMDL implementation.

The Division will include site-specific information regarding calculation of the concentration-based limitations, reasonable potential analysis, and mass-based waste load allocations in certifications for facilities subject to the selenium TMDL for the Gunnison basin.

No changes were made to the permit in response to this comment.

Comment ID: COG50-10.1
Author Name: Zane Luttrell
Organization: Rocky Mountain Aggregate & Construction

Rocky Mountain Aggregate & Construction completely supports the CSSGA's comments in the letter below. Our aggregate reserves are located in the Gunnison, Uncompaghre and Colorado River drainages. Most of the available construction material in these drainages are located near the river. The selenium discharge requirements are not practical and are unattainable for existing and new operations. Please consider the comments below and feel free to contact me with any questions or ideas.

Division Response
No changes have been made to the permit in response to this comment.
Please see responses to the Colorado Stone Sand and Gravel Association's comments (Comment ID: COG50-4.1, 4.2, 4.3, etc) as referenced in the comment.

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2. <u>Stormwater Discharge Effluent Limitations</u>

a. Practice Based Effluent Limitations

Comment ID: COG50-8.3
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.C.2.a.iv.c of the draft permit states: *Permittees must implement control measures (secondary containment or equivalent protection) for bulk storage of petroleum products and any other chemicals located at the facility to contain all spills and prevent spilled material from entering state waters.*

Holcim suggests that the draft permit reference those requirements found in the Federal SPCC regulations instead of making the general statement for "bulk storage of petroleum products and any other chemicals".

Division Response
The intent of this permit provision is to ensure that permittees recognize that adequate secondary containment (or equivalent) is required for any chemicals stored at the facility. The division clarified the referenced sentence in Part I.C.2.a.iv.c) of the permit as provided below.

Permittees must implement control measures (secondary containment or equivalent protection) for any chemical (e.g., petroleum products, pesticides, magnesium chloride, treatment chemicals, etc.) located at the facility, to contain all spills and prevent spilled material from entering state waters.

Comment ID: COG50-5.5
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

The requirement to stabilize exposed areas is not practical for many surface mining activities, particularly sand and gravel facilities: mining, by definition, includes creating exposed areas. The word contain in the draft permit indicates that all water must be contained and not allowed to discharge off-site.

Suggested Permit Modification:
The permittee must stabilize exposed areas and control runoff using structural and/or non-structural measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, unless infeasible.

Alternatively, we request the Division include guidance (in the permit or fact sheet) regarding best practices for stabilizing exposed areas at mining sites. Perhaps active mine areas, haul roads, and other intrinsic features of a mine could be excluded from the permit's definition of *exposed areas*.

Division Response
The Division appreciates the alternate permit language suggested by the commenter. It is important to clarify that the stormwater provisions contained in the permit do not apply to areas of the facility that drain to the mine pit, as any water (including groundwater and stormwater) discharged from the pit (mine dewatering) is considered process water (please see response to Comment ID: COG50-2.2, and response to Comment ID: COG50-5.4). Therefore, stormwater discharges from exposed areas that drain to the mine pit are not subject to the stormwater provisions in the permit.

However, the stormwater provisions do apply to areas of the facility that do not drain to the mine pit, which can include haul roads, lay down and storage areas, and other disturbed areas at the mining facility. Therefore, the requirement to stabilize exposed areas does apply to these areas.

The division agrees that the term 'contain' could be interpreted to mean that the permittee must retain stormwater at the facility. Therefore, the division changed the word 'contain' to 'manage' in the permit (Part I.C.2.a.v), to be consistent with language used in the Practice-based Effluent Limitation (PBEL) at Part I.C.2.a.vi (Management of Runoff). The division does not agree that adding 'unless infeasible' at the end of the requirement is appropriate, as it is the division's expectation that the permittee manage erosion and sediment transport for those areas of the facility that do not drain to the mine pit.

Many resources are available to guide the permittee in selecting appropriate control measures to meet this PBEL, for example, those provided in the division's guidance for the construction industry (www.coloradowaterpermits.com – see Stormwater management plan guidance-construction); EPA's website for the construction industry (National Menu of BMPs) and Industrial Stormwater Fact Sheet Series (see Sector J: Mineral Mining and Processing Facilities); and BLM's Gold Book.

Comment ID: COG50-8.4
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.C.2.a.ix of the draft permit states: *The permittee must eliminate non-stormwater discharges not authorized by this permit, or conducted in accordance with a Division Low Risk Guidance document.*

The statement should be changed to reflect other discharge permits that may contain allowable discharges of non-stormwater (i.e. quarry dewatering). Holcim suggests that the statement be changed to "The permittee must eliminate non-stormwater discharges not authorized by this permit, another permit issued by the Division, or conducted in accordance with a Division Low Risk Guidance document".

Division Response

The Division agrees with the suggested modification and changed Part I.C.2.a.ix of the permit accordingly. The permit language now reads "The permittee must eliminate non-stormwater discharges not authorized by this or any other CDPS permit, or conducted in accordance with a Division Low Risk Guidance document".

D. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

1. WET Test Requirements

Comment ID: COG50-3.9
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Process Water Requirements: WET Testing: Although the fact sheet states that the Division anticipates that the majority of discharges from sand and gravel facilities will not require WET testing, but that requirements may be imposed on a case-by-case basis. First, CMA appreciates that the WQCD's recognition that stormwater runoff generally does not contain any toxic pollutants. The WQCD goes on to reserve the right to impose WET testing requirements. Instead, WET testing should not be listed in the permit requirements, but can be categorized within the "other pollutants of concern". Second, remember that the majority of these facilities are not discharging continuously and many only discharge in response to large runoff events. In these cases, the conditions that chronic WET tests are based on do not exist in the environment, and instead only acute limits should be applied. Therefore, in the few cases that may warrant WET testing, the acute and chronic testing conditions and their applicability to the operation should be considered.

Division Response

For clarity, the fact sheet does not state that stormwater runoff generally does not contain any toxic pollutants. The fact sheet acknowledges that while the majority of discharges from sand and gravel facilities will likely not require WET testing, the permit contains provisions to add WET monitoring requirements for those discharges that may exhibit whole effluent toxicity, based on the potential pollutant concentrations in the discharge (e.g., chemical additive use, or treatment or production processes that add pollutants to the discharge), and that the division will address those discharges on a case-by-case basis. This is consistent with the terms and conditions in the current general permit. Due to the complexity of WET limitations and requirements as compared to other pollutants of concern (such as metals), the division will continue to list WET in the permit requirements under the "Site Specific Requirements" for process water, which is also consistent with the current general permit. This is also consistent with the convention of other general permits.

The permit allows the division to apply acute and/or chronic testing, and the division applies these requirements consistent with the Division WET policy (Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010)). The division will consider the definition of intermittent discharge provided in this policy as part of the decision-making process for requiring acute vs. chronic testing. The WET policy states that a discharge is intermittent if one of the following conditions applies: 1) the maximum discharge frequency is less than 3 consecutive days (72 hours), and less than 3 days per 7 day period, and less than 10 days total per month; or 2) the maximum discharge frequency is less than 5 consecutive days (120 hours) and less than 5 total days per month; or 3) it can be shown that discharge frequency and duration is tied solely to precipitation events, where the discharge starts and stops shortly after the precipitation event starts/stops.

No changes were made to the permit in response to this comment.

F. REPORTING AND RECORDKEEPING

1. Routine Reporting of data – DMRs

Comment ID: COG50-0.3
Division Initiated Change to the Permit
Organization: Water Quality Control Division

- As directed by the Division, the permittee may be required to report the data gathered in compliance with Parts I.C on a **monthly** basis for those facilities subject to a WLA and associated concentration based WQBEL in the permit certification; reporting shall be a on a **quarterly** basis for all other facilities. Reporting of all data shall comply with the requirements of Part I.E. (General Monitoring and Sampling Requirements) and Part I.F. (Reporting and Recordkeeping) of this permit.

- For consistency across CDPS permits, the division changed Part I.F.1 of the permit to include requirements regarding EPA's NetDMR submittal, and associated time frames, as follows:

  Starting on December 21, 2016, the permittee must electronically report DMRs by using the EPA's Net-DMR service unless a waiver is granted in compliance with 40 CFR 127.

  If submitted on paper, the data must be reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1). The permittee must submit these forms by mail. The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

  Colorado Department of Public Health and Environment
  Water Quality Control Division
  WQCD-P-B2
  4300 Cherry Creek Drive South
  Denver, Colorado 80246-1530

  For both electronic and paper reporting the data must be received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

  The Discharge Monitoring Report paper and electronic forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.F.4.

H. GENERAL MONITORING REQUIREMENTS - Stormwater Only

Comment ID: COG50-5.6
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

No exceptions or discussion are provided for facilities undergoing reclamation. In the previous COR340000 permit (Part I.B.5.f), several exceptions to inspection frequency were provided. We believe similar exceptions should be maintained for sites (and portions of sites) that have been seeded and are simply awaiting re-growth of vegetation (similar to reduced inspection frequency in the Construction Stormwater Discharge Permit), due to the fact that vegetative growth can take several years and frequent inspections will likely document "same conditions as last inspection". We recommend language similar to the COR030000 permit be added to this draft, such as:

Monitoring Exceptions at Facilities and Portions of Facilities Undergoing Reclamation
The requirement that permittees conduct and document visual assessments or water quality standards monitoring of stormwater discharges does not apply at facilities or portions of facilities that are undergoing reclamation but final stabilization has not been achieved due to a vegetative cover that has not become established. This exception *only* applies if:

i. all mining / processing activities that will result in surface ground disturbance in at the facility of portion of the facility are permanently completed or have ceased temporarily;
ii. all activities required for final stabilization at the facility or portion of the facility, in accordance with the SWMP and/or mine reclamation plan, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
iii. the SWMP has been amended to indicate those areas at which this exception applies.

Division Response

The division appreciates the additional permit language suggested by the commenter. The division agrees that the pollutant potential and potential for control measure failure is significantly reduced at facilities (or portions of facilities) where all industrial activities are temporarily or permanently complete and the permittee has implemented all final stabilization measures to reclaim the facility, or where final stabilization has been achieved.

Based on this reduced pollutant potential, the division agrees that it is appropriate to reduce the permittee's sampling/reporting burden by providing an exception to the requirement to conduct visual monitoring, benchmark sampling, or water quality standards monitoring in the permit. Therefore, the division added a new monitoring exception, which is only applicable to stormwater discharges (not process water discharges, including mine dewatering), at Part I.H.8 of the permit, as follows:

Monitoring Exceptions for Completed and Finally Stabilized Areas

The requirement that permittees conduct and document visual monitoring, benchmark sampling, or water quality standards monitoring of stormwater discharges does not apply at completed facilities, completed portions of facilities, or finally stabilized portions of facilities that meet all of the following conditions:

a. All industrial activities (such as mining, processing, batch plant activities, other land disturbing activities, fueling, loading/unloading etc.) are **temporarily** or **permanently** complete in the specified area, where temporarily complete means that such industrial activities are not currently conducted at the facility, but may recommence in the future; and

b. The permittee has implemented **all** final stabilization measures (with or without seeding) to enable the specified area to attain final stabilization, **or** the specified area has attained final stabilization consistent with Part.I.A.7.a or b of the permit; and

c. All final stabilization measures are selected, designed, installed, implemented and maintained in accordance with good engineering hydrologic and pollution control practices such that they effectively reduce pollutant potential and the potential for control measure failure for the designated area; and

d. The permittee amended the SWMP to identify those areas for which this exception applies, including the date the areas met the exception conditions.

Stormwater discharges from portions of facilities that are permanently stabilized (i.e., meet the termination criteria at Part I.A. 7.b of the permit, or have obtained an Acreage (or partial) Release from the DRMS for that portion of the facility) no longer require CDPS permit coverage, as the discharge no longer meets the definition of " stormwater discharges associated with industrial activity" pursuant to Regulation 61.3(2). In such cases, the permittee may request that the division reduce the facility permit boundary by the relevant portion of the facility.

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2. Detained stormwater

Comment ID: COG50-8.5
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.H.2 of the draft permit states: *"In the event storm water is detained at the facility but not within the mining excavation (such as in a detention pond/area), the permittee must conduct all required monitoring on discharge from such detention areas, whether the discharge results from a rain or snowmelt event, or from the manual release of accumulated stormwater from the detention area".*

The statement should be changed to reflect the fact that the required monitoring should be conducted from discharges from detention pond/areas only when the discharge results in a discharge from the site. If there is a discharge from a detention area, but it does not result in a discharge from the site, no monitoring should be required.

Division Response
The division agrees with the suggested modification. The division modified the provision in Part I.H.2 of the permit as follows:

a. Delayed release of stormwater: In the event stormwater is detained at the facility (such as in a detention pond/area), and discharges or is manually released at a later date, the permittee must conduct all required monitoring at the time of release, and record Storm Event information (see Part I.H.3, below) for the previous measureable storm event.

This requirement only pertains to those discharges that result in an actual discharge from the facility, or to a state surface water within the facility permit boundary. Discharges from the mining pit are not covered by this provision.

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4. Sample Type and Requirements

Comment ID: COG50-8.6
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.H.5.b of the draft permit states: *"Permittees must take a minimum of one grab sample from a discharge resulting from a measurable storm event".*

What are the Divisions expectations for collecting grab samples from measurable storm events that occur after hours or when the facility is not staffed (i.e. during the weekend)?

Division Response
For clarity, the permit (Part I.H.4.c) specifies that the permittee must collect grab sample during the first 30 minutes of the discharge, except for snowmelt monitoring, which has no 30-minute requirement. The permit further indicates that if the collection of a grab sample during the first 30 minutes is not possible, a grab sample can be taken as soon as practicable after the first 30 minutes, but the permittee must document and keep with the SWMP an explanation of why a grab sample during the first 30 minutes was not possible.

Not all measurable storm events occur outside of normal business hours. Given that only one storm event must be sampled per quarter, the division expects that permittees will be able to comply with this permit provision. The division recommends obtaining samples as early in the monitoring period as possible to increase the likelihood of obtaining samples during a storm event when staff is available.

The division does recognize the challenge in obtaining samples at locations with limited staffing. The flexibility in obtaining samples following the initial 30-minutes of the discharge is partially intended to assist in this effort. Other recommended strategies include targeting more predictable snowmelt events and when seasonally applicable, targeting monsoon or seasonally more likely rain showers, and using publicly available resources for storm tracking (e.g., weather radar). While the permit does not require an automated sampler, this may be a solution for a facility with limited staffing.

No changes were made to the permit in response to this comment.

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7. Monitoring Exceptions for Inactive and Unstaffed Sites

Comment ID: COG50-8.7
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.H.8 of the draft permit states: *"The requirement that permittees conduct and document visual assessments or water quality standards monitoring of storm water discharges does not apply at inactive and unstaffed sites".*

What is the Division's definition of "inactive and unstaffed"? Holcim staffs Coaldale Gypsum Mine for a few weeks each year during active mining campaigns. Once the mining campaign has been completed, the product is stockpiled for use throughout the year. A 3rd party contractor hauls the product from the mine and may only be present at the mine a few times each day.

Certainly during the active mining campaigns the definition of "inactive and unstaffed" will not be satisfied. However, can the definition be met after the active mining campaigns are complete? No Holcim staff are present and the only people that regularly visit the mine are the 3rd party contractors which are there a few times each day during loading operations. The closest Holcim personnel will be located at the Portland Plant, which is approximately one hour away.

Division Response
The division provided clarification for the term "inactive" at Comment ID: COG50-5.7. Facilities where industrial activities related to mining are conducted on a daily basis (i.e., hauling of material) are not considered inactive, and as such, the Monitoring Exceptions for Inactive and Unstaffed Sites do not apply.

No changes were made to the permit in response to this comment.

Comment ID: COG50-5.7
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

Visual monitoring was eliminated for Unstaffed and Inactive facilities, but this does not account for many facilities that operate intermittently (see Division of Reclamation, Mining, and Safety (DRMS) permit) or seasonally, or for active facilities that typically do not have stationed staff present (trucks loading in / out occurs frequently, but "permanent" staff may only be present occasionally). The Division also did not address remote locations, as the draft Fact Sheet indicated was a concern of many current permittees. For Intermittently and seasonally operating facilities (as defined by DRMS), and Remote facilities with intermittent site staffing, we believe requiring visual monitoring will present just as much burden as for unstaffed and inactive facilities. We recommend the exceptions described in section H.8. should be extended to intermittently operated, seasonally operated, and remote facilities with intermittent site staffing, as well.

Division Response
The division agrees that the visual, benchmark, and water quality standard monitoring exception can be extended to some facilities that are not permanently unstaffed and inactive, but that are similar in concept and that meet specific criteria. Pertinent to the division's response is text from Regulation 61.3(2)(e)(iii)(C) – the Stormwater applicability section as follows:

'Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) **including active or inactive mining operations** (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11 (l) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 16, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (**inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator, inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim**);' (emphasis added).

The definition of 'inactive mining operations' is broad. For permit COG500000, the division concluded that this term includes the following types of facilities that have an identifiable owner/operator:

- a facility where mineral mining and/or milling occurred in the past, but is not covered by an active mining permit issued by DRMS;
- a facility where operations are limited seasonally (i.e., intermittent operations), consistent with DRMS requirements for notification, only during the portion of the year when the facility is not active; and
- a facility that ceases operations for 180-days or more for reasons not associated with intermittent status and still has reserves (consistent with temporary cessation status as defined by DRMS), only during the time period the facility is not active.
- a facility where exploration or extraction activities have ceased permanently.

For the Monitoring Exceptions for Inactive and Unstaffed Sites to apply, the facility must be inactive and unstaffed. Therefore, facilities that fall under the definition of inactive (as described above) but are staffed, **do not** qualify for the exception.

Remote facilities that are also **inactive and unstaffed** would qualify for the Monitoring Exceptions for Inactive and Unstaffed Sites. As provided in the permit, once the facility becomes active and/or staffed, the exception no longer applies. The division added a definition to the permit (Appendix C) to clarify the meaning of 'inactive' for this permit, and made minor editorial revisions to the Monitoring Exceptions for Inactive and Unstaffed Sites provision for clarity.

In addition, remote facilities that meet the criteria for the Monitoring Exceptions for Completed and Finally Stabilized Areas also have reduced monitoring requirements (see Comment ID: COG50-5.6).

Comment ID: COG50-5.8
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

A presence of staff can decrease the risk of stormwater pollution (more people to notice when a condition of no exposure is not being met), so maintaining an unstaffed site should not be necessary to be eligible for this exemption. Additionally, an active site may be able to maintain a condition of no exposure just as well as an inactive site, but the permittee may still desire to maintain permit coverage (rather than submitting a no-exposure certification and terminating permit coverage).

Allowing portions of sites, rather than the entire site, to fall under this exemption encourages permittees to stabilize more area at their site and eliminate the chance for stormwater pollution from those portions.

Currently, the only way for a staffed and/or active site to demonstrate a condition of no exposure is for the entire facility to maintain the condition of no exposure, and face penalties (i.e. discharge without a permit) if they are found to have made incorrect judgment of the applicability of this condition. If the division would include positive incentives (i.e. less inspections and no visual monitoring) within this permit for facilities or portions of facilities that demonstrate a condition of no exposure (even if they are active or staffed), then permittees could recognize cost avoidance (avoiding time spent inspecting and monitoring) by stabilizing / covering more activities and disturbed areas. We believe this would have a more widespread environmental benefit.

The definition of no exposure should be clarified to include areas that were once mined but have been finally stabilized, since there is no longer a pollutant exposed to stormwater (i.e. disturbance is no longer present). Requiring an entire facility to be fully stabilized, with a formal release from the DRMS, does not encourage quick and partial stabilization of areas of the site where the permittee has temporarily or permanently ceased mining – this permitting approach allows for no reduction in permittee responsibility until the entire mine is closed / reclaimed. Further, if the permittee intends to mine a disturbed area in the future, the area will not be released by the DRMS until all mining has permanently ceased.

Therefore, we believe Part I.H.8 should be re-written as follows:

8. Monitoring Exceptions for Inactive and Unstaffed Sites
The requirement that permittees conduct and document visual assessments of water quality standards monitoring of stormwater discharges does not apply at inactive and unstaffed sites. Additional requirements apply to these facilities: at facilities and portions of sites that do not maintain a condition of no exposure, the permittee must conduct additional facility inspections as required at Part I.J.5 of this permit.

9. Monitoring Exceptions for Facilities and Portions of Facilities that Maintain a Condition of No Exposure
The requirement that permittees conduct and document visual assessments of water quality standards monitoring of stormwater discharges does not apply at facilities or portions of facilities that maintain a condition of no exposure, i.e., there are no industrial materials or activities exposed to stormwater. A condition of exposure may include areas of the site that were previously disturbed but that have now attained final stabilization (as defined in Part I, section A.7.b.iii.), with little evidence of soil erosion or other runoff problem, regardless of whether the DRMS has released the permittee from further responsibility for the facility or these portions of the facility. The conditions below must be met for this exception to apply:

i. the permittee must maintain a statement in the facility SWMP indicating areas of the site in which there are no mining or processing materials or activities exposed to precipitation, in accordance with the substantive requirements in Regulation 61.3(2)(h). The statement must be signed and certified in accordance with Part I.F (Reporting and Recordkeeping).

ii. if conditions change and industrial materials or activities become exposed to stormwater, this exception no longer applies and the permittee must immediately resume quarterly visual assessments or water quality standards sampling at the frequency identified in the permit certification.

Division Response

The comment requests that the definition of "No exposure" be expanded to allow portions of sites, rather than the entire site, to fall under the No Exposure Exclusion, such that the permittee is not required to conduct and document visual assessments or water quality standards monitoring of stormwater discharges for these portions of the site.

The term "No exposure" is defined by regulation, not by the permit. As provided at Regulation 61.3(2)(h)(iii)(B), the conditional exclusion from the requirement for a CDPS permit (No Exposure Exclusion) is available on a facility-wide basis only, not for individual outfalls. In other words, if any industrial activities or materials are or will be exposed to precipitation at the facility, the facility is not eligible for the No Exposure Exclusion. Therefore, the division cannot clarify the definition of "No exposure" to include areas that were once mined but have been finally stabilized, as requested by the commenter.

However, the division agrees that the pollutant potential and potential for control measure failure is significantly reduced at facilities (or portions of facilities) where all industrial activities are temporarily or permanently complete and the permittee has implemented all final stabilization measures to reclaim the facility, **or where final stabilization has been achieved**, as provided in the comment.

Therefore, the division determined it is appropriate to reduce the permittee's sampling/reporting burden for qualifying facilities (or portions of facilities), and added a new monitoring exception for visual monitoring, benchmark sampling, or water quality standards monitoring of stormwater discharges at Part I.H.8 of the permit (Monitoring Exceptions for Completed and Finally Stabilized Areas). The exception is only applicable to stormwater discharges (not process water discharges, including mine dewatering).

Please see Comment ID: COG50-5.6 for the full text of the monitoring exception added to the permit.

Comment ID: COG50-0.4
Division Initiated Change to the Permit
Organization: Water Quality Control Division

The division added new language to the permit (Part I.H.9) that allows the division to revoke any monitoring exception under certain circumstances, as provided below. The new language adds clarity to the permit for the applicability of any monitoring exception.

Revocation of Monitoring Exception

The division retains the authority to revoke any Monitoring Exception identified in this Part where it is determined that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

I. SPECIFIC MONITORING REQUIREMENTS - Stormwater Only

Comment ID: COG50-1.1
Author Name: Brain Bloess
Organization: American Gypsum

The American Gypsum Mine in Eagle County, CO is an active surface mine currently on a BLM lease near the town of Gypsum. The topography of the mine permit area and surrounding land is highly inaccessible in certain areas. Presently there are two outfalls that would require monitoring under the current COG500000 SWMP proposal. These outfalls would undoubtedly be considered, "substantially identical outfalls" as outlined in Part1 Section (H)(1). Monitoring requirements, as proposed in Part 1 Section (1)(1) would require an employee of American Gypsum to visually inspect both outfalls quarterly on a rotating schedule during a measureable storm event equating to a visual inspection of each outfall twice a year.

Our concern with this requirement is for the safety of our employees attempting to collect a sample from one of our outfalls. We have one outfall that is accessible and one that would put our employees in a hazardous situation. American Gypsum is required by federal law to avoid placing our employees in a situation where they are faced with a recognized hazard. Given the terrain, accessing the outfall during a measureable event is a recognized hazard. Modification of the access to this outfall would significant and unreasonable cost to American Gypsum. It is also unlikely that a modification of our mining plan, to such a drastic extent that would be required to access this area, would be approved by the BLM.

Therefore, we request that a section be included allowing exceptions to outfall monitoring when terrain and accessibility present a significant safety risk to employees attempting to perform monitoring.

Division Response

The division recognizes that safety is always a consideration with respect to monitoring process water and stormwater discharges, and addressed this concern under GENERAL MONITORING AND SAMPLING REQUIREMENTS at Part I.E.3 of the permit as provided below. The division modified the permit language to ensure this provision is clearly applicable to both process water and stormwater.

> **Adverse Weather Conditions**
>
> When adverse weather conditions prevent sample collection according to the relevant monitoring schedule, the permittee must take a substitute sample, as possible, during the remaining monitoring period; for stormwater, the permittee must take a substitute sample during the next qualifying storm event. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms.
>
> Adverse weather does not exempt the permittee from having to file timely DMRs. The permittee must report any failure to monitor and indicate the basis for not sampling during the usual reporting period.

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1. Visual Monitoring

Comment ID: COG50-3.10
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Stormwater Requirements: Visual Sampling: While CMA appreciates that WQCD has omitted requirements for benchmark testing of stormwater, CMA questions the utility in visual sampling for many of the same reasons that benchmark testing is inappropriate. The goal of storm water controls in place is to *minimize* potential for pollution from stormwater areas and DRMS regulations are more than adept at accomplishing this. CMA agrees that the effectiveness of stormwater controls does not need to be measured quantitatively through benchmark testing. However, CMA does not agree that visual sampling will provide any additional environmental benefits over the current requirements. Site inspections provide a detailed qualitative evaluation of whether stormwater controls are working and adequate, especially when conducted following storm events. The addition of yet another qualitative comparison through visual sampling is unnecessary. Furthermore, as has been explained in previously submitted comments on the stormwater provisions in the coal and hardrock stormwater permits, it is extremely difficult to collect stormwater samples, considering the dynamic nature of precipitation events and intensity required to cause sheetflow from stormwater areas.

Division Response

The division appreciates that CMA and CSSGA acknowledged that the division reduced permittees sampling burden by not requiring benchmark sampling for stormwater-only discharges from SIC major group 14 industrial activities. The division made this decision only for stormwater discharges from SIC major group 14 industrial activities, and for the two benchmarks identified by EPA for this sector (i.e., Nitrate plus Nitrite Nitrogen and TSS), again differentiating sand and gravel from other extractive sectors, such as coal and metal mining.

As provided in the fact sheet, the division eliminated Nitrate plus Nitrite Nitrogen benchmark sampling since the source of the nitrogen is likely fertilizer used in reclamation efforts, and the permit contains other requirements applicable to this pollutant. The division eliminated TSS benchmark sampling because the permit addresses specific technology-based effluent limitations and other terms and conditions that are directly applicable to this pollutant.

The division disagrees with the comment that visual monitoring is inappropriate and not environmentally beneficial. Visual assessments of stormwater discharges are an inexpensive and valuable part of the stormwater management and planning process. Like benchmark monitoring, visual monitoring is a useful tool for assessing pollutant sources control and control measure effectiveness.

Further, the permit includes general exceptions to stormwater monitoring requirements, that address adverse (e.g., dangerous) weather conditions (see response to Comment ID: COG50-1.1), or climates with irregular stormwater (Part I.H.5). Where these types of conditions prevent a facility from performing the visual monitoring quarterly, permittees have the ability to modify their visual monitoring schedule such that the monitoring is conducted over the course of the year during periods when discharges, from rain or snow, actually occur and can be safely observed.

Lastly, the public notice version of the permit contained flexibility with respect to visual and water quality standards monitoring requirements at inactive and unstaffed facilities. Following public notice, the division added clarity to the permit for the existing visual monitoring exception at inactive and unstaffed facilities by defining the term 'inactive' for this permit (see response to Comment ID: COG50-5.7); and also added exceptions for monitoring (including for visual monitoring) at completed and finally stabilized areas (see response to Comment ID: COG50-5.6 and COG50-5.8).

No additional changes were made to the permit.

Comment ID: COG50-4.12
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Stormwater Requirements: Visual Sampling: CSSGA appreciates that WQCD has omitted requirements for benchmark testing of stormwater, however, CSSGA questions the utility in visual sampling for many of the same reasons that benchmark testing is inappropriate. The goal of stormwater controls in place is to *minimize* potential for pollution from stormwater areas and DRMS regulations are more than adept at accomplishing this. CSSGA agrees that the effectiveness of stormwater controls does not need to be measured quantitatively through benchmark testing. However, CSSGA does not agree that visual sampling will provide any additional environmental benefits over the current requirements. Site inspections provide a detailed qualitative evaluation of whether stormwater controls are working and adequate, especially when conducted following storm events. The addition of yet another qualitative comparison through visual sampling is unnecessary.

Division Response
Please see response to Comment ID: COG50-3.10.

Comment ID: COG50-5.9
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

The following limitations typical of mining facilities in Colorado make visual monitoring during rain / snowmelt events very difficult, unsafe, and/or impractical:

1. Surface mines typically cover large areas of land, with numerous outfalls
2. Outfalls may be large ravines / valleys (unlike discrete pipes or channels at many other industrial facilities), resulting in difficult / long distances traveled on foot to obtain representative samples
3. Many access roads to / through mines are often unpaved and cross uneven terrain
4. Mines are typically in remote locations
5. Sand and gravel mines may be seasonally or sporadically operated / staffed, yet still considered "active"
6. Heavy rainfall and snow-melt conditions may cause mining activity to temporarily cease at surface mines (particularly at municipal sand and gravel facilities), resulting in a lack of staff to perform monitoring
7. Disturbed areas of mines (and likely naturally dry drainage channels) in Colorado are going to have some amount of sediment in a discharge, regardless of the type / number of control measures used. Any sediment observed during visual monitoring of the discharge will require the permittee to perform multiple steps of documentation / corrective action for a potentially insignificant amount of sediment in runoff.
8. Automatic samplers would require significant spending (and power resources are often not nearby at mine outfalls)

We recommend the requirement to perform visual monitoring be removed, or an alternative method be allowed based on permittee's judgment that visual monitoring in impractical (provided a permittee documents in their SWMP why Visual Monitoring is impractical, and describes the alternative procedure to be taken). A couple potential alternatives include:

1. Permittees could observe one runoff event each quarter from a safe distance (e.g. using binoculars), which would be sufficient to notice when significant amounts of pollutants are being discharging off site.
2. Permittees could observe outfalls for signs of erosion or discharged contaminants within 24 hours of one measurable storm event per quarter.

Division Response

The comment outlines site-specific circumstances that make visual monitoring 'difficult, unsafe, and/or impractical'. The permit contains provisions, some of which the division added following review of the response to comments, that address these concerns, as follows:

- Substantially identical outfalls – see provisions at Part I.H.1 of the permit.
- Safety considerations – see provisions at Part I.E.3 of the permit, and response to Comment ID: COG50-1.1.
- Provisions for inactive and unstaffed sites (modified since public notice) – see response to Comment ID: COG50-5.7).
- New monitoring exceptions for Completed and Finally Stabilized Areas – see response to Comment ID: COG50-5.6 and COG50-5.8).

The division appreciates the alternative approaches provided by the commenter, and suggests that the permittee may opt to use these approaches in tandem with the flexibility offered by the permit, as a means of demonstrating the permittee's intent to comply with the permit requirement for visual monitoring. The last two bullets above identify additional flexibility added to the final permit with respect to visual monitoring.

No additional changes were made to the permit.

Comment ID: COG50-8.8
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.H.5.b of the draft permit states: *"Permittees must take a minimum of one grab sample from a discharge resulting from a measurable storm event"*. Part I.I.1 of the draft permit states: *"Once each quarter for the entire permit term, the permittee must collect a storm water sample from each outfall (or a substantially identical outfall pursuant to Part I.H.l above) and conduct a visual assessment of each of these samples".*

Is this the Divisions intention that for permittees subject to only stormwater requirements, that a grab sample be collected in each event in which a discharge occurs, or that a grab sample be collected at least once during the quarter when a discharge occurs?

Division Response

The division intends that, for permittees subject to stormwater-only requirements, permittees collect a grab sample for visual monitoring at least once during each quarter, from a measurable storm event. Part I.H refers to the *general* monitoring requirements for all stormwater discharges. Part I.H.4.b specifies that stormwater samples must be grab samples of discharge resulting from a measurable storm event. Part I.I. refers to the *specific* monitoring requirements for stormwater discharges. Part I.I.1 specifies that visual monitoring samples must be collected at least once per quarter. The division also provides specific monitoring requirements in each facility's certification.

No changes were made to the permit in response to this comment.

Comment ID: COG50-13.3
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Part 3.2.3 [of the MSGP], exceptions to quarterly visual assessments, states "If your facility is located in an area where limited rainfall occurs during many parts of the year (e.g., arid or semi-arid climate) or in an area where freezing conditions exist that

prevent runoff from occurring for extended periods, then your samples for the quarterly visual assessments may be distributed during seasons when precipitation runoff occurs. In areas subject to snow, at least one quarterly visual assessment must capture snowmelt discharge, taking into account the exception described above for climates with irregular stormwater runoff.

Division Response

The division understands the commenter's statement as a request and basis for the flexibility EPA provided in the 2008 MSGP in establishing monitoring frequencies other than quarterly, for facilities located in dry climates. The division already incorporated this flexibility at Part I.H.5 in permit COG500000 of the permit (Climates with Irregular Stormwater Runoff).

No changes were made to the permit in response to this comment.

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3. <u>Water Quality Standards Monitoring</u>

Comment ID: COG50-3.12
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Stormwater Requirements: WQBELs: The factsheet and permit contain a discussion of the application of water quality based effluent limits to stormwater discharges. This requirement appears to be based on an unproven assumption that ambient conditions meet State water quality standards during storm events. The State should first show that stormwater in undisturbed areas is able to meet all water quality standards. It is CMA's belief that many of the standards that are measured in total form will have difficulty meeting State water quality standards during storm events solely because of the amount measured in the suspended sediments. Intense rainfall and snowmelt events erode and entrain soils, which contain regulated metals. In many cases, it is likely that the concentrations exceed State water quality standards. Before creating a compliance issue on a statewide level, the State should consider a regional approach to stormwater sampling and assessment to ensure that all water quality standards are achievable during storm events.

Division Response

The division disagrees with the comment that in order to regulate stormwater point sources, the division must first demonstrate that non-point source stormwater runoff can attain water quality standards. Consistent with the Clean Water Act, the Colorado Water Quality Control Act (CWQCA) requires a permit for the discharge of pollutants from a point source to any state water. Stormwater discharges associated with sand and gravel activities are point sources that require permit coverage. Nonpoint sources are exempt from such permitting but are addressed indirectly through the CWQCA's water quality provisions and TMDL processes to the extent practicable. Control measures to address nonpoint, unregulated sources are voluntary.

In controlling industrial stormwater, the division finds it to be most effective to require technology-based effluent limitations (narrative and numeric), narrative water quality-based effluent limitations, and specific terms for industrial categories such as sand and gravel, and then allow the discharger to implement control measures to meet these limits. The control measures chosen by the discharger should be those designed for the specific characteristics of the site and the receiving water. This narrative approach allows the discharger to determine their own approach for controlling stormwater discharges. Therefore, for this permit, the division decided to require a narrative water quality-based effluent limit requiring discharges to be controlled as necessary to meet water quality standards, and to provide an extra provision that allows the division to require additional requirements should the narrative approach be found not effective in a particular instance.

No changes were made to the permit in response to this comment.

J. FACILITY INSPECTIONS - Stormwater Only

1. <u>Inspection frequency and personnel</u>

Comment ID: COG50-3.11
Author Name: Stuart A. Sanderson
Organization: Colorado Mining Association (endorsed by CSSGA)

Stormwater Requirements: Inspection Requirements: The WQCD has proposed to increase the inspection frequency from semiannually to quarterly at staffed sites (and six per year at unstaffed sites). The WQCD cites deficiencies identified during onsite inspections and the persistence of identified problems from one inspection to the next. It appears that the WQCD may be increasing the requirements for all facilities due to the inappropriate actions of one or two. Many operations make every effort to correct deficiencies as quickly as possible. There is no need to increase the default inspection frequency when the current semiannual requirement may be adequate in many cases. At the very least, semiannual inspections could be kept as an option if the permit writer were to determine from inspection and corrective action records that this is sufficient.

The WQCD has also proposed that one of these inspections be conducted during a storm event. Again, there are many reasons why and situations where it is not safe for personnel to be sampling *during* a storm event. The first and foremost concern of a mining facility, or any industry, is the safety of the workers. For the WQCD to require that a worker compromise their own safety to observe stormwater controls "in action" is unnecessary. Again, storm events leave behind many indicators that can be used to determine control effectiveness.

CMA does support the WQCD's discretion in corrective action requirements following inspections. CMA agrees that corrective actions should be identified, documented, and resolved as soon as practicable. However, the scope, timing, and feasibility of corrective actions are extremely site-specific, and it would not be possible to set a single time limit that could account for all of the situations that will be encountered.

Division Response

The division does not agree that one inspection per quarter (four inspections per year) is an unreasonable permit requirement. This inspection frequency is consistent with other CDPS permits issued by the division e.g., COR900000, placer mine individual permits), and represents the minimum number of inspections that allows the permittee to evaluate field conditions and facility compliance with the permit, seasonally. The division's intent is that the quarterly inspection frequency is a minimum frequency and more frequent inspections may be appropriate in certain instances, such as for facilities with significant activities and materials exposed to stormwater, compliance issues, steep slopes, water crossings, etc .

The division agrees that safety is a consideration with respect to conducting one of the annual quarterly inspections during a runoff event. To that end, the permit specifically identifies that a runoff event for a rain event means during, or within 24 hours after the end of, a measureable storm event; and for a snowmelt event, means at a time when a measurable discharge occurs from the facility. Therefore, the permit does not require that the permittee conduct the runoff event inspection *during* the actual rain event, although if conditions allow (i.e., it is safe to conduct the inspection at this time), an inspection during the event is extremely informative with respect to evaluating control measure selection and adequacy. To conclude, the division fully expects that for at least one run-off event per year, a permittee will be able to safely conduct an inspection.

The division is unclear on the comment that 'CMA does support the WQCD's discretion in corrective action requirements following inspections', as the permit specifies both the scope and timing of the corrective action, and the comment did not suggest an alternate to this approach. Following PN, the division determined it was appropriate to combine the 24-hour and 5-day documentation requirements into one 5-day requirement, thereby streamlining this requirement for the permittee while maintaining the intent and scope of the requirement. For clarity, the revised corrective action section of the permit requires that permittees document specific information of any condition that triggers corrective action within 5 days of discovery, submit the documentation in an annual report to the Division (documentation requirements are specified in the permit), and retain a copy onsite with the facility SWMP. Note that triggering conditions may be discovered at any time, including during an inspection. Further, the permit requires that 'corrective actions associated with maintaining control measures must be conducted with due diligence, as soon as possible after the need is discovered, to achieve the effluent limits required by this permit. The permittee must implement interim control measures to achieve the effluent limits required by this permit while performing maintenance of the primary control measure.'

No changes were made to the permit in response to this comment.

Comment ID: COG50-4.13
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Stormwater Requirements: Inspection Requirements: The WQCD has proposed to increase the inspection frequency from semiannually to quarterly at staffed sites (and six per year at unstaffed sites). The WQCD sites deficiencies identified

during onsite inspections and the persistence of identified problems from one inspection to the next. It appears that the WQCD may be increasing the requirements for all facilities due to the inappropriate actions of one or two. Many operations make every effort to correct deficiencies as quickly as possible. There is no need to increase the default inspection frequency when the current semiannual requirement may be adequate in many cases. At the very least, semiannual inspections could be kept as an option, if the permit writer were to determine from inspection and corrective action records that this is sufficient.

The WQCD has also proposed that one of these inspections be conducted during a storm event. There are many reasons why it is not safe for personnel to be sampling *during* a storm event. The first and foremost concern of a mining facility, or any industry, is the safety of the workers. For the WQCD to require that a worker compromise their own safety to observe stormwater controls "in action" is unnecessary. Again, storm events leave behind many indicators that can be used to determine control effectiveness.

Division Response
Please see response to Comment ID: COG50-3.11.

Comment ID: COG50-5.10
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

For many facilities, the inspection frequency will be dramatically increased (see comparisons of the revised COG500000 permit to the current COR34000 permit below). Is the Division aware of significant non-compliance / pollution of state waters under the current permits, which would justify this dramatic increase of permittee responsibility (up to 18 times as many inspections for some facilities)?

1. Continuously operating facility: COR34000: 2 inspections per year; Draft COG500000: 4 inspections per year *and quarterly visual monitoring*
2. Inactive and Unstaffed facilities: COR34000: 2 inspections per year; Draft COG500000: 6 inspections per year
3. Inactive and Unstaffed facilities (Remote Location): COR34000: 1 inspection every 3 years; Draft COG500000: 6 inspections every year
4. Mines undergoing Reclamation: COR34000: 1 inspection per year; Draft COG500000: 6 inspections per year
5. Mines undergoing Reclamation (Remote facilities): COR34000: 1 inspection every 2 years, Draft COG500000: 6 inspections every year

We understand the revised COG500000 permit is being written similar to the COR900000 permit and the EPA MSGP. However, maintaining some elements from the old COG500000 and COR340000 permits would be appropriate, if they were providing sufficient protection to the environment.

Division Response
Please see responses to Comment ID: COG50-3.11, and Comment ID: COG50-5.11. Also, to complete the list provided in the comment, please note that the final permit contains a decreased inspection frequency for inactive and unstaffed facilities that establish a condition of no exposure, eliminates the runoff event inspection exception at facilities with completed and finally stabilized areas, and requires only four inspections per year instead of the five EPA requires in the 2008 EPA MSGP.

No changes were made to the permit in response to this comment.

Comment ID: COG50-5.11
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

No exceptions or discussion are provided for facilities undergoing reclamation. In the previous COR340000 permit (Part I.B.5.f), several exceptions to inspection frequency were provided for site's undergoing reclamation. We believe a set inspection schedule should be required (i.e. no more frequently for unstaffed and inactive sites) for facilities and portions of facilities undergoing reclamation that have been seeded and are simply awaiting re-growth of vegetation (similar to reduced inspection frequency in the Construction Stormwater Permit), due to the fact that vegetative growth can take several years in Colorado and frequent inspections will likely document "same conditions as last inspection". We recommend language similar to the COR030000 permit be added to this draft, such as:

Inspection Schedule at Facilities and Portions of Facilities Undergoing Reclamation

The permittee shall make a thorough inspection of their stormwater management system at least twice per year, in the spring and fall, at facilities or portions of facilities that are undergoing reclamation but where final stabilization has not been achieved due to a vegetative cover that has not become established. This schedule *only* applies if:

i) all mining / processing activities that will result in surface ground disturbance at the facility or portion of the facility are temporarily or permanently completed;
ii) all activities required for final stabilization at the facility or portion of the facility, in accordance with the SWMP and/or mine reclamation plan, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
iii) the SWMP has been amended to indicate those areas that will be inspected in accordance with the reduced schedule allowed for in this paragraph.

Division Response

The division appreciates the additional permit language suggested by the commenter. The analogy to the Construction Stormwater Permit (COR030000) inspection frequency reduction, however, is not relevant to permit COG500000. The reduction in inspection frequency for 'completed' construction sites certified under permit COR030000 resulted in a monthly inspection frequency. While the division understands the reduced pollutant potential associated with sand and gravel facilities in the reclamation process, the division's intent is that the quarterly inspection frequency is a minimum frequency and that more frequent inspections may be appropriate in certain instances, such as for facilities with significant activities and materials exposed to stormwater, compliance issues, steep slopes, water crossings, etc. (see response to Comment ID: COG50-3.11).

However, consistent with the approach the division took with respect to the exception from the runoff event inspection requirement at inactive and unstaffed sites that meet the condition of no exposure (Part I.J.4 of the permit), the division added an additional exception from the **runoff event inspection** requirement for completed and finally stabilized areas at (Part I.J.5 of the permit), as follows:

Runoff event inspection exception at Completed and Finally Stabilized Areas

The requirement that permittees conduct and document at least one (1) inspection per calendar year during a runoff event, does not apply at completed facilities, completed portions of facilities, or finally stabilized portions of facilities that meet all of the conditions below. Note that all other inspection provisions in this part remain applicable.

a. All industrial activities (such as mining, processing, batch plant activities, other land disturbing activities, fueling, loading/unloading etc.) are **temporarily** or **permanently** complete in the specified area, where temporarily complete means that such industrial activities are not currently conducted at the facility, but may recommence in the future; and

b. The permittee has implemented **all** final stabilization measures (with or without seeding) to enable the specified area to attain final stabilization, **OR** the specified area has attained final stabilization consistent with Part.I.A.7.a or b of the permit; and

c. All final stabilization measures are selected, designed, installed, implemented and maintained in accordance with good engineering hydrologic and pollution control practices such that they effectively reduce pollutant potential and the potential for control measure failure for the designated area; and

d. The permittee amended the SWMP to identify those areas for which this exception applies, including the date the areas met the exception conditions.

Stormwater discharges from portions of facilities that are permanently stabilized (i.e., meet the termination criteria at Part I.A. 7.b of the permit, or have obtained an Acreage (or partial) Release from the DRMS for that portion of the facility) no longer require CDPS permit coverage, as the discharge no longer meets the definition of "stormwater discharges associated with industrial activity" pursuant to Regulation 61.3(2). In such cases, the permittee may request that the division reduce the facility permit boundary by the relevant portion of the facility.

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3. Inspection documentation

Comment ID: COG50-13.5
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Part 3.1.2 of the MSGP addresses routine facility inspection documentation. It does not ask for summary report and schedule of implementation of corrective actions. Instead it simply states that "any corrective action required as a result of a routine facility inspection must be performed consistent with the Corrective Actions section of the permit." Asking for a summary report and schedule of implementation is redundant, burdensome, and does nothing to improve the storm water management process; it is simply an addition of paperwork imposed by CDPHE. The Permit requires immediate action and documentation of corrective measures taken, a summary report and schedule, asked for by CDPHE does nothing to improve on or supplement this requirement.

Division Response

The comment correctly states the 2008 EPA MSGP Routine Facility Inspection Documentation (Section 4.1.2) requirement that any corrective action required as a result of a routine facility inspection must be performed consistent with Part 3 (the Corrective Actions section) of the permit. However, the Corrective Actions section of the 2008 EPA MSGP (Section 3) contains requirements for Corrective Action Reports (Section 3.4) that do require documentation, as provided below. With the exception of the timeline, the requirements of renewal permit COG500000 are identical to those in the 2008 EPA MSGP.

Excerpt 2008 EPA MSGP

3.4 Corrective Action Report

Within 24 hours of discovery of any condition listed in Parts 3.1 and 3.2, you must document the following information (i.e., questions 3-5 of the Corrective Actions section in the Annual Reporting Form, provided in Appendix I):

- Identification of the condition triggering the need for corrective action review;
- Description of the problem identified; and
- Date the problem was identified.

Within 14 days of discovery of any condition listed in Parts 3.1 and 3.2, you must document the following information (i.e., questions 7-11 of the Corrective Actions section in the Annual Reporting Form, provided in Appendix I):

- Summary of corrective action taken or to be taken (or, for triggering events identified in Part 3.2 where you determine that corrective action is not necessary, the basis for this determination);
- Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;
- Date corrective action initiated; and
- Date corrective action completed or expected to be completed.

You must submit this documentation in an annual report as required in Part 7.2 and retain a copy onsite with your SWPPP as required in Part 5.4.

To be clear, permit COG500000 does not require that permittees submit corrective action documentation to the division. Rather, consistent with EPA's approach, the permittee must submit the documentation in an annual report and retain a copy onsite with the facility SWMP.

No changes were made to the permit in response to this comment.

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4. Exception to inspection frequency for inactive and unstaffed sites that meet the condition of no exposure

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Comment ID: COG50-5.12
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

A presence of staff can decrease the risk of stormwater pollution (more people to notice when a condition of no exposure is not being met), so maintaining an unstaffed site should not be necessary to be eligible for this exemption. Additionally, an active site may be able to maintain a condition of no exposure just as well as an inactive site, but the permittee may still desire to maintain permit coverage (rather than submitting a no-exposure certification and terminating permit coverage).

Allowing portions of sites, rather than the entire site, to fall under this exemption encourages permittees to stabilize more area at their site and eliminate the chance for stormwater pollution from those portions. Currently, the only way for a staffed and/or active site to demonstrate a condition of no exposure is for the entire facility to always maintain the condition of no exposure, and face penalties (discharge without a permit) if they are found to have made incorrect judgment of the applicability of this condition. If the division includes positive incentives (i.e. less inspections and no visual monitoring) within this permit for facilities or portions of facilities that demonstrate a condition of no exposure (even if they are active or staffed), then permittees could recognize cost avoidance (avoiding time spent inspecting and monitoring) by stabilizing / covering more activities and disturbed areas. We believe this would have a more widespread environmental benefit.

The definition of no exposure should be clarified to include areas that were once mined but have been finally stabilized, since there is no longer a pollutant exposed to stormwater (i.e. disturbance is no longer present). Requiring an entire facility to be fully stabilized, with a formal release from the DRMS, does not encourage quick and partial stabilization of areas of the site where the permittee has temporarily or permanently ceased mining – this permitting approach allows for no reduction in permittee responsibility until the entire mine is closed / reclaimed. Further, if the permittee intends to mine a disturbed area in the future, the area will not be released by the DRMS until all mining has permanently ceased.

Therefore, we believe Part I.J.4 should be re-written as follows:

4. Exception to inspection frequency for sites or portions of sites that meet the condition of no exposure
The requirement that permittees conduct and document quarterly visual inspections of the facility, and conduct at least one inspection per calendar year during a runoff event, does not apply to facilities or portions of a facility as long as a condition of no exposure exists at the facility or at portions of the facility, i.e., there are no mining or processing materials or activities exposed to stormwater. Instead, permittees are required to conduct two site inspections annually of the areas maintaining a condition of no exposure, in the spring and fall, in accordance with the requirements of this Part.

A condition of exposure may include areas of the site that were previously disturbed but that have now attained final stabilization (as defined in Part I, section A.7.b.iii.), with little evidence of soil erosion or other runoff problem, regardless of whether the DRMS has released the permittee from further responsibility for the facility or portions of the facility.

To invoke this exception, a permittee must maintain a statement in the facility SWMP pursuant to Part I.M.7 indicating areas of the site in which there are no mining or processing materials or activities exposed to precipitation, in accordance with the substantive requirements in Regulation 61.3(2)(h). The statement must be signed and certified in accordance with Part I.F.4 (Reports and Recordkeeping).

If conditions change and mining or processing materials or activities become exposed to stormwater, this exception no longer applies and the permittee must immediately resume quarterly inspections.

Division Response
Please see responses to Comment ID: COG50-5.8 and Comment ID: COG50-5.11.

Comment ID: COG50-13.4
Author Name: Stephanie Fancher
Organization: Loveland Ready Mix Concrete, Inc.

Inactive and unstaffed facilities covered under Sector J (Non-Metallic Mineral Mining and Dressing), are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this exception from quarterly visual assessment, consistent with the requirements established in Part 8.J.8.1.

Division Response
The division understands the commenter's statement as a request and basis for the conditional exemption from the no exposure requirement for quarterly visual assessments at inactive and unstaffed sites, as provided in the EPA 2008 MSGP.

The referenced EPA 2008 MSGP exemption from quarterly visual assessments (i.e., visual monitoring) demonstrates another area where the division deviated from EPA's approach in developing the terms and conditions for renewal permit COG500000 (please see response to Comment ID: COG50-3.3). Instead of adopting EPA's approach, the division required an increased inspection frequency at inactive and unstaffed sites where exposure exists, to provide the level of oversight necessary to address the pollutant sources that remain at such facilities.

Following review of comments received during the public notice period, the division added more flexibility to the permit with respect to exceptions from the requirement to conduct visual, benchmark, and water quality standards monitoring. Please see response to Comment ID: COG50-5.7 (provisions for inactive and unstaffed sites), and Comment ID: COG50-5.6 and Comment ID: COG50-5.8 (new exceptions for monitoring for completed and finally stabilized areas**).**

No additional changes were made to the permit.

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4. <u>Increased inspection frequency for inactive and unstaffed sites that DO NOT meet the condition of no exposure</u>

Comment ID: COG50-5.13
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

In the "Unstaffed and Inactive" increased inspection frequency requirements, the time that must elapse between inspections was increased from 20 days to 40 days, which significantly limits the timeframe during which a permittee may perform an inspection. The increased frequency is 1 inspection every 2 months, or 1 inspection every ~60 days. Requiring 40 days to pass means an average timeframe of only 20 days during which the permittee can perform an inspection. At many remote facilities, this will mean significant scheduling and time-allotment challenges. We believe keeping the 20 day lapse period is sufficient.

Division Response
The division agrees with the suggested modification and modified the permit accordingly (Part I.J.4).

K. CORRECTIVE ACTIONS - Stormwater Only

Comment ID: COG50-4.14
Author Name: Todd R. Ohlheiser
Organization: Colorado Stone, Sand & Gravel Association (supported by Colorado Mining Association; Elam Construction, Inc.; Front Range Aggregates, LLC; Martin Marietta Materials; Rocky Mountain Aggregate & Construction; and Varra Companies Inc.)

Corrective Action Timing: CSSGA does support the WQCD's discretion in corrective action requirements following inspections. CSSGA agrees that corrective actions should be identified, documented, and resolved as soon as practicable. However, the scope, timing, and feasibility of corrective actions are extremely site-specific, and it would not be possible to set a single time limit that could account for all of the situations that will be encountered.

Division Response
Please see response to Comment ID: COG50-3.11

L. GENERAL SWMP REQUIREMENTS - Stormwater Only

Comment ID: COG50-5.1
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

No discussion is included in the draft permit or fact sheet regarding a timeframe / compliance schedule for SWMP updates. We request the division include a compliance schedule of at least 90 days after each facility's certification effective date, for all existing permitted facilities during which SWMPs can be updated. This delay will allow permittees time to thoroughly evaluate existing SWMPs and update based on new SWMP requirements, practice-based requirements, and new sampling / inspection requirements (particularly for permittees that have multiple facilities under this permit).

Division Response
Part I.L. of the permit states that "An existing permittee authorized under the previous versions of this permit shall modify the existing SWMP to comply with the requirements of this permit by January 30, 2015. The division agrees that it is appropriate to associate this requirement with the effective date of the permit certification, rather than a fixed date. Further, the division determined that **180 days** from the effective date of the permit certification is appropriate to allow sufficient time for permittees to complete this requirement, and modified the permit accordingly.

M. SPECIFIC SWMP REQUIREMENTS - Stormwater Only

7. Inspection Procedures and Documentation

Comment ID: COG50-5.14
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

"Permittees that invoke the exception to monthly inspections for inactive and unstaffed facilities…" Should the word monthly be changed to quarterly? Furthermore, the exception is with regards to monitoring, unless a condition of no-exposure can be demonstrated. We recommend this sentence be corrected or removed.

Division Response
The division agrees that the word **monthly** is incorrect, and changed the word to **quarterly** in the permit (Part I.M.7).

The permit contains exceptions for both monitoring and inspections – the exception at Part I.M.7 of the permit is pertinent to inspections.

Comment ID: COG50-8.9
Author Name: Justin Andrews
Organization: Holcim (US) Inc.

Part I.M.7.c of the draft permit states: *"Permittees that invoke the exception to monthly inspections for inactive and unstaffed facilities must include in the SWMP the sign and certified documentation to support this claim as required Part I.J (Inspections)".*

Part I.J.4 of the draft permit states that for facilities that are inactive and unstaffed, and a condition of no exposure exists, the facility must conduct two facility inspections, one in the spring and one in the fall.

Part I.J.4 of the draft permit also states that facilities that are inactive and unstaffed, but a condition of no exposure does not exist, facilities are required to conduct six site inspections annually.

There is no mention of monthly inspections in Part I.J of the draft permit.

Division Response
Please see response to Comment ID: COG50-5.14

APPENDIX C - Definitions

Comment ID: COG50-5.15
Author Name: Scott Schnake
Organization: Colorado Springs Utilities

The definitions for unstaffed, remote (fact sheet page 5), and inactive facilities are not included in the permit's definitions section. We also recommend a definition for intermittent operation be added, as a reference to the DMRS definition of Intermittent Operations for mining activity (references C.R.S 34-32.5- 103(11)(b)).

Division Response

The general meaning of the word "unstaffed" is "without staff, or workers". In permit COG500000, the term "unstaffed" is used together with "inactive" to document conditions that qualify a facility for various monitoring exceptions and alternate inspection requirements. For these exceptions/alternate requirements to apply, the facility must be both inactive and unstaffed. The presence of staff at the facility to conduct required facility inspections does not change the inactive and unstaffed status of the facility; however, if staff or workers are present at the facility for other activities, the facility does not qualify as "unstaffed", and exceptions/alternate requirements do not apply. The division added clarification to the permit to address this comment (see Part I.H.7 and Part I.J.4).

The term "remote" was included in the factsheet because it was used in a stakeholder comment. The permit includes exceptions for facilities that are inactive and unstaffed, but does not use the term remote. Remote facilities that are inactive and unstaffed are eligible for the exceptions. As provided in the permit, once a facility becomes active and/or staffed, the exception no longer applies. No changes were made to the permit in response to this comment.

The division provided clarification for the term "inactive" at Comment ID: COG50-5.7 and modified the permit accordingly (Appendix C). In the division's response to this comment, the division acknowledges facilities where operations are limited seasonally (i.e., intermittent operations), however, because this is a definition in DRMS regulations, the division concluded it is not necessary to repeat it here.