

REPORT

Stormwater Pollution Control Plan

Grassy Mountain Mine

Malheur County, Oregon

Submitted to:

Calico Resources USA Corp.

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Winnemucca, Nevada 89445

Submitted by:

WSP USA Inc.

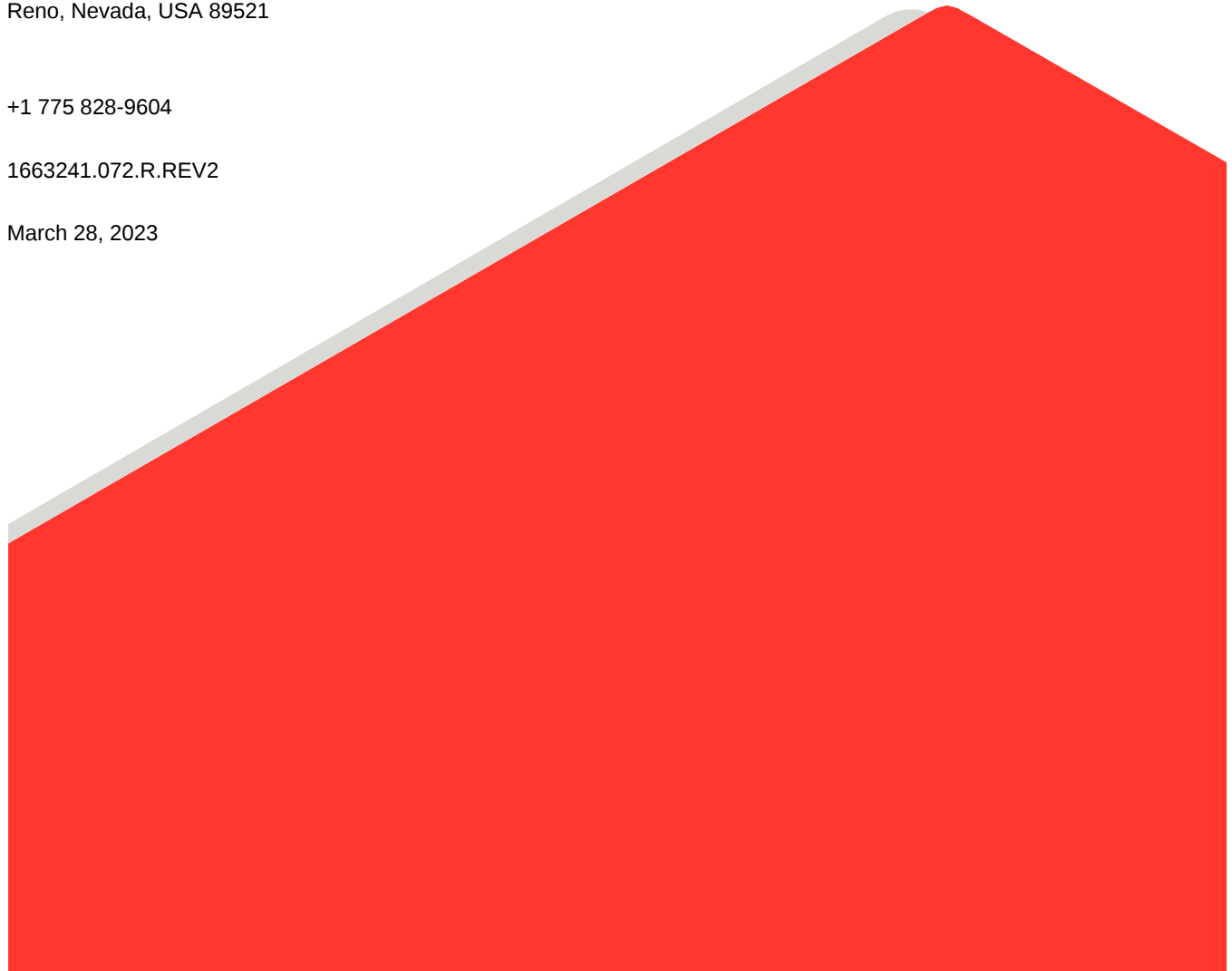
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March 28, 2023



Stormwater Pollution Control Plan

Grassy Mountain Mine

Malheur County, Oregon

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.

Signature of Official:



Printed Name of Official:

Glen Van Treek

Title of Official:

President

Name of Company:

Calico Resources USA Corp.

Date:

April 5, 2023

Stormwater Pollution Control Plan

Grassy Mountain Mine

Malheur County, Oregon

The following Stormwater Pollution Control Plan presented to Calico Resources USA Corp. has been prepared by the staff of Golder Associates Inc. under the professional supervision of the engineers whose signatures appear herein.

This Stormwater Pollution Control Plan has been prepared in general accordance with the Oregon Department of Environmental Quality 1200-Z National Pollutant Discharge Elimination System Stormwater General Permit, Industrial Stormwater Guidance and Sector-specific Controls for Mining activities (Section E, Sector G).

WSP USA Inc.



Christopher J. MacMahon, PE
Vice President, Civil Engineer

Document Revisions

Date	Revision	Comment
November 6, 2019	0	Issued Final
October 26, 2021	1	Modified to meet revised 1200-Z Permit requirements
March 28, 2023	2	Revised to address Completeness Review Comments

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ACRONYMS/DEFINITIONS

amsl	Above Mean Sea Level
BMP	Best Management Practice
Calico	Calico Resources USA Corp.
CCC	Criterion continuous concentration
CMC	Criterion maximum concentrations
COC	Chain-of-Custody
COOP	Cooperative Observer Network
CPA	Consolidated Permit Application
DO	Dissolved Oxygen
ERP	Emergency Response Plan
ft	foot/feet
Golder	Golder Associates Inc.
Grab Sample	Individual discrete sample collected over a period of time not to exceed 15 minutes
Impaired Water	Waters identified by Oregon or EPA as not meeting applicable Oregon water quality standards
mg/L	milligrams per liter
Month	Calendar Month
N/A	not applicable
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
O&G	Oil & Grease
Permit	Oregon Industrial Stormwater General Permit 1200-Z
Quarter	January through March, April through June, July through September, or October through December
RAWS	Remote Automated Weather Station
SWPCP	Stormwater Pollution Control Plan
TBD	To be Determined
TMDL	Total Maximum Daily Load
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
U.S.	United States
WRD	Waste Rock Dump
Week	Calendar week of Sunday through Saturday

1.0 GENERAL INFORMATION

This document is the Stormwater Pollution Control Plan (SWPCP) for Calico Resources USA Corp.'s (Calico's) Grassy Mountain Mine (Project) located approximately 20 miles south of Vale, Oregon in Malheur County, Oregon as shown on Figure 1. This SWPCP has been prepared in accordance with the Oregon Department of Environmental Quality (ODEQ) 1200-Z National Pollutant Discharge Elimination System Stormwater General Permit (the 1200-Z Permit, Appendix A), effective July 1, 2021.

The purpose of the 1200-Z Permit is to protect surface water quality by reducing pollutants in stormwater runoff. Preparation of this SWPCP does not guarantee compliance with the Permit. It is the responsibility of Calico to implement the necessary Best Management Practices (BMPs), monitoring plan, reporting, and recommendations set forth in this document. This SWPCP has been prepared by Golder Associates Inc. (Golder) a member of WSP for the exclusive use of Calico at the Project.

This SWPCP is intended to assist Calico in controlling stormwater pollution. This SWPCP shall be accessible at the Project at all times and submitted to ODEQ along with a permit renewal application prior to the required Permit renewal deadlines. This SWPCP should be updated in accordance with ODEQ procedures as described in the 1200-Z Permit whenever there is a change in design, construction, raw materials, operation, or maintenance of the Mining Facilities which may impact stormwater quality.

The main text of this SWPCP includes important information regarding industrial activities conducted at the Project, potential pollutants, and BMPs for minimizing stormwater pollution. The appendices provide supporting documentation, such as a copy of the 1200-Z Permit, tabs for maintaining inspection documents, benchmark exceedance corrective action plans, the Land Use Compatibility Statement, and other information required to be maintained by the permit.

Once Calico receives a permit assignment letter, it will be placed with the general permit in Appendix A and any additional parameter monitoring and limits noted in Table 1. The laboratory responsible for analysis of stormwater samples must be notified of the changes and new parameters (including required "minimum levels" of detection) before the first sampling event occurs.

1.1 Project and Contact Information

Table 1: General Information

General Information	
Facility Name	Grassy Mountain Mine
Site Operator	Calico Resources USA Corp.
Type of Operation	Gold Mining
Standard Industrial Classification (SIC) Codes	1041
Date of Initial Operation and Hours of Operation	TBD
Location of Facility	Eastern Oregon, 20 miles south of Vale
Latitude/Longitude	43.674° N latitude and 117.362° W longitude
Location Telephone Number	TBD
Designated Person Responsible for Spill Prevention and Storm Water Quality (Phone Number and Email)	Mine Manager (TBD)
Prepared by:	Christopher MacMahon, PE of Golder; Jen Pepe of Golder; and Sierra Harmening of Golder
Contact Person for this Permit	Glen Van Treek, Calico Resources USA Corp. 775-625-3600

Golder Associate Inc. (Golder) a Member of WSP has prepared this SWPCP for Calico's Project in Malheur County, Oregon to satisfy the following requirements:

- SWPCP required pursuant to Condition 1 of the 1200-Z Permit to be issued by the ODEQ, including mining sector specific requirements under Schedule E, Sector G. The 1200-Z Permit is provided in Appendix A. An ODEQ SWPCP permit requirement's cross-reference checklist is provided in Appendix B.

1.2 Site Description

The Project is a planned underground gold mining operation in Malheur County, Oregon (Figure 1). The Project is located within Sourdough Basin/Negro Rock Canyon watershed, which drains to the north to the Malheur River Basin. The site will be covered under the 1200-Z Permit for a new discharge to impaired waters. Processing areas include a Tailings Storage Facility (TSF), waste rock dump (WRD), ore processing area, underground portal, and a basalt quarry.

Stormwater will be collected and routed around the non-discharging process areas to natural drainages and will not come into contact with manufacturing or processing materials.

The purpose of the 1200-Z Permit is to protect surface water quality by reducing pollutants in stormwater runoff. Operating under the permit is conditional on implementation of the necessary controls, monitoring plan, reporting, and recommendations set forth in this document. This SWPCP is intended to assist Calico in controlling stormwater pollution and will be accessible at the Project during operations. This SWPCP should be updated in accordance with ODEQ procedures as described in the 1200-Z Permit Schedule A.9, whenever there is a change

in design, construction, raw materials, operation, or maintenance which may impact stormwater quality, a change in discharge points, or change in the site contact. Once Calico receives a permit assignment letter, it should be placed with the general permit in Appendix A and any additional parameter monitoring and limits noted in Table 1. The laboratory responsible for analysis of stormwater samples must be notified of the changes and new parameters (including required “minimum levels” of detection) before the first sampling event occurs.

This SWPCP will be supported by Calico’s spill prevention plan that will be developed for the site.

1.2.1 Facilities and Activities

The Grassy Mountain property encompasses approximately 885 acres in Malheur County, Oregon. The geographical center of the property is located at 73.674 degrees latitude and 117.362 degrees longitude with the principal zone of mineralization located in Section 8 of the Township 22 South, Range 44 East, Willamette Meridian.

The Project site is located in the semi-arid plateau of eastern Oregon and local landscape is typical of high mountain desert environment and rangeland. The terrain is gentle to moderate with relatively low relief. Elevation ranges from approximately 4,050 feet above mean sea level (amsl) at the southeastern corner of the Basalt quarry area to 3,520 feet amsl north of the TSF reclaim pond. Drainage at the site is generally to the north in ephemeral natural drainages. No perennial streams or wetlands exist at the site.

Currently there are no mining operations on site and all facilities described in this SWPCP are planned, not existing. Planned facilities at the property are shown in Figures 2 and 4, and include:

- TSF Area (107.4 acres)
 - Geomembrane lined TSF with underdrain system and supernatant pond
 - Temporary Waste Rock Storage Facility
 - Reclaim pond (16,000 ft²) that pumps back to the mill
 - Temporary contractor laydown yard
- Process Pad and Portal Pad Area (11.5 acres total)
 - Mill
 - Lined Run of Mine Stockpile
 - Truck Shop
 - Truck Wash
 - Fueling Station
 - Admin Offices
 - Laboratory
 - Contact Stormwater Containment Pond that pumps back to the processing facilities
 - Portal Pad

These Project facilities meet the definition of Standard Industrial Classification (SIC) code 1041, Gold Mining. Each of the three process areas are designed as zero-discharge areas.

The Project will produce gold by mining ore from the underground workings and processing the ore at the process plant. Tailings slurry will be pumped to the geomembrane lined TSF. The TSF is designed to incorporate a dual containment system in accordance with Oregon Administrative Rules (OAR) Division 43 – *Chemical Mining* guidelines. Water (process and precipitation) on the tailings surface is collected in the supernatant pool and returned to the mill for reuse. The TSF reclaim pond at the north toe of the TSF collects water flowing through the tailings mass to the underdrain system installed above the TSF basin geomembrane liner and is recirculated to the mill for reuse. The tailings slurry and reclaim pipelines are located in secondary containment between the plant area and TSF as shown on Figure 2.

The Temporary Waste Rock Storage Facility (TWRSF) is a temporary facility for storage of waste rock materials produced during active mining. Waste rock materials will be stockpiled above a geomembrane lined facility that drains into the TSF where all drainage is managed within the mill process circuit. There is no discharge from the TWRSF into the natural environment. Upon completion of mining operations, the TWRSF will be removed, and the area reclaimed in accordance with the *Operating and Reclamation Plan*.

The process area includes a dual containment contact water pond to collect stormwater from the process area and pump it back to the mill for reuse. Figure 2 shows the location of diversion channels routing stormwater around these facilities.

Basalt from the quarry will also be used to construct the TSF embankments. The basalt quarry floor will be developed in single benches and all stormwater will be managed within the quarry during operations. Water collected within the quarry will be collected and recirculated back to the mill for reuse. Operations at the quarry include excavation, loading, crushing, and screening.

Detailed designs of the TSF, TWRSF including stormwater water management structures and engineering calculations are presented in Appendix C of the Consolidated Permit Application in the engineering design report titled *Detailed Design, Tailings Storage Facility and Temporary Waste Rock Storage Facility, Grassy Mountain Mine, Malheur County, Oregon*.

1.2.2 Climate and Hydrology

The Project is located in the semi-arid plateau of eastern Oregon. Climate data for the site was developed using nearby weather station data, regression analyses, and elevation of the proposed TSF. Daily recorded data from two Remote Automated Weather Stations (RAWS), one Cooperative Observer Network (COOP) station, and PRISM Climate spatial data were used as the base climate data sets. The overlapping data set between all stations was January 1, 1987 through December 31, 2017.

Golder used statistical regression analyses to develop a factor based on measured annual average precipitation and station elevation for each of the three data sets in relation to the project site. That factor was used to predict the average monthly precipitation for the project site used for hydrologic analyses. Based on available data and unknown properties of the future supernatant pool, evapotranspiration data was used to predict average monthly evaporation used for the TSF water balance (Golder 2019).

A regression function estimated from the average annual precipitation and elevations of the Owyhee Ridge RAWS, Kelsay Butte RAWS, and Owyhee Dam COOP, indicates the Owyhee Ridge RAWS has the best monthly average precipitation correlation to the Project location. Therefore, the Owyhee Ridge RAWS station's average

monthly precipitation values were multiplied by 1.01 to obtain the predicted average monthly precipitation values for the Project (Golder 2019).

Monthly climate data from the Owyhee Ridge RAWS was used to calculate evaporation rates using the Penman-Monteith equation for the available data set between April 1998 and May 2019.

The National Oceanic and Atmospheric Administration (NOAA) Atlas 2 was used to develop the probabilistic-based synthetic storm events for the calculation of the peak flows. Atlas 2, Volume 10 (Oregon) contains precipitation frequency estimates for the western United States (U.S.). Atlas 2 generates the precipitation frequency estimates based on analysis of previously recorded weather patterns. The precipitation frequency estimates for Grassy Mountain were obtained using the latitudinal/longitudinal coordinates of N 43.669819° and W 117.35926°.

A frequency analysis was conducted to determine annual extreme daily rainfall depths for the 25-year, 24-hour and 500-year, 24-hour storm events that were not presented in the NOAA Atlas 2. Thirty-three years of maximum daily annual precipitation data from 1986 through 2018 were obtained from the Owyhee Ridge Oregon RAWS weather stations located approximately 8 miles southeast of the project site. Table 2 presents the precipitation data for the storms used in this analysis.

Table 2: Factor-predicted Grassy Mountain Average Monthly Climate Data

Month	Precipitation (in)	Evaporation (in)
January	0.93	0.85
February	0.62	1.31
March	0.97	2.69
April	1.14	3.81
May	1.49	5.28
June	0.89	6.37
July	0.51	8.16
August	0.31	7.04
September	0.46	4.39
October	0.83	2.95
November	0.73	1.31
December	0.89	0.79
Annual	9.77	44.97

1.2.3 Watershed and Stormwater Drainage

The Project site is located approximately 6.5-miles northwest of Lake Owyhee, Oregon. The Project site is divided into three main hydrologic catchment areas. Each catchment area was used to size diversion channels that route water around the zero-discharge process areas. These catchment areas are defined as follows:

- TSF Area – All western hydrologic catchment areas draining to the TSF area
- Process Pad and Portal Pad Area – All interior hydrologic catchment areas draining to the Processing Area and Portal
- Site Wide Area – All eastern hydrologic catchment areas draining to the quarry (borrow area) and the catchment for the existing natural drainage immediately west of the quarry

The overall Project site catchment area has a total tributary area covering approximately 1,350 acres. Hydrologic catchments areas were developed based on existing topographic features and identifying areas where calculated peak flows will be required for hydraulic design of drainage improvements. A summary of the non-contact hydrologic catchment areas is provided below in Table 3.

Table 3: Non-Contact Hydrologic Catchment Areas

Hydrologic Catchment	Total Area (Acres)
TSF Area	688
Process Pad and Portal Pad Area	12.4
Site Wide Area	664

To support construction-level design of the TSF and WRD, hydrologic and hydraulic analyses were completed using the Hydrologic Modeling System software, with weighted average soil characteristic curve numbers and time of concentrations developed using the Technical Release Win TR-55 software. This model developed flows from each sub-basin for the 25-year, 24-hour, 100-year, 24-hour, and the 500-year, 24-hour storm events. Detailed hydrologic analyses and design details for the catchments are included in Golder's detailed TSF Design Report (Golder 2019).

These flows were used to design the surface water diversion and contact water collection channels, culverts, and outlet aprons. The 25-year, 24-hour event was used to size temporary stormwater conveyance systems. Permanent diversion channel ditches were designed to convey the 100-year, 24-hour storm event with 0.75-ft of freeboard and to convey 500-year, 24-hour storm event within this freeboard allowance. All culverts on the project site were designed to only be in place during operation and were therefore designed to convey the 25-year, 24-hour storm event. Non-contact stormwater runoff from the Project site is designed to flow into natural drainages downstream of the site to unnamed tributaries of Negro Rock Canyon which in turn discharges to the lower Malheur River.

1.3 Pollutant Sources

Industrial activities at the Project within the TSF and process areas will not discharge pollutants to stormwater. Activities occurring outside the TSF, WRD, process area, and the quarry that may be sources of pollutants include:

- Delivery, loading, unloading, and transfer of raw materials and product
- Outdoor Material Storage
- Mining and construction equipment spills

1.3.1 Delivery, Loading, Unloading, and Transfer of Raw Material and Product

Quarried basalt will be loaded at the quarry and unloaded at the TSF for constructing TSF embankments, WRD pad, and potentially at the Portal for mine backfill. Finished products are shipped from the process plant offsite to market. The following potential pollutant sources may be present in loading and unloading areas:

Table 4: Raw Material and Product Potential Pollutant Sources

Source	Potential Risk to Stormwater
Diesel fuel, lube oil, and waste oil	Spills and leaks of petroleum hydrocarbons
Tracked fines from the quarry or portal areas, or from shipment of concentrate offsite	Total Suspended Solids (TSS), metals

1.3.2 Outdoor Material Storage

The TSF surface and quarries have the potential to periodically contribute fugitive dust outside the zero-discharge areas. The following potential pollutant sources may be present in fugitive tailings dust and quarry dust:

Table 5: Outdoor Material Storage Potential Pollutant Sources

Source	Potential Risk to Stormwater
Fugitive Tailings	Metals, TSS, pH changes
Dust from Quarry Activities	TSS, pH changes

1.3.3 Mining and Construction Equipment

Mining and construction equipment have the potential to release hydrocarbon chemicals in the event of a fluid release due to equipment failure. The following potential pollutant sources may be present in fugitive tailings dust and quarry dust:

Table 6: Mining and Construction Equipment Potential Pollutant Sources

Source	Potential Risk to Stormwater
Diesel fuel, lube oil, and waste oil	Spills and leaks of petroleum hydrocarbons

1.3.4 Non-Stormwater Discharges

Non-stormwater discharges may include watering of roads for dust control. Water used for dust control would be pumped from a groundwater source, which is an allowable non-stormwater discharge.

2.0 TECHNOLOGY-BASED EFFLUENT LIMITS

The 1200-Z Permit requires the implementation of site controls appropriate for the site to eliminate or minimize the exposure of pollutants to stormwater or to remove pollutants from stormwater before it discharges to surface

waters. The 1200-Z Permit identifies ten types of controls, “narrative technology-based effluent limits”, that must be addressed in the SWPCP and describe the specific components of each control. Calico will meet the narrative technology-based effluent limits in the following categories as described in Schedule A.1 of the permit:

- Minimize exposure
- Oil and grease
- Waste chemicals and material disposal
- Erosion and sediment control
- Debris control
- Dust generation and vehicle tracking of industrial material
- Housekeeping
- Spill prevention and response procedures
- Preventative maintenance
- Employee education

These measures assist in improving stormwater quality and meeting narrative technology-based effluent limits and stormwater benchmarks. Narrative technology-based control measures and BMPs should be evaluated for efficacy at least annually or whenever constituent benchmarks are exceeded. Additional recommendations regarding types of BMPs, methods of implementation, and operation and maintenance are detailed in Schedule A.1 of the permit. The ODEQ *Construction Stormwater Best Management Practices Manual*, 2021, is included for reference in Appendix D.

2.1 Site-wide Controls

2.1.1 Minimizing Exposure

Calico will minimize exposure of processing, material storage and handling including loading, unloading, disposal, cleaning, maintenance and fixed fueling areas to rain, snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable in light of best industry practice, Calico will do the following:

- Use grading, berms or curbing to divert stormwater away from areas and prevent stormwater contamination
- Locate materials and activities indoors or protect them with storm-resistant covers to the greatest extent practicable
- Store all process, chemical, and hazardous substances in vessels that prevent leaks and spills and within secondary containment facilities
- Locate materials, equipment, and activities above secondary containment or in areas where diversion structures prevent run-off from contacting surface waters
- Use drip pans or absorbents under and around leaking or leak-prone vehicles/equipment or store indoors

- Drain fluids from equipment and vehicles prior to long-term on-site storage or disposal
- Perform cleaning operations to prevent run-off, run-on, and overspray from contacting surface waters
- Clean spills or leaks promptly with absorbents or other effective dry cleanup methods to prevent pollutants from contacting surface waters
- Manage all wash water in containment facilities and discharge into a closed-loop septic system that prevents the wash water from contacting surface waters

Table 7, includes a list of BMPs implemented to minimize exposure and the required maintenance frequency.

Table 7: BMP Summary

Activity or Area	Source	Potential Pollutant	BMPs	BMP Equipment and Tools	Maintenance Frequency
All Operations	Potential equipment spills and leaks	TSS, Oil & Grease (O&G)	Place absorbent pads or drip pans under equipment stored or parked overnight that exhibit signs of leaks	Absorbent pads or Drip pans	As needed
			Remove or store under cover and on pallets abandoned or broken equipment or materials no longer considered for future use that have the potential to expose stormwater to pollutants	Storage under cover	As needed
			Implement proper spill prevention control measures	Spill kits	As needed
			Inspect spill kits to confirm its contents are adequate to respond to a spill	Spill kits	Monthly
			Inspect heavy equipment daily for evidence of leaks and promptly (as soon as reasonably possible and in no case later than in advance of forecasted rainfall events) cleanup spills, drips, or leaks	Absorbent or absorbent pads and spill kits, Preventative maintenance	Daily inspections, Maintenance as needed
			Use dry cleanup methods, apply absorbent pads to leaks or spills, then properly dispose	Absorbent or absorbent pads and spill kits	As needed
			Train personnel on proper cleanup and spill response	Training programs	Annually
			Practice good housekeeping procedures during all operations	Training programs	Daily
			Manage non-hazardous waste and dispose of in off-site landfill	Training programs	Weekly
			Avoid storage of material outside for extended periods or during rain events	Storage under cover	As needed
			Maintain a properly calibrated rain gauge	Rain Gauge	Annually
Processing Facility	Wind-blown or tracked-out process materials	TSS	Pick up litter and debris	Training programs	Daily

Activity or Area	Source	Potential Pollutant	BMPs	BMP Equipment and Tools	Maintenance Frequency
Hazardous Waste	Hazardous Waste	Iron, O&G, TSS, pH	Store materials in appropriately segregated and sealed containers in an area separated from traffic and on secondary containment	Secondary containment, Spill pallets.	Weekly inspections
			Inspect storage containers for leaks	Training programs	Weekly inspections
			Have certified, licensed transporters remove waste and take to licensed recycling/disposal Facility as required	Waste manifests, Training programs	As required
Fueling	Spills and leaks	O&G	Use spill and overflow protection	Tanks, Concrete Containment, Lined Containment	As needed
			Minimize run-on from stormwater into fueling area	Engineered Controls	N/A
			Use dry cleanup methods	Spill response equipment	As needed
			Implement proper spill prevention controls	Level gauges, Auto pump shutoff devices, Drip pans.	As needed
			Train employees on proper fueling, cleanup, and spill response	Training programs	Annually
Erosion and sediment	Eroded materials	TSS, metals	Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.	Heavy equipment, liner	As needed
			Install temporary drainage ditches during construction	Heavy equipment	As needed
			Install and maintain a stormwater conveyance system to divert runoff around material storage areas and convey runoff through pipes and non-erodible features to the extent practicable	Culverts and heavy equipment	As needed
			Construct and maintain sediment controls in effective operating condition.	Heavy equipment	As needed

Activity or Area	Source	Potential Pollutant	BMPs	BMP Equipment and Tools	Maintenance Frequency
			Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.	Stabilization controls, Velocity dissipation	As needed
			Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.	Heavy equipment	As needed
			Install energy dissipating devices to slow the velocity of stormwater drainage and prevent sediment movement	Gravel bags, Wattles, Check dams	As needed
Oil/Water Separator and/or Skimmers	Industrial Materials Onsite	TSS, O&G	Replace filter inserts as needed	Filter inserts	Monthly
			Remove all sediments from the unit or catch basin per design requirements	Heavy equipment, vacuum truck	As needed
Vehicles and equipment maintenance and storage	Maintenance	O&G	Properly store maintenance supplies	Covers, Secondary containment	Monthly inspections
	Parking	O&G	Educate employees on proper deployment of spill absorbent pads	Training programs	Annually
	Washing	TSS, O&G	Prohibit hosing off paved areas unless contained and disposed through treatment and filtration system	Training programs	N/A

2.1.2 Oil and Grease

Oil and grease will predominantly be used in the process facility and truck shop where secondary containment facilities are in place as shown on Figure 4. Calico will implement oil/water separators and skimmers to remove oil and grease. These will be inspected monthly and replaced as described in Table 7. Absorbent pads, booms, or drip pans are deployed when necessary.

2.1.3 Waste Chemicals and Material Disposal

Waste chemicals and materials will be temporarily stored in appropriate storage vessels on site in the process area. Scrap metal and garbage containers will be stored in closed bins and emptied appropriately, as needed. Waste chemicals will be permanently disposed of at an appropriate off-site landfill or other disposal facility.

2.1.4 Erosion and Sediment Control

Calico will implement structural and non-structural controls to minimize erosion of soil and sediment transport in all areas that have been disturbed due to mining-related activities. Detailed erosion and sediment BMPs are discussed in detail in Section 2.4. In general, controls include:

- Initiating non-vegetative stabilization of disturbed areas within 14 days of earthwork activities ceasing and vegetative stabilization methods when site conditions allow with seed mix designs in accordance with the site's Reclamation Plan
- Gravel surfacing on travel ways
- Run-off detention facilities
- Vegetated filter strips, bioswales
- Flow dissipation structures
- Any other controls required by the local municipality

2.1.5 Debris Control

Calico will employ screens and booms to minimize or eliminate waste, garbage, and floatable debris from contacting surface waters.

2.1.6 Dust Generation and Vehicle Tracking of Contaminants

Calico will minimize dust generation, off-site tracking of contaminants, and discharge of soil/sediment, and waste materials using travel way dust suppression (unimpacted water only) and washing of on-site vehicle/equipment bodies and undercarriages at the wash bay prior to leaving the site. Washing of off-site vehicles entering the Project for routine deliveries or transport is not required unless they come in contact with deleterious materials that would pose a threat to receiving surface waters.

2.1.7 Housekeeping

All areas that contain materials, chemicals, or soils that could adversely impact surface waters will be inspected, cleaned, and maintained to prevent discharge, as indicated in Table 7. These areas are designed to provide containment of contaminants using berms, lined channels, swales, or secondary containment facilities as shown on Figure 4. Outlets to these areas will be properly maintained, as described in Table 7, to perform as designed.

2.1.8 Spill Prevention and Response Procedures

To prevent or respond to spills, leaks, and other releases, Calico will develop a management plan and strategies that include methods for spill prevention, clean-up, and notification procedures. At a minimum, these measures will include:

- Clear and proper labeling of containers, vessels, and pipelines
- Proper handling procedures for both routing handling and clean-up
- Preventative measures including secondary containment, barriers between material storage and traffic areas including curbing, berms, and barricading
- Procedures to expediate response in stopping, containing, and cleaning up spills, leaks, and other releases
- Training personnel who have the potential to be impacted or impact the response to spill prevention
- Have the necessary clean-up material on-site and readily available

The Project will properly use labels and lids to seal cans and drums storing liquids. Liquids will not typically be dispensed from the containers and drums. Drip pans or other protective devices for liquid transfer operations will be used to catch incidental spillage and drips from dispensing attachments installed in tanks, drums, barrels, or dispenser pumps. Used oil will be stored in appropriate containers under cover and with secondary containment pending removal by a licensed waste disposal contractor as described in the Waste Management Plan provided as an appendix to the Consolidated Permit Application (CPA).

The Project will maintain spill cleanup materials in a storage container near the process facilities, in the maintenance shop, fuel island, and on a service truck. Spilled or leaked industrial materials will be cleaned up promptly and disposed of properly as described in the Waste Management Plan provided as an appendix to the CPA. Spill kits and other spill and leak response equipment locations are identified on Figure 2. Each spill kit is inspected monthly to confirm its contents are adequate to respond to a spill. At a minimum, the following spill cleanup equipment will be maintained on-site and dedicated to spill cleanup:

- Absorbent pads and/or absorbent material capable of absorbing 15 gallons of fuel
- Absorbent boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity
- Storm drain plug or cover kit
- A 55-gallon drum or two 5-gallon buckets with lids
- 6-mil plastic bags
- Non-metallic shovel

2.1.9 Preventative Maintenance

Calico will regularly inspect, clean, maintain, and repair all equipment, systems, and material handling/storage areas that have the potential to impact receiving surface waters. All management control measures including stormwater structures, catch basins, and treatment facilities will be repaired and maintained in proper working order to perform as designed.

As described previously, preventative maintenance programs implemented at the facility include inspecting, servicing, and maintaining stormwater controls. The preventative maintenance program also includes:

- Monthly inspection of areas where leaks or potential spills of significant material or industrial activities could impact stormwater runoff
- Monthly inspection of waste disposal areas
- Monthly inspection of air pollution control equipment, material handling equipment, and storage areas
- Monthly inspection of permanent and temporary light vehicle access and haul roads. Refer to Section 2.4.3 for stabilization of light vehicle access and haul road slopes
- Monthly inspections of stormwater control measures, structures, and catch basins
- Cleaning, maintenance, or repair of materials and storage areas, staging areas, stormwater control measures, structures, catch basins, and treatment facilities as needed upon discovery within seven days, unless infeasible. If seven days is infeasible, the installation or repair will be completed as soon as practicable

Monthly facility inspections will be recorded as site inspections on site-approved forms. Documentation of cleaning, maintenance, and repair of stormwater conveyance components will be recorded in Appendix C. A proposed inspection form has been included in Appendix C. This form will be edited to address additional BMPs.

2.1.10 Employee Education

Calico will develop and maintain an employee orientation and education program to inform all personnel of the pertinent components and goals of this SWPCP. This training must include the following:

- Specific control measures used to achieve the above technology-based effluent limits
- Monitoring, inspection, reporting, and documentation requirements
- Facility specific training to include:
 - Personnel responsible for design, installation, maintenance, or repair of controls including pollution prevention and treatment measures
 - Personnel responsible for the storage and handling of chemicals and materials that could contribute to pollutants to stormwater
 - Personnel responsible for conducting or documenting monitoring or inspections
 - Personnel responsible for conducting and documenting corrective actions

Education and training must occur no later than 30 calendar days after date of hire or change of duties and annually thereafter. Education and training documentation will be retained on-site for a minimum of three years, and made available to ODEQ upon request.

2.1.11 Non-stormwater Discharges

Calico will not discharge any non-stormwater solutions or waters from the Project, except for unimpacted groundwater used for dust control on haul roads. Unimpacted groundwater is an authorized discharge under the 1200-Z Permit.

2.2 Basalt Quarry Area

The quarry area is designed to be zero-discharge area during operation and therefore does not require a 1200-A or 1200-Z Permit. The basalt quarry area is included in this SWPCP because it is part of the Project and its sole development purpose is for mining operation and construction.

A surface water diversion channel will be constructed along the eastern boundary of the quarry excavation to divert stormwater from entering the quarry area. Upgradient stormwater will be diverted to the north of the quarry and will flow to a natural drainage (Figure 2). A surface water run-on diversion berm will also be constructed along the eastern and southern quarry excavation boundaries to divert stormwater around the quarry. Precipitation that falls into the quarry footprint will be managed within the quarry using internal sloping, retention berms, and a stormwater management sump (Figure 2). Additional BMPs will be implemented to minimize erosion and sedimentation including:

- Minimizing areas stripped
- Internal sloping
- Seeding and mulching
- Diverting natural runoff around the site
- Conveyance ditches
- Graveled roads and working areas
- Retention berms

2.3 Topsoil Stockpiles

The topsoil stockpiles will be constructed during initial development of the project at the locations presented on Figure 2. Best Management Practices will be employed to construct the stockpiles to be structurally stable and reduce erosion as discussed in Section 2.1.4 and as described in Appendix D. Upon completion of mining operations, the topsoil stockpiles will be removed and used during reclamation closure cover.

Additional BMPs that will be implemented during construction and operation to minimize erosion and sedimentation include:

- Minimizing disturbance footprint around the stockpiles
- Stockpile sloping
- Seeding and mulching
- Diverting natural runoff around the stockpiles
- Graveled roads and working areas

2.4 Metal Mining Sector-specific Requirements

Sector-specific requirements for metals mining (Section E, Sector G) apply to stormwater discharges associated with industrial activities at metal mine facilities. Sector-specific requirements will be applied to stormwater discharges for active and inactive areas outside the zero-discharge areas at the Project area. It should be noted

that the Project is in an area defined as “arid” in Schedule D, with less than 10 inches of precipitation per year. Evaporation far exceeds the average annual precipitation. The controls discussed below account for requirements in Schedule G for mines in arid areas.

2.4.1 Requirements Applicable to Earth-disturbing Activities Conducted Prior to Mining Activities.

Stormwater discharges from earth-disturbing activities prior to active mining activities will be covered by the 1200-Z Permit. Activities that occur prior to stabilization of these areas do not need to comply with technology based effluent limits, Schedule B requirements in Section 2.0, or the monitoring or inspection frequencies in Section 3.2.

2.4.2 Requirements for earth-disturbing activities conducted prior to active mining activities

- Erosion and sediment control installation requirements
 - Sediment controls will be installed and made operational downgradient by the time construction activities commence or as soon as practical
- Maintenance requirements
 - Erosion and sediment controls will be maintained in effective operating condition
 - When a problem is identified, maintenance will be performed by the end of the following day
 - When a control must be replaced or significantly repaired, installation will be completed within 7 days
- Perimeter controls
 - Sediment controls will be installed around the perimeter of the disturbance and sediment will be removed before it accumulates to one-half of the above ground height of the control.
 - For construction vehicles exiting the site directly onto paved roads, sediment controls will be installed around the perimeter of the disturbance and sediment will be removed before it accumulates to one-half of the above ground height of the control.
- Soil or sediment stockpiles
 - Temporary covers will be used no later than 14 days after initiating stabilization
 - Non-vegetative stabilization measures will be used until site conditions allow vegetative stabilization measures
 - Stormwater run on will be diverted to minimize erosion to piles
 - Sediment from stormwater runoff will be minimized using sediment controls
- Sediment basins
 - When sediment basins are used, storage for the 2-year, 24-hour storm, or 3,600 cubic feet per acre drained will be provided
 - Erosion of basin embankments using stabilization controls and of the inlet and outlet points will be prevented using erosion controls and velocity dissipation devices

- Minimize dust
 - Dust will be minimized with water application
- Restrictions on use of treatment chemicals
 - If sediment treatment chemicals are used, they will be used according to state and federal regulation, manufacturers specifications and best engineering practices. Chemicals will be safely stored in the non-discharge areas. Chemicals will be selected based on site conditions and conventional erosion and sediment controls will be used prior to and after application.
- Prior to use of cationic treatment chemicals, appropriate controls and implementation procedures will be designed to ensure that cationic treatment chemical usage will not lead to a violation of water quality standards, and authorization will be received from the applicable DEQ regional office or agent. Site stabilization for earth-disturbing activities for purposes of mine site preparation
 - Temporary stabilization of disturbed areas
 - When pre-mining earth-disturbing activities temporarily cease, disturbed areas will be stabilized within 14 days using erosion control blankets or a seed base and tackifiers
 - Vegetative measures will be used as soon as conditions on the site allow, given the arid environment
- Final stabilization of disturbed areas
 - When pre-mining earth-disturbing activities permanently ceases, disturbed areas will be immediately stabilized if feasible using erosion control blankets or a seed base and tackifiers
 - Final vegetation stabilization measures will be established as soon as practical given the arid environment

2.4.3 Site Stabilization for Construction of Staging Areas for Structures and Access Roads

- Area of disturbance:
 - The amount of soil exposed will be minimized during construction activities
- Erosion and sediment control design requirements
 - Erosion and sedimentation controls will be installed and maintained to account for the following factors:
 - The expected amount, frequency, and duration of precipitation
 - The nature of runoff and run-on at the site (impervious surfaces, slopes, and site drainage features)
 - The range of soils particle sizes at the site
 - Discharges from stormwater controls will be directed to vegetated areas to the extent practical. Velocity dissipators will be used if necessary
 - Erosion and sediment controls will be used to control peak flowrates and total stormwater volume to minimize erosion and scour in the vicinity of discharge points from channelized flow

- Conveyance channels are designed to avoid unstabilized areas and reduce erosion. Channels designs are included in the *Operating and Reclamation Plan*. Designs minimize erosion of channels and their embankments, outlets and adjacent streams, slopes, and downstream waters during discharge conditions
- Natural barriers and buffers
 - Natural barriers of 50 feet will be maintained between a water of the U.S., or if stormwater discharges from earth-disturbing activities occur within 50 feet of a water of the U.S., one or more of the following BMPs will be used to control and treat sediment and turbidity:
 - Compost berms, blankets or socks, erosion control mats, and/or tackifiers
 - Approved water treatment by electro-coagulation, flocculation, or filtration
 - Other substantially equivalent control approved by ODEQ or agent
 - Natural buffers should be delineated and marked off.
- Soil and sediment stockpile
 - Any soil or sediment stockpile will be located outside the 50-foot natural barrier
- Sediment basins
 - Sediment basins will be located outside the 50-foot natural barrier
- Native topsoil preservation
 - Topsoil will be preserved during earth-disturbing activities and stockpiled if feasible, for use in reclamation
- Steep slopes
 - Disturbance of slopes steeper than 3 horizontal to 1 vertical (3H:1V) will be minimized
 - If disturbance of steep slopes is necessary, such disturbances will be phased and stabilization practices specific for steep grades will be implemented, as described in Appendix D, Sections 2.6, 2.12, and 2.16.
- Soil compaction
 - Vehicle use will be restricted in areas where vegetative stabilization or infiltration will be practiced unless soil compaction is integral to the functionality of the site or the facility
- Dewatering practices
 - Groundwater or stormwater removed from points of accumulation will not be discharged unless it has been managed by appropriate controls. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control. Discharge requirements include:
 - No discharge of visible floating solids or foam
 - Oil and grease must be removed via an oil-water separator or filtration device

- Upland vegetated areas should be used to the extent possible to infiltrate dewatering water
 - Velocity dissipators will be used where dewatering water is discharged
 - Backwash water will be hauled for disposal or returned to the beginning of the treatment process
 - Filter media will be cleaned or replaced when the pressure differential exceeds the manufacturers specifications
- Pollution prevention
 - No prohibited discharges listed in the 1200-Z Permit Subsection E.G.4.2.10 will be discharged to stormwater
 - Exposure will be minimized by locating pollution sources away from surface water drainages and construction products and wash water in the zero-discharge areas
 - Construction staging areas (arid areas)
 - Within 14 days of stopping construction work in an area necessary nonvegetative stabilization measures will be installed
 - Vegetative stabilization will be initiated as soon as conditions on site allow
 - A schedule will be documented for initiating and completing vegetative stabilization
 - Planted and/or seeded areas will be covered with bio or photo degradable erosion controls

2.4.4 Water Quality-based Requirements Applicable to Earth-disturbing Activities Conducted Prior to Mining Activities

Water Quality-based requirements applicable to earth-disturbing activities conducted prior to mining activities apply to sites that discharge to impaired waters that are listed for turbidity or sedimentation or have an EPA-approved total maximum daily load (TMDL) for sedimentation or turbidity. The Project stormwater ultimately discharges to the Lower Malheur River, which is not impaired for sedimentation or turbidity based on the 2018/2020 Integrated Report Assessment.

2.4.5 Inspection Requirements Applicable to Earth-disturbing Activities Conducted Prior to Mining Activities

Sector-specific inspections for earth-disturbing activities conducted prior to active mining at the Project are listed below.

- Calico will perform inspections at the following frequencies:
 - Calico will inspect disturbed areas every 14 calendar days and within 24 hours of a storm event of 0.25 inches or more. Calico will use a rain gauge on-site to measure rainfall amount
 - For activities performed during seasonally dry months, inspections will be performed monthly and within 24 hours of a storm event of 0.25 inches or more
 - Once stabilization has been completed for an area, Calico will reduce inspection frequency to once every month

- Calico will suspend inspections during continuous frozen conditions for disturbed areas that have been stabilized.
- At a minimum, Calico will inspect:
 - Disturbed areas
 - Stormwater controls and pollution prevention measures
 - Areas that have been stabilized
 - Material, waste, borrow, or equipment storage and maintenance areas
 - Areas where stormwater flows
 - Discharge points
- At a minimum, Calico will inspect:
 - Whether all stormwater controls are installed and operating properly
 - Whether new or modified stormwater controls are needed
 - For conditions that would lead to a spill or leak
 - For visual signs of erosion or sedimentation at discharge points
 - If discharge is occurring, effectiveness of controls and quality of the discharge will be checked
- Calico will complete an inspection report within 24 hours of an inspection. Each report will be signed and kept at the mine site, and will include:
 - Inspection data
 - Name and title of inspectors
 - Summary of findings
 - Rainfall amount that triggered the inspection, if applicable
 - Unsafe conditions preventing the inspection, if applicable

2.5 Technology-based Effluent Limits for Active Mining Activities

Technology-based effluent limits that apply to active mining operations, in addition to requirements in the 1200-Z Permit Schedule A, include additional employee training, stormwater controls, and discharge testing.

Calico will conduct training at least annually at active and temporarily inactive areas of the Project. Annual training will specifically be conducted for operations outside the zero-discharge areas, and operations within the zero-discharge areas that may impact other areas due to fugitive dust, tracking, or spills.

Calico will implement additional stormwater controls needed to minimize pollutant discharges in addition to the 1200-Z Permit Schedule A requirements, including:

- Calico will comply with air permitting required by ODEQ or country air quality permits, constituting compliance with dust control limits in Schedule A.1.f.
- Stormwater will be diverted around the TSF, Process, and Quarry areas as shown on Figures 1 and 2 in engineered channels.
- Source material will be capped when necessary, to minimize pollutant discharged to stormwater. Source materials being capped, and the capping material will be identified.
- Active or passive treatment will be used, if necessary and feasible, to protect water quality.

Discharge Testing will be performed at any identified discharge points for specific mine-related discharges, such as adits or seeps, or comingled discharges. However, none of these discharge points have been identified.

2.6 Additional SWPCP Requirements for Mining Operations

Additional requirements for mining operations not addressed in the previous sections are listed below.

- SWPCP Requirement E.G.6.1 - Nature of Industrial Activities
 - The Project is located remotely in the eastern Oregon, and stormwater discharges will not affect major transportation routes or local communities. Stormwater discharges from the site will be routed to natural ephemeral stream channels tributary to Negro Rock Canyon. Stormwater leaving the site is largely non-contact stormwater, with impacts only from vehicle traffic at the mine and potentially fugitive dust from mine operations.
- SWPCP Requirement E.G.4.6.2: - Site Map
 - Figures 1 and 2 includes the site features required by E.G.4.6.2. Detailed facilities layouts within the process pad area are not included, because the area is designed to be contained by the containment pond. The following activities are planned onsite but will be limited to areas within the process pad with contact stormwater captured in the containment pond: outdoor equipment storage, fueling and maintenance areas, and material handling areas. Site boundaries, facilities, roads, diversion ditches and discharge points outside the zero-discharge area are included in the site maps.
- SWPCP Requirement E.G.4.6.3 - Potential Pollutant Sources
 - Potential pollutant sources specific to the Grassy Mountain site that are not contained within the zero-discharge areas would include natural mineralization of the native ground. A surface water baseline study was conducted in 2018 to characterize surface water quality prior to mining (SPF Water Engineering, LLC, SPF, 2018). Four locations were sampled in the area, including one location in Negro Rock Canyon approximately 4 miles to the north of the site where intermittent stream flow allowed sample collection. Sample were collected biannually in 2013 and 2014. All locations sampled, including the Negro Rock Canyon creek location, had arsenic levels that exceeded the human health risk limit of 0.0021 milligrams per liter (mg/L). Sector specific stormwater discharge benchmark for arsenic is 0.15 mg/L (Section 3.2). No other exceedance of standards was identified at any of the sites (SPF 2018).
- SWPCP Requirement E.G.4.6.4 - Documentation of Control Measures
 - Calico will document all control measures implemented at the site, including controls that are not specifically required, and including dust control requirements and how they were achieved. This SWPCP

will be updated to reflect any changes to stormwater control measures and all compliance requirements under state or county air quality permits and how the site has achieved compliance.

- SWPCP Requirement E.G.4.6.5 - Employee Training
 - Calico will document all employee training in the SWPCP when it is developed.
- SWPCP Requirement E.G.4.6.6 - Certification of Permit Coverage for Commingled Non-stormwater Discharges
 - Calico will not discharge commingled non-stormwater discharges.

3.0 STORMWATER MONITORING

Permittees must demonstrate compliance with all benchmarks established in the 1200-Z Permit Schedule B, all assigned impairment pollutant reference concentrations, and any sector-specific benchmarks contained in the 1200-Z Permit Schedule E. If the permittee can demonstrate through five consecutive quarters of sampling that all sample results are below all statewide benchmarks, sector-specific benchmarks, and reference concentrations, a stormwater monitoring waiver can be obtained by submitting a formal request to ODEQ. Monthly visual observations, however, are not subject to the waiver and must be documented in Calico's annual report to ODEQ.

3.1 Stormwater Discharge Points and Monitoring Locations

There are five locations identified at the Project where non-contact stormwater discharges to natural drainages downgradient of mine operations. These discharge points are numbered Discharge Points (DP) 001 through 005 (Figure 2) and are described below by hydrologic catchment.

- DP 001 discharges from the TSF western diversion ditch, then flows around the south end of the TSF Area and discharges diverted water from the upgradient catchment.
- DP 002 is located at the access road culvert outlet north of the reclaim pond, and discharges stormwater from the diversion ditch that flows around the eastern side of the TSF Area, WRD, TSF reclaim pond, and runoff from the TSF embankments and the TSF growth medium stockpile.
- DP 003 discharges channelized flow from the east side of the access road north of the TSF.
- DP 004 is located in the natural drainage adjacent to, and downgradient from, the process area. DP 004 discharges stormwater from around the process plant area, portal pad, and the natural drainage between the process area and the basalt quarry, and run-off from the process pad growth medium stockpile and the basalt quarry growth medium stockpile
- DP 005 discharges diverted flow from upgradient catchment east of the basalt quarry.

All discharge points will be inspected monthly. All discharge points will be sampled quarterly if water is present at the discharge point. Visual observations will be conducted in a clean, colorless glass or plastic container in a well-lit area.

3.2 Monitoring Requirements and benchmarks

The 1200-Z Permit requires stormwater discharges, within the first 12 hours of a storm event, be sampled from the Project four times during the monitoring year (July 1 through June 30) with two samples between July 1 and

December 31 and two samples between January 1 and June 30. The Facility is not required to collect samples outside of normal business hours or during unsafe conditions. Samples must be collected at least 14 days apart.

The Oregon ODEQ has established benchmark concentration guidelines which must be met all times to demonstrate the effectiveness of site BMP's. If one or more benchmarks are exceeded, the Facility must conduct a series of corrective action steps which are further described in Section 3.8.

Discharges will be monitored for benchmark and sector-specific requirements as well as impaired pollutants. Required monitoring parameters are site specific and are determined by the facility's monitoring requirements letter which will be stored in Appendix A. A monitoring waiver may be obtained for individual parameters after five consecutive samples are equal to or below the benchmarks or determined to be due to background natural concentrations.

3.3 Discharge to Impaired Waters

The Lower Malheur River is listed as impaired for the following pollutants: toxics (DDT and Dieldrin), dissolved oxygen (DO), arsenic, and iron. The Project will not be a source of agricultural toxics, and they are therefore not included in monitoring requirements. Arsenic and iron are minerals associated with the natural mineralization of the native ground in the area of the Project.

Based on results from the surface water baseline sampling in Negro Rock Canyon Creek, approximately 4 miles to the north and downstream of the site, and three locations in the area within the Owyhee River drainage basin, background arsenic concentrations are elevated above the human health risk limit of 0.0021 mg/L but are consistently at least an order of magnitude below the aquatic criterion maximum concentrations (CMC) for aquatic life (0.34 mg/L). At the Negro Rock Canyon Creek sampling location, the total arsenic concentrations were consistent, ranging from 0.0237 to 0.0268 mg/L.

Iron concentrations in the baseline samples did not exceed human health or aquatic risk limits for samples collected in the Negro Rock Canyon Creek location. Two samples collected in the Owyhee River drainage exceeded the criterion continuous concentration (CCC) of 1 mg/l, at concentrations ranging from 1.15 to 1.45 mg/L.

3.4 Water Quality Based (Non-numeric) Effluent Limits

The Facility must not discharge stormwater which may cause or contribute to a violation of any instream water quality standard as established in OAR 340-041. If the Facility becomes aware, or ODEQ determines, that the discharge is causing or contributing to an exceedance of a standard, the Facility will be required to take corrective actions as described in Section 3.8 and Schedule A.11 through A.12 of the Permit. If the exceedance cannot be controlled by reasonable corrective actions, ODEQ may impose additional limitations or require the Facility to obtain coverage under an individual NPDES permit.

3.5 Technology-Based Effluent Limitations

The Facility must meet the following "narrative" technology based effluent limits where applicable and technologically available and economically achievable in light of best industry practice.

- Minimize exposure – Minimize exposure of raw and process materials to stormwater, including storing indoors, use of grading, berms, or curbing to divert stormwater away from outdoor areas, locating materials and equipment in containment systems, use of drip pans, draining fluids from equipment prior to storage, performing cleaning operations indoors, and managing wash water indoors or in bermed areas.

- Oil & grease – Employ oil/water separators, booms, skimmers, etc.
- Waste chemicals – Recycle or properly dispose of wastes, cover all waste contained in bins or dumpsters.
- Erosion/sediment control – Stabilize exposed areas, contain runoff using structural and/or nonstructural controls, use vegetation, gravel, paving to minimize soil loss from the site, use sedimentation basins, Bioswales to capture stormwater and allow for settling.
- Debris control – Use screens, booms, settling ponds to capture floating debris in catchment basins.
- Dust generation – Minimize dust and off-site tracking of raw, final, or waste materials.
- Housekeeping – Keep exposed areas clean via sweeping, litter pick up, and by keeping materials orderly and labeled, prompt cleanup of spills and leaks, maintaining vehicles and stowing materials in closed containers.
- Spill prevention and response procedure – Minimize potential for leaks, spills, and releases and develop plans that address prevention, clean up and notification procedures. The Emergency Response Plan (ERP), provided as an appendix to the CPA, identifies emergency response and reporting requirements for emergencies. Spills will be immediately reported by the Environmental Manager to the ODEQ through OERS at 1-800-452-0311. A release report may also be emailed to DOSPILLS@deq.state.or.us using the DEQ spill release form, provided in the ERP. Oil or reportable hazardous material spills to water will be immediately reported to the NRC at 1-800-424-8802 by the Environmental Manager. Initial emergency contact information, which will be updated as the Project proceeds, is provided in the ERP in an appendix to the CPA.
- Preventative maintenance – Inspect, clean, maintain and repair equipment and systems exposed to stormwater, inspect and clean stormwater control structures (i.e., catch basins, grates, screens, oil/water separators, sedimentation basins).
- Employee education – Maintain employee orientation and training program designed to communicate the goals of the SWPCP.

Section 2.0 of this SWPCP describes these measures in more detail as they apply to the Project site.

3.6 Sector Specific Technology-Based Effluent Limitations

Additional technology-based effluent limits that apply to active mining operations, in addition to requirements in the 1200-Z Permit Schedule A, include additional employee training, stormwater controls, and discharge testing as described in Section 2.6.

3.7 Sampling Procedure

3.7.1 Grab Samples

Stormwater samples are collected by placing a laboratory-prepared container (with preservatives as appropriate) directly into the flow, permitting a slow flow of water to enter the container. The sampler is cautious not to overflow or lose any preservatives from the sample container. If necessary, another clean sample collection container is lowered into the stormwater and used to fill the laboratory-prepared containers during heavy flow.

Following sample collection, the sample is placed in a cooler with ice and transported to a certified laboratory under chain-of-custody (COC) protocol. The COC is completed indicating the project name, sample name, and desired analytical methods.

On site testing for pH is required. A field pH instrument properly maintained and calibrated is required. If DO will be measured at the site due to its impairment status, a field DO meter will be used, maintained, and calibrated. Instrument calibration records, including the date of last calibration, serial number, and the name of the operator performing the calibration, are maintained with the field notes. Two-point calibrations are highly recommended. Buffer solutions used for calibration must not exceed expiration dates printed on the label.

Samples will be representative of stormwater flow from each hydrologic catchment that is discharged off-site. Each discharge point will be individually sampled.

Discharges will be monitored within 12 hours of the discharge event, if possible. If a discharge cannot be monitored within 12 hours of the event, a sample will be collected as soon as practical and documentation will include the reasons it was not practical.

Samples will be collected at the frequency indicated in Appendix A. Calico may collect additional samples, but all qualifying samples will be included in the Discharge Monitoring Report. If no sample was collected during a quarter due to no storm events of sufficient magnitude to produce run-off during business hours and/or safe sampling conditions, Calico will request a variance by February 15 and August 15. Supporting data and analysis demonstrating why the monitoring did not occur at the time of the Discharge Monitoring Report submission will be included.

3.8 Corrective Action Triggers

Corrective actions are triggered when benchmarks, sector-specific benchmarks, or reference concentrations of impairment pollutants are exceeded.

- Tier 1 Corrective Action Response (exceeds State-wide benchmarks in Schedule A.13)
- Tier 2 Corrective Action Response (annual geometric mean evaluations exceeds state-wide benchmarks)

3.8.1 Tier 1 Corrective Action

If visual observations show signs of pollution, or benchmark levels are exceeded for any benchmark parameter or reference concentrations associated with the impaired pollutant list provided to Calico by ODEQ, the Facility must:

- Investigate the cause of the elevated pollutant level
- Review this SWPCP and the selection, design, installation, and implementation of control measures
- Determine if changes to control measures are needed
- Evaluate treatment measures, infiltration devices and mass reduction measures

If monitoring indicates an impairment exceedance, the results of the above analysis must be summarized in a Tier 1 report describing corrective actions taken or to be taken, including the date the action was completed or expected to be completed, and whether a revision to the SWPCP is necessary. All substantially similar discharge points will be assessed, and correction actions implemented. Tier 1 corrective actions will be implemented before the next storm event if possible, or no later than 30 calendar days after receiving monitoring results or completing the monthly visual inspection, whichever comes first. If it is not possible to complete the corrective action within this timeframe, an explanation will be documented in the Tier 1 Report and corrective actions completed as soon as practicable. Tier 1 reports and industrial-specific checklists will be maintained on site and copies provided to

DEQ or agent upon request. If the SWPCP is revised as part of the Tier 1 corrective actions, it will be submitted to ODEQ within 30 days of the revision.

If Calico believes that corrective action is not necessary, a basis for this determination will be provided. If Calico believes the exceedance is attributed to the presence of natural background concentration for the pollutant, a natural background waiver report to support this determination will be submitted to support this determination.

Further details regarding what must be considered in the benchmark exceedance review and Tier 1 Plan are described in Schedule A.11 of the 1200-Z Permit.

3.8.2 Tier 2 Corrective Action

Calico will calculate the geometric mean of monitoring data collected during each full reporting year (July 1-June 30) of permit coverage (four quarterly sampling events) to determine whether any statewide benchmarks have been exceeded. For pH, an exceedance occurs if 50 percent or more of qualifying sample results collected at any monitoring point during two full reporting years are outside of the pH benchmark range. This information must be reported in the Discharge Monitoring Report by August 15th following the first year of permit coverage.

If the geometric mean of the year's monitoring data (four samples) exceeds one or more benchmarks, Calico will submit one of the following responses no later than December 31 of the same year of permit coverage, along with the revised SWPCP:

- A Tier 2 Report, prepared by an Oregon registered Professional Engineer (PE), will describe corrective actions, and will include a proposal for active or passive treatment. Treatment may include a combination of source removal, control, or treatment measures, with the goal of achieving benchmarks. All similar discharge points will be assessed, and correction actions implemented.
- A Tier 2 mass reduction waiver request may be requested if volume reduction measures have been implemented that have or will reduce the mass load of pollutants in the discharge to below the mass equivalent of the applicable benchmarks. The portion of the SWPCP that addresses mass reduction measures must be designed and stamped by an Oregon PE or an Oregon certified engineering geologist.
- A Tier 2 natural background waiver request may be requested if the benchmark exceedance is attributed solely to the presence of the pollutant in natural background. The request must include supporting rationale and data collected by the facility or others to demonstrate that exceedances are due solely to background conditions.

Further details regarding what must be considered in the Tier 2 Reports are described in Schedule A.12 of the 1200-Z Permit.

3.9 Inspections

Visual inspections of stormwater controls and discharge points will be performed monthly by trained Calico personnel. Visual monitoring will occur at the discharge points and at all points where contaminants may become entrained with stormwater. Inspections will be documented based on sector specific requirements as described in Section 2.4.5. Inspections will be documented in reports retained on site. Inspection documentation will include any previously unidentified source of pollutants, the nature of the discharge (snow melt or rain), and any corrective action taken.

4.0 REPORTING AND RECORDKEEPING

4.1 Reporting Monitoring Data

All monitoring results, including monthly visual observations, from samples collected at monitoring points identified in the SWPCP will be electronically submitted on a Discharge Monitoring Report via the [YourDEQOnline](#) (YDO) website at the frequency in Table 8 below, even if monitoring did not occur.

Table 8: Discharge Monitoring Report Timeframes

Reporting Quarter	Sample Collection Timeframe	DMR Due Date (postmarked with original signature)
1st	July – September	November 15th
2nd	October – December	February 15th
3rd	January – March	May 15th
4th	April – June	August 15th

Minimum detection levels and analytical methods for the parameters analyzed will be reported. Non-detects will be reported as “ND” with the detection limit in mg/L in parentheses, e.g., “ND (0.05 mg/L)”.

At the conclusion of the second year of monitoring, the geometric mean of the stormwater sampling results will be compared to the effluent benchmark concentrations and impairment pollutant reference concentrations. In calculating the geometric mean, any “non-detects” must be calculated using one-half of the detection limits indicated on the analytical report.

If stormwater sample results exceed one or more of the benchmarks or reference concentrations, Calico will take the corrective action steps described in Section 3.8.

The geometric mean is calculated as follows:

$$G = (Y_1 \cdot Y_2 \cdot \dots \cdot Y_n)^{1/n}$$

If a waiver has been obtained from monitoring for one or more discharge point and/or parameters, the letter “W” will be entered in each of the columns as appropriate. If there was no discharge during a given monitoring period, or if Calico was unable to collect a sample, “NS” is entered in each column of the discharge monitoring report.

4.2 Recordkeeping Procedures

Calico will retain the following records on site for at least 3 years and make records available to ODEQ upon request:

- A copy of the SWPCP and the 1200-Z Permit
- Copies of the permit assignment letter and coverage documents from ODEQ for the permit term
- Copies of corrective action and inspection reports, including documentation of benchmark exceedances
- Inspection, maintenance, repair, and education activities

- Spill or leaks that have impacted or have had the potential to impact stormwater or surface water. Corrective actions to clean up spills and leaks and measures to prevent future problems
- Documentation of any status change for facilities at the Project
- Discharge Monitoring Reports, laboratory reports and field sampling notes
- Employee education materials and records of training

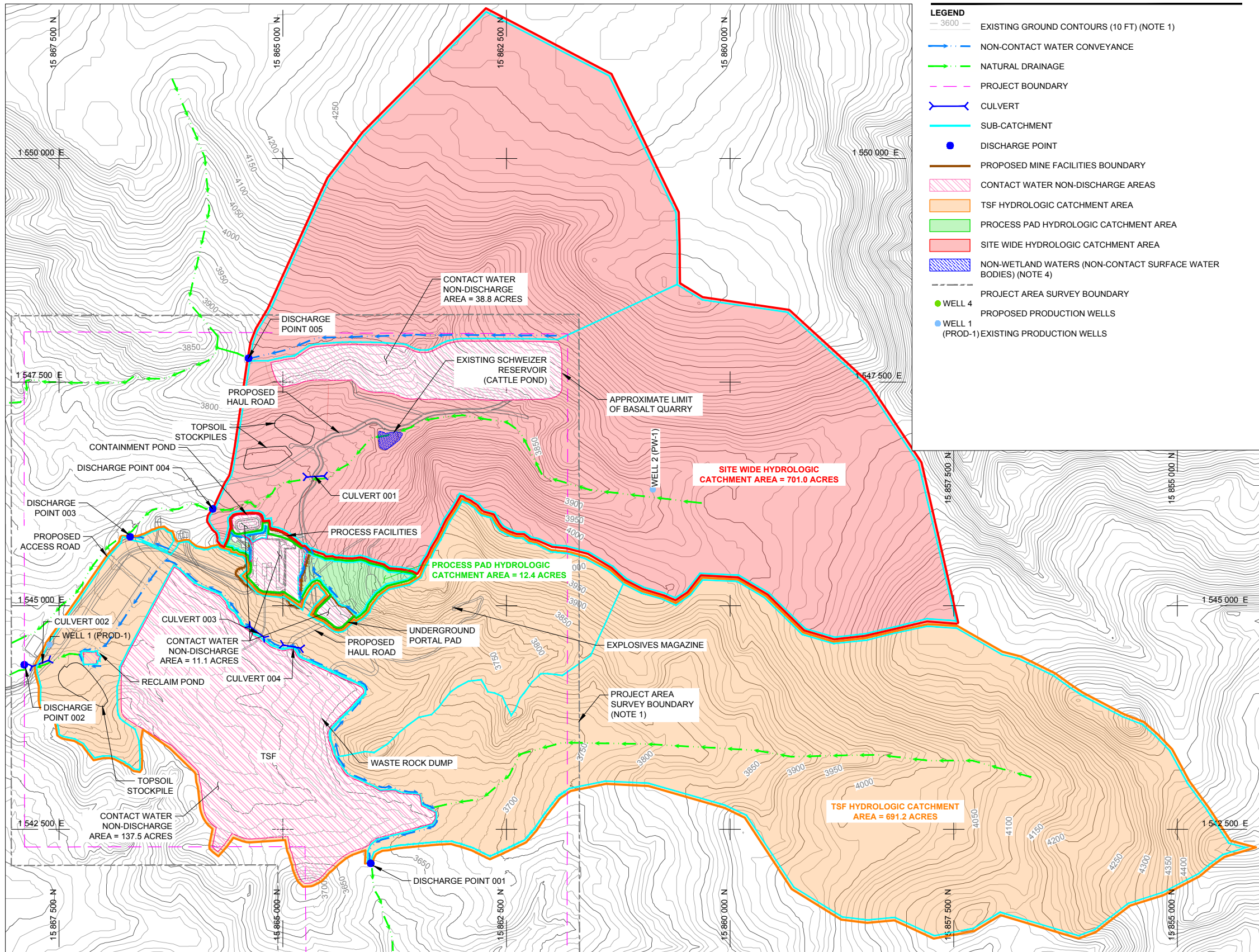
5.0 REFERENCES

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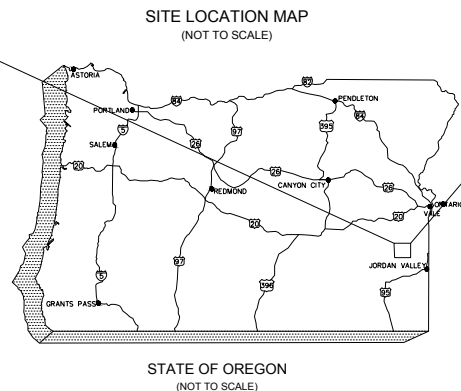
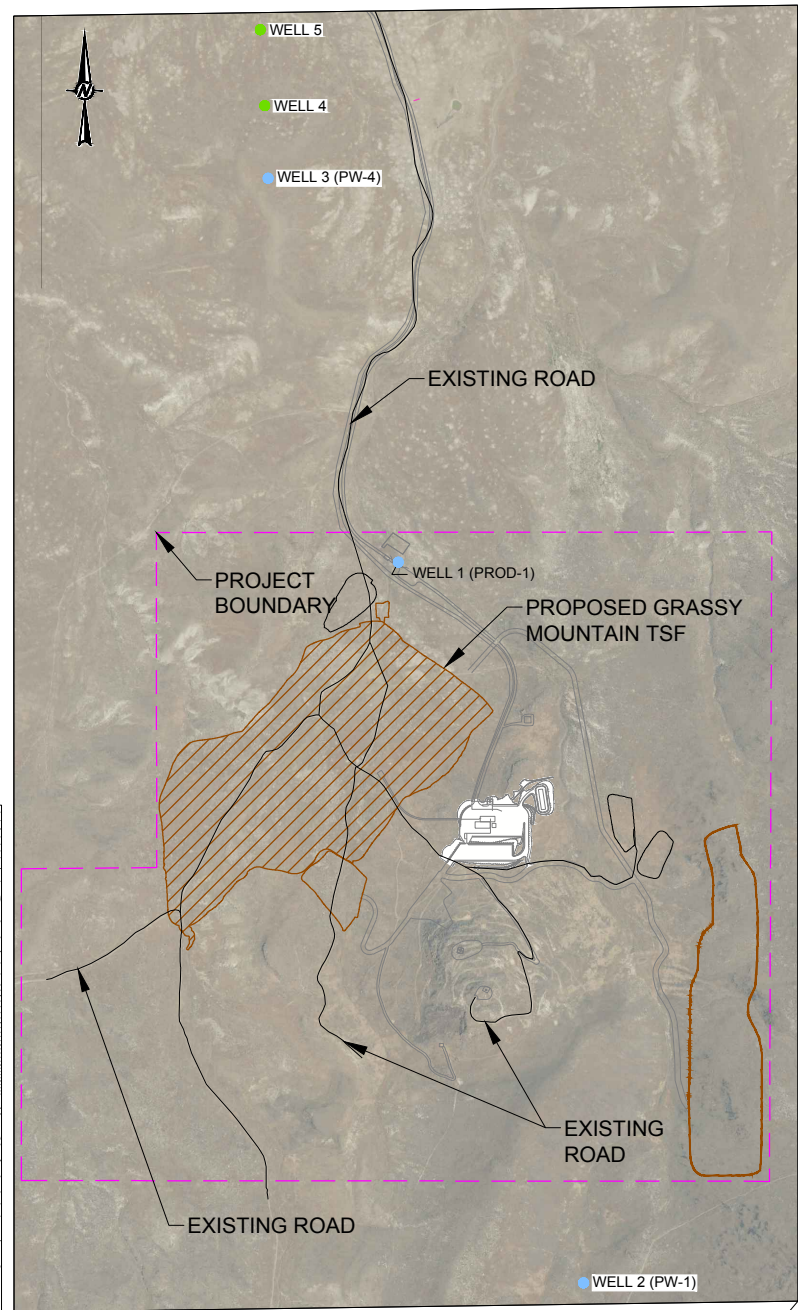
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Figures

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- LEGEND**
- EXISTING GROUND CONTOURS (10 FT) (NOTE 1)
 - NON-CONTACT WATER CONVEYANCE
 - NATURAL DRAINAGE
 - PROJECT BOUNDARY
 - CULVERT
 - SUB-CATCHMENT
 - DISCHARGE POINT
 - PROPOSED MINE FACILITIES BOUNDARY
 - CONTACT WATER NON-DISCHARGE AREAS
 - TSF HYDROLOGIC CATCHMENT AREA
 - PROCESS PAD HYDROLOGIC CATCHMENT AREA
 - SITE WIDE HYDROLOGIC CATCHMENT AREA
 - NON-WETLAND WATERS (NON-CONTACT SURFACE WATER BODIES) (NOTE 4)
 - PROJECT AREA SURVEY BOUNDARY
 - WELL 4
 - WELL 1 (PROD-1) EXISTING PRODUCTION WELLS



- NOTE(S)**
- EXISTING GROUND TOPOGRAPHY WITHIN THE PROJECT AREA SURVEY BOUNDARY WAS PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf". TOPOGRAPHY OUTSIDE THE PROJECT AREA SURVEY BOUNDARY WAS AVAILABLE FROM WEBGIS DIGITAL ELEVATION MODELS WITH 30 m RESOLUTION.
 - AERIAL IMAGERY PERFORMED BY CALICO RESOURCES USA CORP. AND PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "Orthophoto_1ft_ExpandedArea.tif".
 - PROJECT AREA BOUNDARY PROVIDED BY PARAMOUNT ON JANUARY 12, 2017 IN AN ELECTRONIC FILE TITLED "grassy_mtn_updated_permitareaboundary.dxf".
 - WETLAND DELINEATION COMPLETED BY EM STRATEGIES IN FEBRUARY 2018 REPORTED IN *WETLAND DELINEATION REPORT, GRASSY MOUNTAIN MINE PROJECT, MALHEUR COUNTY, OREGON* FOR CALICO RESOURCES USA CORP.



CLIENT
CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT



YYYY-MM-DD	2023-03-16
DESIGNED	JRP
PREPARED	CPR
REVIEWED	
APPROVED	

PROJECT
GRASSY MOUNTAIN
STORMWATER DISCHARGE
GENERAL PERMIT 1200-Z

TITLE
GRASSY MOUNTAIN MINE SITE LOCATION
AND DRAINAGE MAP

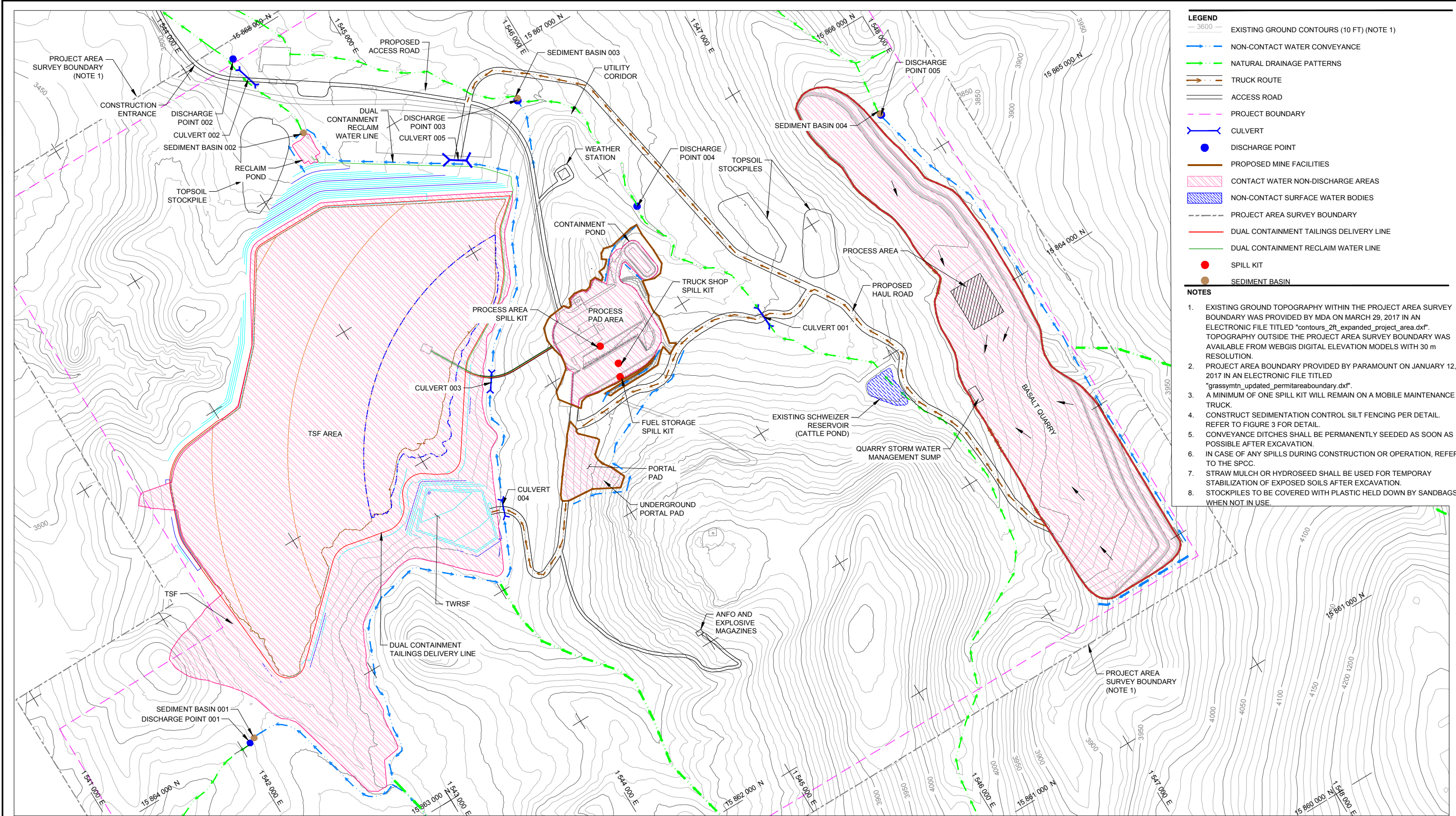
PROJECT NO.
1663241

REV.
2

FIGURE
1

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3/D

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LEGEND

- EXISTING GROUND CONTOURS (10 FT) (NOTE 1)
- NON-CONTACT WATER CONVEYANCE
- NATURAL DRAINAGE PATTERNS
- TRUCK ROUTE
- ACCESS ROAD
- PROJECT BOUNDARY
- CULVERT
- DISCHARGE POINT
- PROPOSED MINE FACILITIES
- CONTACT WATER NON-DISCHARGE AREAS
- NON-CONTACT SURFACE WATER BODIES
- PROJECT AREA SURVEY BOUNDARY
- DUAL CONTAINMENT TAILINGS DELIVERY LINE
- DUAL CONTAINMENT RECLAIM WATER LINE
- SPILL KIT
- SEDIMENT BASIN

NOTES

- EXISTING GROUND TOPOGRAPHY WITHIN THE PROJECT AREA SURVEY BOUNDARY WAS PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf". TOPOGRAPHY OUTSIDE THE PROJECT AREA SURVEY BOUNDARY WAS AVAILABLE FROM WEBGIS DIGITAL ELEVATION MODELS WITH 30 m RESOLUTION.
- PROJECT AREA BOUNDARY PROVIDED BY PARAMOUNT ON JANUARY 12, 2017 IN AN ELECTRONIC FILE TITLED "grassymtn_updated_permitareaboundary.dxf".
- A MINIMUM OF ONE SPILL KIT WILL REMAIN ON A MOBILE MAINTENANCE TRUCK.
- CONSTRUCT SEDIMENTATION CONTROL SILT FENCING PER DETAIL. REFER TO FIGURE 3 FOR DETAIL.
- CONVEYANCE DITCHES SHALL BE PERMANENTLY SEEDED AS SOON AS POSSIBLE AFTER EXCAVATION.
- IN CASE OF ANY SPILLS DURING CONSTRUCTION OR OPERATION, REFER TO THE SPCC.
- STRAW MULCH OR HYDROSEED SHALL BE USED FOR TEMPORARY STABILIZATION OF EXPOSED SOILS AFTER EXCAVATION.
- STOCKPILES TO BE COVERED WITH PLASTIC HELD DOWN BY SANDBAGS WHEN NOT IN USE.



0 300 600
1" = 300' FEET

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CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT



YYYY-MM-DD	2023-03-16
DESIGNED	JRP
PREPARED	CPR
REVIEWED	SCH
APPROVED	CJM

PROJECT
GRASSY MOUNTAIN
STORMWATER POLLUTION CONTROL PLAN
GENERAL PERMIT 1200-Z

TITLE
SITE LAYOUT MAP

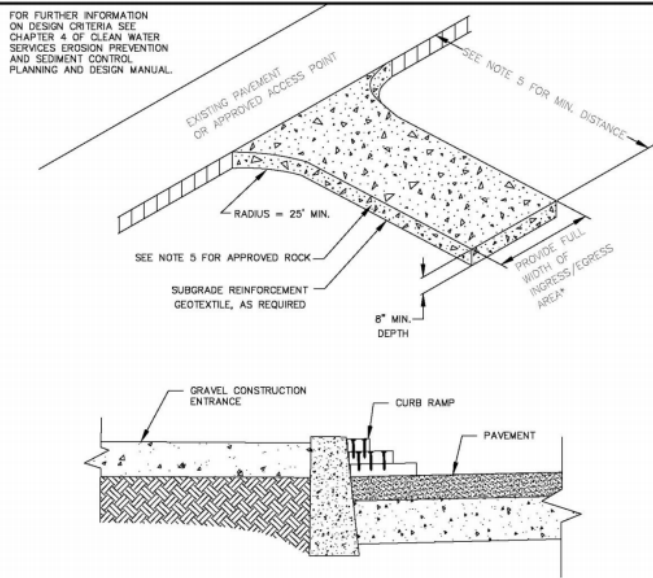
PROJECT NO.
1663241

REV.
2

FIGURE
2

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3 AND

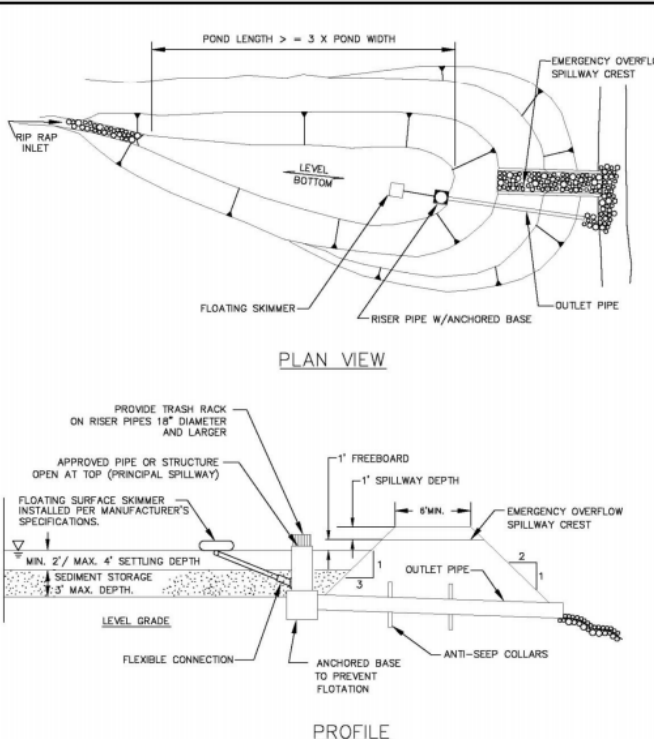
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CONSTRUCTION ENTRANCE

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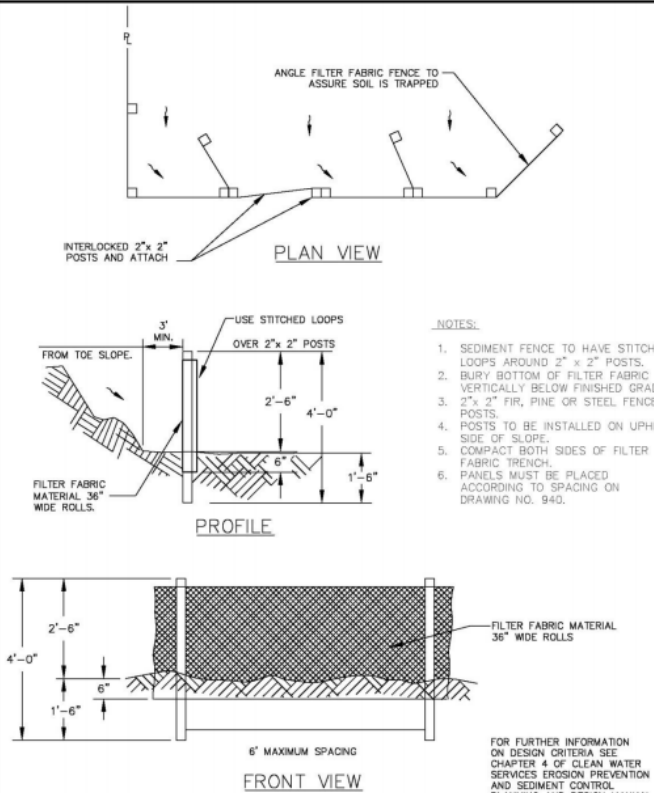
REVISED 10-31-19



SEDIMENT BASIN

DRAWING NO. 935

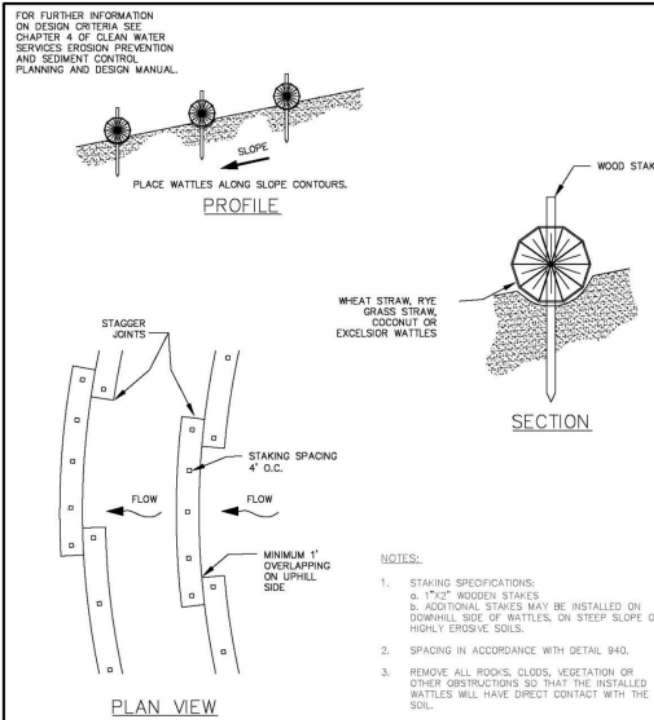
REVISED 10-31-19



SEDIMENT FENCE

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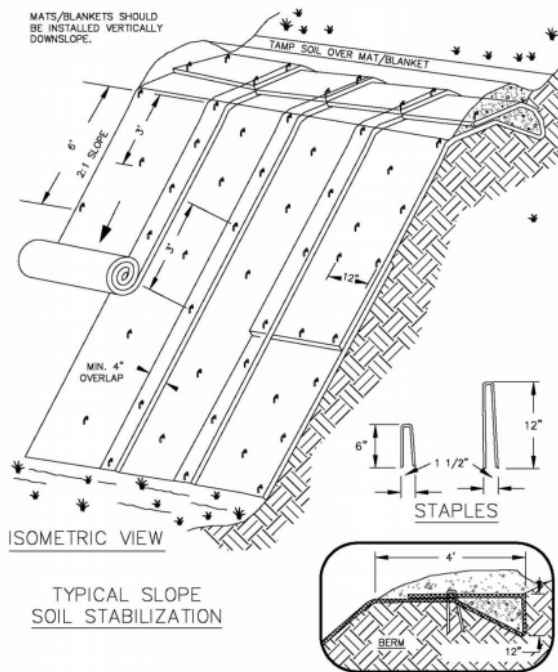
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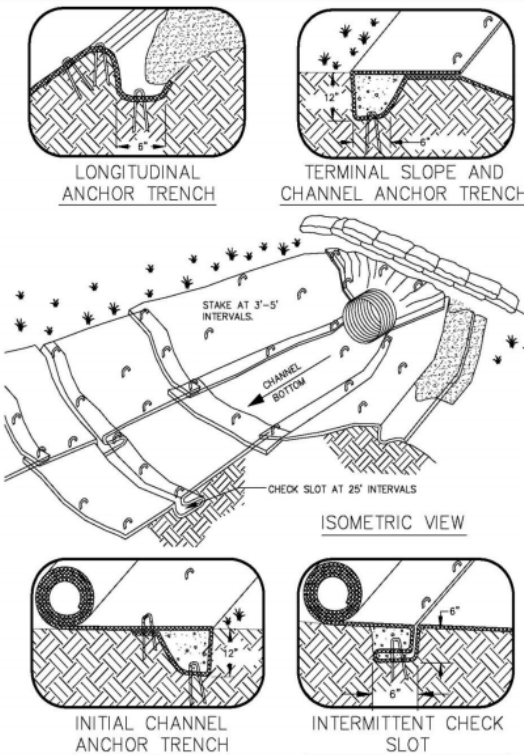
REVISED 10-31-19



MATting SLOPE INSTALLATION

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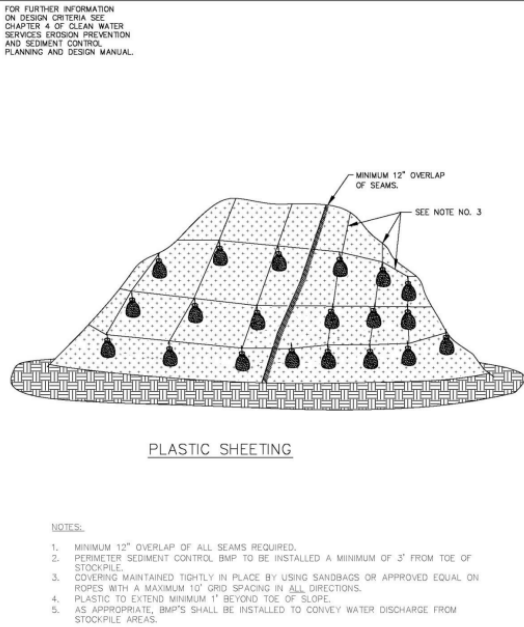
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MATting CHANNEL INSTALLATION

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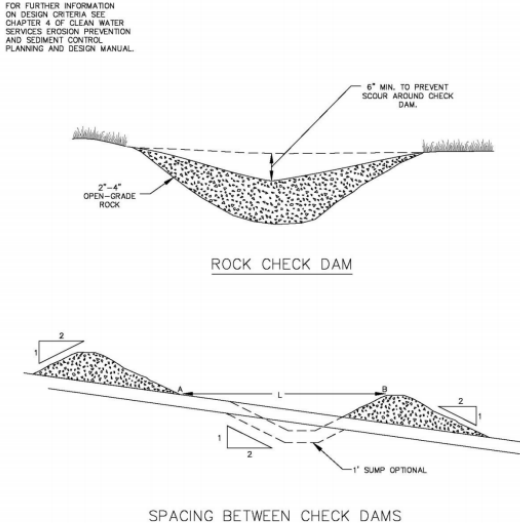
REVISED 10-31-19



PLASTIC SHEETTING

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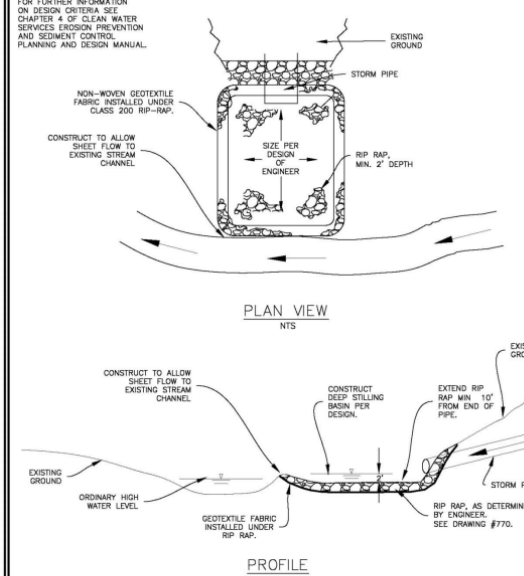
REVISED 10-31-19



CHECK DAM
ROCK

DRAWING NO. 840

REVISED 10-31-19



OUTLET PROTECTION
STILLING BASIN

DRAWING NO. 825

REVISED 10-31-19

CLIENT
CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT



YYYY-MM-DD 2023-03-16
DESIGNED CLEANWATER SERVICES
PREPARED CJM
REVIEWED CJM
APPROVED CJM

PROJECT
GRASSY MOUNTAIN
STORMWATER DISCHARGE
GENERAL PERMIT 1200-Z

TITLE
BMP DETAILS

PROJECT NO.
1663241

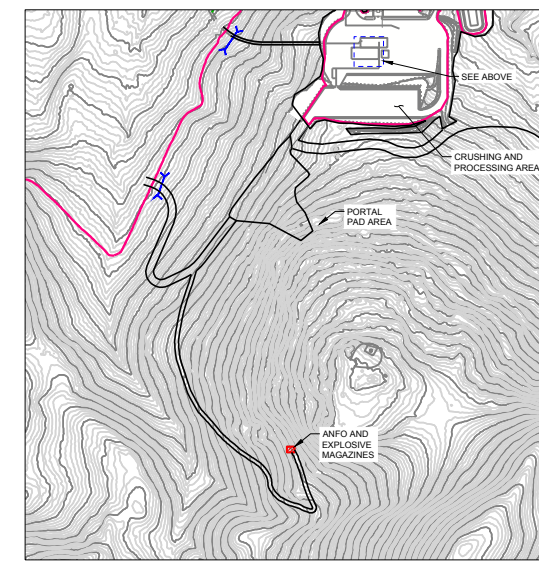
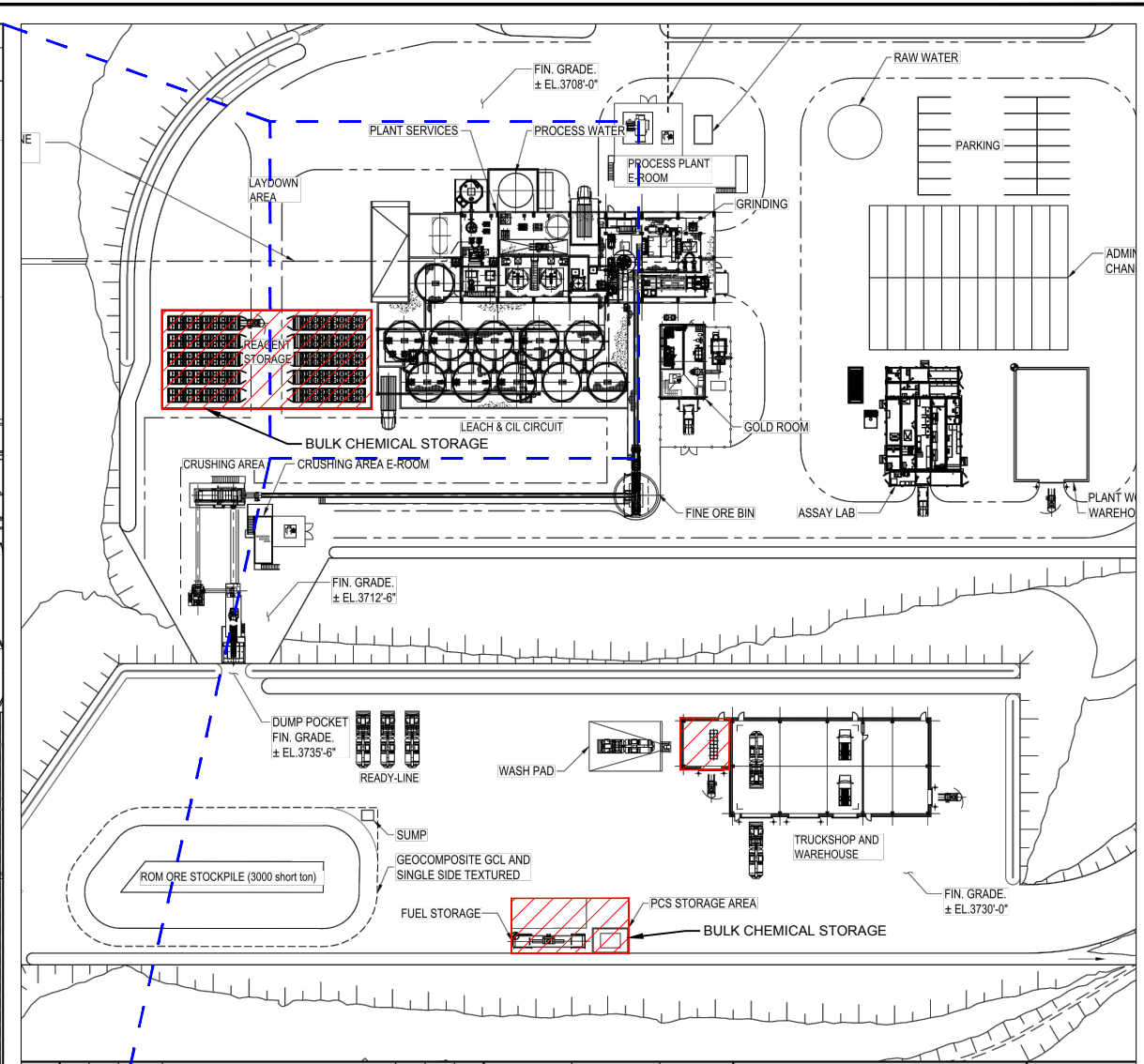
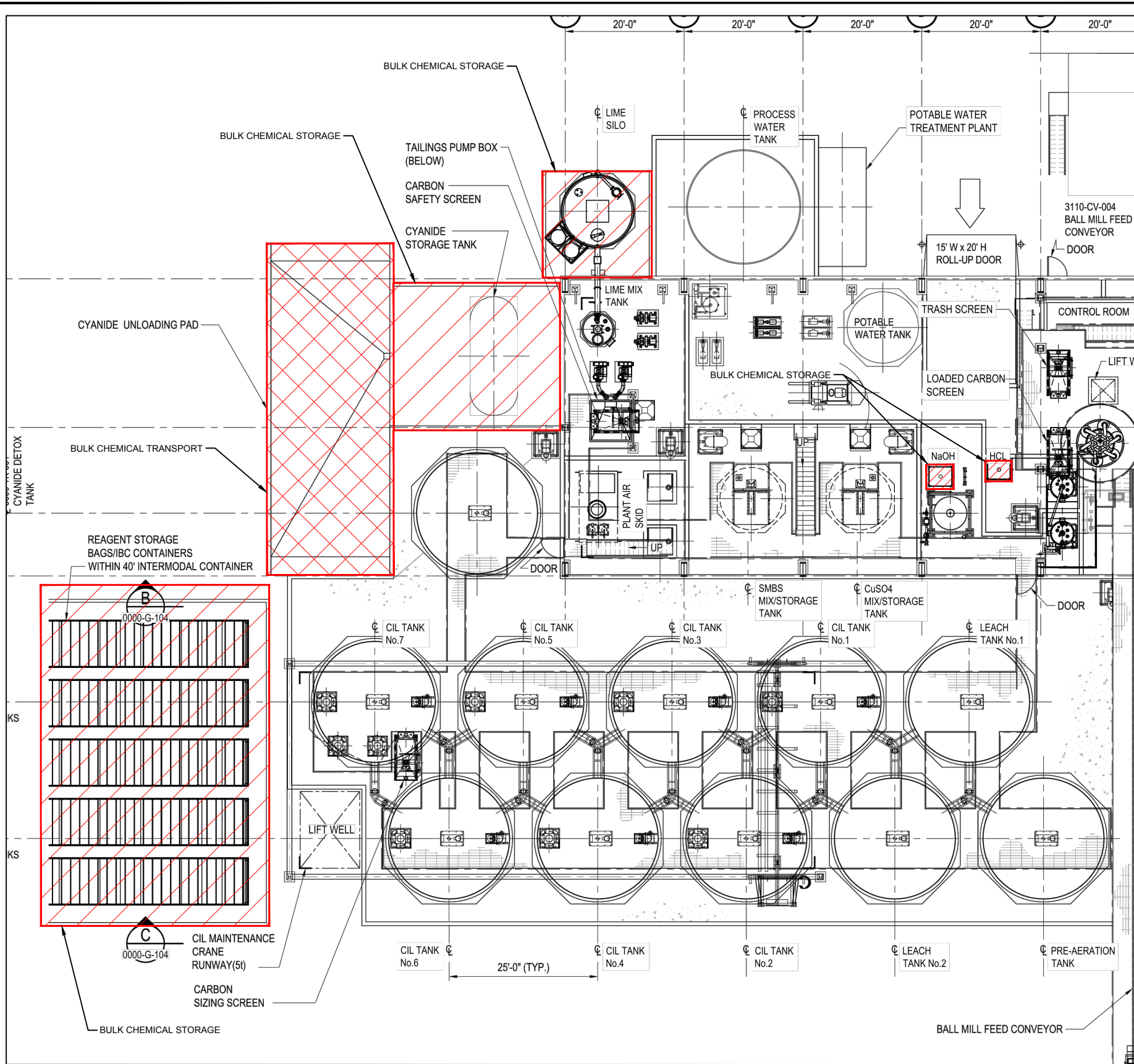
REV.
2

FIGURE
3

1. BMP DETAILS REFERENCE OREGON STANDARD DRAWINGS, SHEET EC-8.0, SEPTEMBER 28TH, 2020.

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DRAWING NOT TO SCALE

NOTE(S)
1. PROCESS PLANT DRAWINGS PROVIDED BY AUSENCO ON SEPTEMBER 6, 2022 IN AN ELECTRONIC FILE TITLED MILL DESIGN REPORT 2022.

LEGEND
[Red Hatched Box] BULK CHEMICAL TRANSFER
[Red Cross-Hatched Box] BULK CHEMICAL STORAGE
[Blue Dashed Line] ENHANCED SECTION VIEW PROVIDED

CLIENT
CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT	YYYY-MM-DD	2023-03-13
DESIGNED		
PREPARED	JTB	
REVIEWED	CJM	
APPROVED	CJM	

PROJECT
GRASSY MOUNTAIN
STORMWATER DISCHARGE
GENERAL PERMIT 1200-Z

TITLE	LOCATIONS FOR BULK CHEMICAL STORAGE AND TRANSFER
PROJECT NO.	1663261
REV.	2
FIGURE	4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

APPENDIX A

Oregon Industrial Stormwater General Permit (1200-Z Permit) and Grassy Mountain Permit Assignment Letter

GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
INDUSTRIAL STORMWATER DISCHARGE PERMIT No. 1200-Z
Department of Environmental Quality
700 NE Multnomah St., Suite #600 Portland, OR 97232
Telephone: (503) 229-5630 or 1-800-452-4011 toll free in Oregon
Issued pursuant to ORS 468B.050 and the Federal Clean Water Act

REGISTERED TO:

SOURCES COVERED UNDER THIS PERMIT:

A facility that may discharge industrial stormwater to surface waters or to conveyance systems that discharge to surface waters of the state and,

1. The stormwater is associated with an industrial activity identified in Table 1: Sources Covered or listed in Table 2: Additional Industrial Activities Covered; or
2. The facility is notified in writing the Director determines coverage under this permit is required for its stormwater discharges pursuant to 40 CFR 122.26(a)(9)(i)(D).

Note:

1. Facilities may apply for conditional exclusion from the requirement to obtain coverage under this permit if there is no exposure of industrial activities and materials to stormwater pursuant to 40 CFR §122.26(g); see Permit Coverage and Exclusion from Coverage.
2. The following are not eligible to obtain coverage under this permit:
 - i. Construction activities. This activity is covered under a separate general permit.
 - ii. Any source with primary Standard Industrial Classification codes 2951 and 3273, including mobile asphalt and concrete batch plants; and Standard Industrial Classification code 14, Mining and Quarrying of Nonmetallic Minerals, Except Fuels. These activities are covered under a separate general permit.
 - iii. Any source that has obtained an individual NPDES permit for the discharge, unless the source is otherwise eligible for coverage under this permit and DEQ has approved the source's application for coverage under this general permit.
 - iv. Any source that discharges to a sanitary sewer system and the discharge is approved by the sanitary sewer operator.

Issuance Date: March 25, 2021

Justin Green, Administrator
Water Quality Division

PERMITTED ACTIVITIES

Until this permit expires, is modified, or revoked, the permit registrant is authorized to construct, install, modify, or operate stormwater treatment or control facilities, and to discharge stormwater and non-stormwater discharges specifically authorized by the permit to surface waters of the state in conformance with all the requirements, limitations, and conditions set forth in the following:

CONDITION I	5
PERMIT COVERAGE AND EXCLUSION FROM COVERAGE	5
SCHEDULE A	10
EFFLUENT LIMITATIONS AND PERMIT COMPLIANCE	10
WATER QUALITY-BASED EFFLUENT LIMITATIONS	13
STORMWATER DISCHARGE	14
STORMWATER POLLUTION CONTROL PLAN	15
BENCHMARK EXCEEDANCES AND VISUAL OBSERVATION CORRECTIVE ACTIONS	20
CATEGORY 5: 303(d) LIST IMPAIRMENT EXCEEDANCE RESPONSE	23
PERMIT COMPLIANCE	25
SCHEDULE B	26
MONITORING REQUIREMENTS	26
INSPECTIONS	33
REPORTING AND RECORDKEEPING REQUIREMENTS	34
SCHEDULE C	38
COMPLIANCE SCHEDULES	38
SCHEDULE D	40
SPECIAL CONDITIONS	40
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SCHEDULE F	130
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Unless specifically authorized by this permit, by regulation issued by EPA, by another NPDES permit, or by Oregon Administrative Rule or Oregon Revised Statute, any other direct or indirect discharge to waters of the state is prohibited, including non-stormwater discharges to an underground injection control system.

Schedule E contains sector-specific federal requirements. Schedule F contains General Conditions that are included in all general permits issued by DEQ. If conflicts arise between Schedule E or Schedule F and any other schedule of the permit, the requirements in Schedule E or Schedule F may not apply.

Table 1: Sources Covered

Industrial Sources Covered Under this Permit
Facilities with the following primary Standard Industrial Classification (SIC) codes: 10 Metal Mining 12 Coal Mining 13 Oil and Gas Extraction 20 Food and Kindred Products 21 Tobacco Products 22 Textile Mill Products 23 Apparel and Other Finished Products Made From Fabrics and Similar Material 24 Lumber and Wood Products, Except Furniture (Activities with SIC 2411 Logging that are defined in 40 CFR §122.27 as silvicultural point source discharges are covered by this permit.) 25 Furniture and Fixtures 26 Paper and Allied Products 27 Printing, Publishing and Allied Industries 28 Chemicals and Allied Products Manufacturing and Refining (excluding 2874: Phosphatic Fertilizers) 29 Petroleum Refining and Related Industries (excluding 2951, covered by 1200-A) 30 Rubber and Miscellaneous Plastics Products 31 Leather and Leather Products 32 Glass, Clay, Cement, Concrete and Gypsum Products (excluding 3273, covered by 1200-A) 33 Primary Metal Industries 34 Fabricated Metal Products 35 Industrial and Commercial Machinery and Computer Equipment 36 Electronic and Other Electrical Equipment and Components, Except Computer Equipment 37 Transportation Equipment 38 Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks 39 Miscellaneous Manufacturing Industries 4221 Farm Product Warehousing and Storage 4222 Refrigerated Warehousing and Storage 4225 General Warehousing and Storage 5015 Motor Vehicle Parts, Used 5093 Scrap and Waste Materials
Facilities with the following primary SIC codes that have vehicle maintenance shops (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or airport deicing operations¹: 40 Railroad Transportation 41 Local and Suburban Transit and Interurban Highway Passenger Transportation 42 Trucking and Courier Services, Except Air (excluding 4221, 4222, and 4225) 43 United States Postal Service 44 Water Transportation 45 Transportation by Air 5171 Petroleum Bulk Stations and Terminals, except petroleum sold via retail method
Steam Electric Power Generation including coal handling sites
Landfills, land application sites and open dumps
Hazardous Waste Treatment, storage and disposal facilities
Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, recycling, and reclamation of municipal or domestic sewage (including land dedicated to the disposal of sewage sludge that are located within the confines of the facility) with the design flow capacity of 1.0 mgd or more, or required to have a pretreatment program under 40 CFR §403

¹Eligibility based on auxiliary operations; however, once covered all stormwater discharge associated with industrial activities are regulated under this permit.

Facilities that discharge stormwater into the Columbia Slough or Portland Harbor that is exposed to any of the industrial activities listed in Table 2 below, are eligible to obtain permit coverage under the NPDES 1200-Z permit.

Table 2: Additional Industrial Activities Covered

Discharges to Columbia Slough and Portland Harbor
Maintenance of vehicles, machinery, equipment, and trailers (including repairs, servicing, washing, testing and painting)
Storage of vehicles, machinery, equipment (including disposal/refuse containers stored by a disposal/refuse contractor/vendor), and trailers (including rental, sales, wrecked vehicles, fleet, and general storage)
Materials storage (including raw materials; bulk fuels, chemicals, detergents, and plastic pellets; finished materials; lumber and food products; wholesale gravel, sand, and soil stockpiles; and bulk liquids other than water)
Waste handling (including recycled product storage, composting, tires, and bulk hazardous waste)
Commercial animal operations (such as kennels, race tracks, and veterinarians not covered under a Confined Animal Feeding Operation permit)
Fuel distribution and sales (including bulk stations, fuel oil dealers, manned and unmanned retail stations, fleet fueling, mobile fueling, and truck stops)
Any former activity that resulted in significant materials (as defined in Schedule D) remaining on-site

CONDITION I

PERMIT COVERAGE AND EXCLUSION FROM COVERAGE

1. New Discharger to Impaired Waters (see Schedule D.3, Definitions)

- a. A new discharger to an impaired water without a Total Maximum Daily Load (TMDL), based on the EPA-approved Category 5: 303(d) list in effect at the time of permit application for pH, copper, lead, zinc, iron, and E. coli that correspond to the specific pollutant(s) for which the water body is impaired must meet one of the following conditions to obtain coverage under this permit:
 - i. Prevent exposure to stormwater for pH, copper, lead, zinc, iron and E. coli that correspond to the specific pollutant(s) for which the water body is impaired. Document the procedures taken to prevent exposure in the Stormwater Pollution Control Plan (SWPCP).
 - ii. Provide technical demonstrations that sources of pH, copper, lead, zinc, iron and E.coli that correspond to the specific pollutant(s) for which the water body is impaired are not present at the site and document these findings and considerations in the SWPCP.
 - iii. Provide DEQ or agent stormwater discharge analytical sampling results to demonstrate the discharge of stormwater is not expected to cause or contribute to an exceedance of water quality standards for pH, copper, lead, zinc, iron and E. coli that correspond to the specific pollutant(s) for which the water body is impaired at the point of discharge and retain in the SWPCP.
- b. If unable to demonstrate pH, copper, lead, zinc, iron and E. coli that correspond to the specific pollutant(s) for which the water body is impaired will not be present in the discharge, provide DEQ or agent with other technical information that demonstrates the discharge is not expected to cause or contribute to an exceedance of water quality standards at the point of discharge and document the rationale in the SWPCP.
 - i. Prior to DEQ granting coverage, DEQ or agent will determine and document that Condition I.1.a or b has been satisfied.
- c. A new discharge of pollutant may be authorized by this permit to an impaired water with a TMDL (based on EPA-approved TMDLs as of March 31, 2021) under one of the following circumstances:
 - i. The TMDL does not establish industrial stormwater wasteload allocations, the compliance with the terms and conditions of the permit is presumed consistent with the TMDL.
 - ii. The TMDL establishes industrial stormwater wasteload allocations, and DEQ determines that there is sufficient remaining loading capacity in the TMDL to allow for the new industrial stormwater discharge.
- d. If a new discharge to an impaired water is authorized under this permit, DEQ or agent will establish additional monitoring and site controls as necessary. DEQ or agent may determine a compliance schedule is necessary.
- e. DEQ may determine that coverage under an individual NPDES permit is required.
- f. Conditions I.1.a and I.1.c above do not apply if the waterbody is impaired for:
 - i. Biological communities (biocriteria), including harmful algal blooms and aquatic weeds, where no pollutant including indicator or surrogate pollutants, is specified as causing the impairment; or
 - ii. Temperature, habitat and flow modifications.

2. Application Requirements for New Permit Coverage

- a. The following conditions apply to:
 - i. New facility: Submit a complete application to DEQ or agent (see Schedule D.4 for description of agent) at least 60 calendar days before initiating the activity that requires permit coverage, unless DEQ or agent approved a later date.
 - ii. Existing facility with stormwater discharges associated with industrial activities identified in Table 1 or Table 2 operating without coverage under any NPDES permit for those discharges: Immediately submit a complete application to DEQ or agent, unless DEQ or agent approved a later date.
 - iii. Existing facility that is designated by the Director as needing a stormwater permit pursuant to 40 CFR §122.26(a)(9)(i)(D): No later than 60 calendar days of being notified by DEQ that permit coverage is required, submit a complete application to DEQ or agent.
 - iv. Existing facility with stormwater discharges authorized by an individual NPDES permit that seeks coverage under this permit: Submit a complete application to DEQ or agent and a copy of the individual NPDES permit.
- b. A complete web-based electronic application, as required by DEQ, must include the following:
 - i. Applicable permit fees;
 - ii. DEQ-approved application form;
 - iii. A determination, on a DEQ-approved form, from the local government agency with land use jurisdiction that states the use is compatible with acknowledged local land use plans; and
 - iv. One PDF copy of the SWPCP.
- c. DEQ will accept paper applications:
 - i. With an approved waiver from electronic submission; or
 - ii. Until directed by DEQ.
- d. Permit Coverage
 - i. Prior to granting the applicant coverage under this permit, DEQ will provide a 30 calendar day public notice period on the applicant's SWPCP. DEQ or agent will respond to any applicable public comments.
 - ii. DEQ will notify the applicant if coverage is granted or denied. When coverage is granted, DEQ or agent will specify and communicate monitoring requirements to the permit registrant.
- e. If coverage is denied or the applicant does not wish to be regulated by this permit, the applicant must apply for an individual permit in accordance with OAR 340-045-0030 or cease discharge.

3. Existing Facilities Covered Under the 1200-Z NPDES General Permit Reissued in 2018

- a. DEQ will notify existing permit registrants of assignment under the current permit. Permit registrants that seek uninterrupted coverage must submit an updated SWPCP to DEQ or agent by August 31, 2021, unless DEQ or agent approved a later date.
- b. Existing permitted facilities must comply with the implementation deadlines established under the previous 1200-Z NPDES permit, including Tier 2 corrective action requirements.
- c. Existing permitted facility that intend to change industrial processes at the site to an new primary industrial sector must submit the following to DEQ or agent at least 60 calendar days before initiating the planned change:

- i. A determination, on a DEQ-approved form, from the local government agency with land use jurisdiction that states the new industrial use is compatible with acknowledged local land use plans;
- ii. A revised SWPCP; and
- iii. Environmental management plan review fee.
- d. DEQ will provide a 30 calendar day public notice period on the revised SWPCP.
- e. DEQ or agent will specify and communicate monitoring requirements to the permit registrant.

4. Name Change or Transfer of Permit Coverage

- a. For a name change or transfer of permit coverage between legal entities, the new owner or operator must submit a web-based electronic transfer or legal name change to DEQ, when directed by DEQ a paper form is no longer accepted, no later than 30 calendar days after the name change or transfer of control of the facility is complete. A complete name change or transfer must include the following:
 - i. One Name Change and/or Permit Transfer form;
 - ii. One PDF copy of an updated SWPCP; and
 - iii. Permit transfer, legal name change fee.
- b. DEQ will notify the applicant if the name change or transfer is approved or denied.
- c. Transfer of permit coverage between legal entities where there will also be a change in an industrial processes at the site to a new primary industrial sector are ineligible for permit transfer. The new owner or operator must submit an application for new permit coverage under this permit as required in Condition I.2 above.

5. “No Exposure” Conditional Exclusion from Permit Coverage

- a. An owner or operator that applies for a “no exposure” conditional exclusion under 40 CFR §122.26(g) from coverage under this permit must:
 - i. Protect industrial materials and activities from exposure to rain, snow, snowmelt, and runoff by using a storm resistant shelter, except as provided in the Environmental Protection Agency (EPA) Guidance Manual for Conditional Exclusion from Stormwater Permitting Based on “No Exposure” of Industrial Activities to Stormwater (EPA 833-B-00-001, June 2000) and EPA’s Fact Sheet on Conditional No Exposure Exclusion for Industrial Activity (EPA 833-F-00-015, revised December 2005). Storm resistant shelters with unsealed zinc or copper roofing materials are not eligible for the “no exposure” conditional exclusion;
 - ii. Ensure that known significant materials from previous operations are controlled, removed or otherwise not exposed to stormwater.
 - iii. When directed to do so by DEQ, complete and sign a web-based electronic DEQ-approved certification, that there is no stormwater exposure to industrial materials and activities from the entire facility, otherwise submit in paper format.
 - iv. Submit the signed certification to DEQ or agent once every five years, beginning five years after the date of first submittal. If DEQ or agent does not comment on the “no exposure” certification within 60 calendar days, the “no exposure” conditional exclusion is deemed approved. DEQ or agent may notify the applicant of its approval. The owner or operator must keep a copy of the approved certification on-site.

- v. Allow DEQ or agent to inspect the facility to determine compliance with the “no exposure” conditions listed above; and
- vi. If the facility discharges through a municipal separate storm sewer system (MS4) submit a copy of the “no exposure” certification to the MS4 operator (for example, local municipality or district), if requested, and allow inspection and public reporting by the MS4 operator.
- b. Limitations for obtaining or maintaining the exclusion:
 - i. This exclusion is available on a facility-wide basis only, not for individual discharge points.
 - ii. If any industrial materials or activities become exposed to rain, snow, snowmelt, or runoff, the conditions for this exclusion no longer apply. In such cases, the discharge becomes subject to enforcement. Any conditionally exempt discharger who anticipates changes in circumstances must apply for and obtain permit coverage before the change of circumstances.
 - iii. DEQ or agent retains the authority to determine that the “no exposure” conditional exclusion no longer applies and require the owner or operator to obtain permit coverage.

6. Authorized Non-Stormwater Discharges

- a. Subject to the terms and conditions of the permit and Oregon law, the following non-stormwater discharges are authorized:
 - i. Discharges from emergency or unplanned fire-fighting activities;
 - ii. Fire hydrant flushing and maintenance;
 - iii. Potable water, including water line flushing;
 - iv. Uncontaminated condensate from air conditioners, coolers, chillers and other compressors, and from outside storage of refrigerated gases and liquids;
 - v. Landscape watering and irrigation drainage;
 - vi. Exterior vehicle wash water that does not use hot water or detergent; restricted to less than eight per week;
 - vii. Pavement wash water that does not use hot water, detergent or other cleaning products, no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed), and surfaces are swept before washing;
 - viii. Routine external building wash down that does not use hot water, detergent or other cleaning products;
 - ix. Uncontaminated ground water or spring water;
 - x. Foundation or footing drains where flows are not contaminated with process materials; and
 - xi. 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 blowdown or drains).

7. Limitations on Coverage

- a. Pursuant to OAR 340-045-0033(10), DEQ may deny permit coverage to an applicant or revoke existing coverage under this permit and require the owner or operator to apply for and obtain an individual permit.
- b. The permit registrant must separate any piping of interior floor drains and process wastewater discharge points from the storm drainage system to prevent unpermitted discharge of pollutants to waters of the state. Discharge from floor drains to the stormwater drainage system is a violation of this permit.

- c. Any other wastewater discharge or disposal, including stormwater mixed with wastewater is not authorized under this permit and must be permitted in a separate permit, unless the wastewater is reused or recycled without discharge or disposal, or is discharged to the sanitary sewer with approval from the sanitary sewer system operator.
- d. Except for sectors G, H, L and K in accordance with Schedule E, construction stormwater discharge resulting from disturbance of an acre or more is not authorized.
- e. Coverage under this permit is not available under the following circumstances:
 - i. If all stormwater discharges are regulated by another NPDES permit, except a MS4 permit.
 - ii. If stormwater discharges were included in a permit that has been or is in the process of being denied, terminated or revoked unless the source is otherwise eligible for coverage under this permit and DEQ approves the source's application to register under this permit and simultaneously revokes coverage under the other permit pursuant to OAR 340-045-0033(8).
 - iii. If stormwater discharge is covered under an individual NPDES permit that establishes site-specific numeric water quality-based effluent limitations.
 - iv. For a new discharger to waters designated as Outstanding Resource Waters for antidegradation purposes under 40 CFR 131.12(a)(3) and OAR 340-041-0004.
- f. Any operator eligible for coverage not seeking coverage under this general permit must apply for an individual NPDES permit in accordance with the procedures in OAR 340-045-0030.

SCHEDULE A

EFFLUENT LIMITATIONS AND PERMIT COMPLIANCE

1. Narrative Technology-based Effluent Limits

The permit registrant must meet the following narrative technology-based effluent limits and additional sector-specific limits in Schedule E of this permit, if applicable.

- a. Minimize exposure - Minimize exposure of manufacturing, processing, material storage areas, loading and unloading, disposal, cleaning, maintenance and fixed fueling areas to rain, snow, snowmelt and runoff. To the extent technologically available and economically practicable and achievable in light of best industry practice, the permit registrant must do the following:
 - i. Locate materials and activities indoors or protect them with storm resistant covers if stormwater from affected areas may discharge to surface waters. Acceptable covers include, permanent structures such as roofs or buildings or properly secured temporary covers such as tarps;
 - ii. Use grading, berming, or curbing to divert stormwater away from these areas and prevent stormwater contamination;
 - iii. Locate materials, equipment and activities in containment and diversion systems, including the storage of leaking or leak-prone vehicles and equipment awaiting maintenance, to prevent leaks and spills from contaminating stormwater;
 - iv. Use drip pans or absorbents under or around leaking or leak-prone vehicles/equipment or store indoors;
 - v. Drain fluids from equipment and vehicles prior to on-site storage or disposal;
 - vi. Perform all cleaning operations indoors, under cover or in bermed areas that prevent runoff and run-on and also captures overspray, unless allowed by Condition I.6; and
 - vii. All wash water must be managed indoors or in bermed areas, disposed into sanitary sewer or drain to a proper collection system such as a closed-loop system or vegetated area that does not discharge into the stormwater drainage system unless Condition I.6 which allows authorized non-stormwater discharge is met.
- b. Oil and Grease - Employ oil/water separators, booms, skimmers or other methods to eliminate or minimize oil and grease contamination in stormwater discharges.
- c. Waste Chemicals and Material Disposal - Recycle or properly dispose of wastes to eliminate or minimize exposure of pollutants to stormwater. Cover all waste contained in bins or dumpsters where there is a potential for drainage of stormwater through the waste to prevent exposure of stormwater to these pollutants. Acceptable covers include, storage of bins or dumpsters under roofed areas or use of lids or properly secured temporary covers such as tarps.
- d. Erosion and Sediment Control - Stabilize exposed areas, including areas where industrial activity has taken place in the past and significant materials remain, and contain runoff using structural and nonstructural controls to minimize erosion of soil at the site and sedimentation. Employ erosion control methods, such as vegetating exposed areas, graveling or paving to minimize erosion of soil at the site. Employ sediment control methods, such as detention facilities, vegetated filter strips, bioswales, flow velocity dissipation devices or other permanent erosion or sediment controls to minimize sediment loads in stormwater discharges. Identify any use of stabilization polymers or chemicals. For activities that involve land disturbance, the permit

registrant must contact the local municipality to determine if there are other applicable requirements related to stormwater control.

- e. Debris Control - Employ screens, booms, settling ponds, or other methods to eliminate or minimize waste, garbage and floatable debris in stormwater discharges and ensure that this debris is not discharged to receiving waters.
- f. Dust Generation and Vehicle Tracking of Industrial Materials - Minimize generation of dust, off-site tracking and discharge of soil, particulates and raw, final or waste materials.
- g. Housekeeping - Routinely clean all exposed areas that may contribute pollutants to stormwater with measures such as sweeping at regular intervals, litter pick-up, keeping materials orderly and labeled, promptly clean-up spills and leaks, proper maintenance of vehicles and stowing materials in appropriate containers.
- h. Spill Prevention and Response Procedure - Minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans that include methods for spill prevention and clean-up and notification procedures. At a minimum, the permit registrant must conduct spill prevention and response measures including the following:
 - i. Clean up spills or leaks promptly using absorbents or other effective methods to prevent discharge of pollutants and use spill/overflow protection equipment;
 - ii. Store all hazardous substances (see Schedule D.3, Definitions), petroleum/oil liquids, and other chemical solid or chemical liquid materials that have potential to contaminate stormwater within berms or other secondary containment devices to prevent leaks and spills. If the use of berms or secondary containment devices is not practicable, then store such substances in areas that do not drain off-site or into the storm sewer system;
 - iii. Plainly label containers to encourage proper handling and facilitate proper response if spills or leaks occur as required by local, state and federal rules;
 - iv. Implement preventative measures, such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
 - v. Develop procedures for expeditiously stopping, containing, and cleaning up leaks, spills and other releases. Make the methods and procedures available to appropriate personnel. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures. Have the necessary clean-up material on-site and readily available; and
 - vi. Procedures for notification of appropriate facility personnel, DEQ or agent, and the Oregon Emergency Response System (1-800-452-0311), when a spill may endanger health or the environment. Contact information must be in locations that are readily accessible and available.
- i. Preventative Maintenance - Regularly inspect, clean, maintain, and repair all industrial equipment and systems and materials handling and storage areas that are exposed to stormwater to avoid situations that may result in leaks, spills, and other potential releases of pollutants discharged to receiving waters. Clean, maintain and repair all control measures, including stormwater structures and temporary measures, catch basins, and treatment facilities to ensure effective operation as designed and in a manner that prevents the discharge of pollution.
- j. Employee Education - Develop and maintain an employee orientation and education program to inform personnel of the pertinent components and goals of this permit and the SWPCP.
 - i. Training must cover:

- (1) Specific control measures used to achieve the narrative technology-based effluent limits, such as spill response procedures and good housekeeping practices, and
 - (2) Monitoring, inspection, reporting and documentation requirements.
 - ii. The permit registrant must ensure that the following personnel are trained and understand the facility's specific requirements and their responsibilities:
 - (1) Personnel who are responsible for the design, installation, maintenance, or repair of controls including, pollution prevention and treatment measures;
 - (2) Personnel responsible for the storage and handling of chemicals and materials that could contribute pollutants to stormwater;
 - (3) Personnel who are responsible for conducting or documenting monitoring or inspections as required in Schedule B; and
 - (4) Personnel who are responsible for conducting and documenting corrective actions.
 - iii. Education and training must be documented and must occur:
 - (1) No later than 30 calendar days after hiring an employee who works in areas where stormwater is exposed to industrial activities or conducts duties related to the implementation of the SWPCP;
 - (2) No later than 30 calendar days after change in duties for key personnel in Schedule A.1.j.ii; and
 - (3) Annually thereafter.
 - iv. Education and training must be documented and include which specific employees received training. A log of training dates must kept on-site and submitted to DEQ or agent upon request.
- k. Non-Stormwater Discharges - Eliminate any non-stormwater discharges not authorized by a NPDES permit (see Condition I.6 for a list of authorized non-stormwater discharges).

2. Control Measures for Numeric and Narrative Technology-based Effluent Limits

- a. The permit registrant must select, design, install, implement and maintain control measures, including all best management practices (BMPs), to meet the narrative technology-based effluent limits in Schedule A.1, and Schedule E, and numeric technology-based effluent limitations guidelines in Schedule B.1 of this permit. The permit registrant must describe these measures, maintenance schedules and frequency of housekeeping measures in the SWPCP.
- b. For narrative and numeric technology-based effluent limits that require the permit registrant to minimize pollutants in the discharge, the permit registrant must reduce or eliminate pollutants to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. The term "minimize" is defined in Schedule D.3.
- c. In selecting the appropriate control measures to meet these limits, the permit registrant may consider the age of the equipment and facilities involved, the processes employed, the engineering aspects of the application of various types of control techniques, the pollutant reductions likely to be achieved, any adverse environmental or energy effects of potential measures, and the costs of achieving pollutant reductions.
- d. The permit registrant must install, implement and maintain the control measures in accordance with good engineering practices and manufacturers' specifications. Any deviation from the manufacturers' specifications must be explained in the SWPCP.

- e. DEQ or agent may require the permit registrant to take corrective actions to meet the narrative technology-based effluent limits in Schedule A.1 and Schedule E of this permit. Failure to implement any narrative technology-based effluent limits in Schedule A.1 and Schedule E, and other control measures or operational practices described in the SWPCP is a permit violation.
- f. If modifications to the control measures are necessary to meet technology-based effluent limits in this permit, the permit registrant must implement the modifications before the next storm event if practicable or no later than 30 calendar days from discovering the violation, unless DEQ or agent approve a later date.

WATER QUALITY-BASED EFFLUENT LIMITATIONS

3. Water Quality Standards

- a. The permit registrant must not cause or contribute to an exceedance of instream water quality standards as established in OAR 340-041.
- b. If at any time the permit registrant discovers, or DEQ or agent determines, that the discharge causes or contributes to an exceedance of instream water quality standards, the permit registrant must take the following corrective actions:
 - i. No later than 24-hours after the discovery or being informed of the determination by DEQ:
 - (1) Investigate the conditions that caused or contributed to the exceedance; and
 - (2) Review the SWPCP and the selection, design, installation and implementation of control measures to ensure compliance with this permit.
 - ii. No later than 30 calendar days after the discovery or determination, submit a Water Quality Standards Report to DEQ or agent that documents the following:
 - (1) The results of the permit registrant's investigation, including the date the exceedance was discovered and a brief description of the conditions that caused or contributed to the exceedance;
 - (2) Corrective actions taken or planned to be taken, including the date the corrective action was completed or is expected to be completed; and
 - (3) If the permit registrant determines that SWPCP revisions are necessary based on the investigation, the permit registrant must submit a revised SWPCP to DEQ or agent with the Water Quality Standards Report.
 - iii. The permit registrant must implement the corrective action before the next storm event, if possible, or no later than 30 calendar days after discovery or determination, whichever comes first unless DEQ or agent approved a later date.
- c. If information in the application, required reports, or from other sources indicates that the discharge has caused or contributed to an exceedance of water quality standards, either in the receiving waterbody or a downstream waterbody, DEQ will notify the permit registrant if any of the following are necessary:
 - i. Additional monitoring and site controls;
 - ii. A compliance schedule with a deadline for correcting the violation; or
 - iii. Permit revocation under this general permit, and require the permit registrant to obtain coverage under an individual permit.

- d. If DEQ or agent determines that additional site-specific requirements are necessary, the permit registrant must revise the SWPCP. DEQ will hold a 30 calendar day public notice period on the revised SWPCP.

4. Discharges to Impaired Waters

- a. Existing discharger to an impaired water without a TMDL based on EPA-approved Category 5: 303(d) list that is in effect at the time of permit assignment must comply with Schedule A.3 and:
 - i. The permit registrant that have complied with Condition I.1.a or b must implement and maintain any control measures or conditions on the site that enabled the permit registrant to become eligible for permit coverage. The permit registrant must modify such measures or conditions as necessary pursuant to Schedule A.2 and schedules outlined in the SWPCP.
 - ii. The permit registrant must comply with impairment pollutant monitoring in accordance with Schedules B.3, B.4 and B.5 and additional monitoring established by DEQ or agent. When the discharge enters an impaired watershed unit, the listing will only be applied if there is a hydrologic connection between the receiving water and assessment water body causing the impairment.
 - iii. Impairment monitoring results of qualifying sample that exceed impairment monitoring concentrations in Table 5 and Table 5A, as required by Schedules B.3, B.4 and B.5 may be used in conjunction with other relevant information to determine an exceedance of water quality standards.
- b. Existing Discharger to an impaired water with a TMDL (based on EPA-approved TMDLs as of March 31, 2021) must comply with Schedule A.3 and:
 - i. Must comply with all applicable requirements of TMDLs with wasteload allocations for industrial stormwater discharges.
 - ii. If DEQ or agent determines that additional site-specific requirements are necessary, the permit registrant must revise the SWPCP. DEQ will hold a 30 calendar day public notice period on the revised SWPCP.

STORMWATER DISCHARGE

5. Statewide and Sector-Specific Benchmarks

- a. Benchmarks are screening concentrations, not numeric effluent limits. A benchmark exceedance, therefore, is not a permit violation, but failing to take the required corrective action is a permit violation.
- b. The permit registrant must determine whether site controls are effectively reducing pollutant concentrations in stormwater discharges, or if maintenance or implementation of additional controls is necessary when a benchmark is exceeded.

6. Mass Reduction Measures Certification

- a. For mass reduction measures installed during previous permit cycles in response to an approved Tier 2 mass reduction waiver that reduced the mass of the pollutants discharged at or above DEQ-approved design storm capacity, the permit registrant must submit to DEQ or agent an evaluation that is certified by an Oregon registered professional engineer (PE) or Oregon certified

engineering geologist (CEG) stamp of the following information, as applicable, to validate the system is operating as intended:

- i. Proper installation and maintenance specifications as originally designed;
 - ii. Infiltration testing or other demonstrations to confirm intended performance metrics;
 - iii. Confirmation that operation and maintenance specifications have been performed;
 - iv. Information concerning drawdown;
 - v. Whether any corrective actions are needed; and
 - vi. Estimated design life expectancy of the system and any plan to rejuvenate or replace measures.
- b. The permit registrant must submit the mass reduction measures stamped certification to DEQ or agent by December 31, 2021, unless DEQ or agent approve a later date.
 - c. The permit registrant must provide DEQ or agent with operation and maintenance records upon request and meet all maintenance schedules specified in the stamped certification.
 - d. If the stamped certification includes corrective action, the permit registrant must complete corrective action by September 30, 2022.
 - e. For mass reduction measures installed during previous permit cycles that reduced the mass of the pollutants discharged at or above DEQ-approved design storm capacity not in response to Tier 2 mass reduction waiver, the permit registrant must meet Schedule A.6.a-d and submit, retroactively, to DEQ or agent a Tier 2 mass reduction waiver checklist.
 - f. DEQ or agent will notify the permit registrant within 60 calendar days from receipt if mass reduction measures certification is approved or denied.

7. Effluent Limitations

- a. An exceedance of an applicable numeric effluent limit is a permit violation. See Schedule A.13, B.7.g and B.15.
- b. Numeric effluent limits are established as follows:
 - i. Numeric technology-based effluent limits based on industrial activities in Table 3, Schedule B.1 applicable to concentrations in Schedule E promulgated by EPA's effluent limitation guidelines under federal regulations 40 CFR, Subchapter N.
 - ii. Numeric water quality-based effluent limits will apply to facilities:
 - (1) Based on discharges to Category 5: 303(d) list in effect at the time of permit assignment for pH, copper, lead, and zinc that correspond to the specific pollutant(s) for which the water body is impaired in response to monitoring results in accordance Schedule A.13.e; and
 - (2) Established by wasteload allocations in a TMDL as identified by DEQ or agent.
- c. Narrative water quality-based effluent limits are established as follows:
 - i. Based on discharges to Category 5: 303(d) list in effect at the time of permit assignment for E. coli and iron that correspond to the specific pollutant(s) for which the water body is impaired in response to monitoring results in accordance Schedule A.13.i and j.

STORMWATER POLLUTION CONTROL PLAN

8. Preparation and Implementation of SWPCP

- a. The SWPCP must be prepared by a person knowledgeable in stormwater management and familiar with the facility.

- b. The SWPCP must be signed and certified in accordance with 40 CFR §122.22.
- c. In accordance with Schedule A.2, the SWPCP must include control measures/BMPs that implement each narrative technology-based effluent limit to eliminate or reduce the potential to contaminate stormwater and prevent exceedance of instream water quality standards.
- d. The permit registrant must implement the SWPCP and any revisions to the plan. Failure to implement any narrative technology-based effluent limits, other control measures or operational practices described in the SWPCP is a violation of this permit.
- e. If the permit registrant fails to implement the control measures in the SWPCP, the permit registrant must take corrective actions and implement the measures before the next storm event if practicable or no later than 30 calendar days after the discovery, unless a later date is approved by DEQ or agent.
- f. The permit registrant must keep the SWPCP current and revise it as necessary to reflect current site conditions and changes to the site.

9. SWPCP Revisions

- a. The Permit registrant must prepare SWPCP revisions in compliance with Schedule A.8.a-c.
- b. The permit registrant must submit SWPCP revisions to DEQ or agent for the following reasons:
 - i. Change in site contact(s);
 - ii. In response to a corrective action or inspection;
 - iii. Changes to the site, operations or control measures that may significantly change the nature of pollutants present in stormwater discharge; or significantly increase the pollutant(s) levels, discharge frequency, discharge volume or flow rate;
 - iv. Changes to the monitoring points; or
 - v. Changes to discharge points.
- c. Change to site contact must be made through the web-based electronic system when available, except for facilities located in agents' jurisdictions, until directed by DEQ or agent.
- d. Review of the revisions by DEQ or agent prior to implementation is not required, unless there is a change to the location of monitoring points. The permit registrant may not change monitoring points until DEQ or agent have approved the SWPCP revision.
- e. DEQ or agent may require the permit registrant to revise the SWPCP at any time. The permit registrant must submit revisions through the web-based electronic system, when directed by DEQ, no later than 30 calendar days from the request date or the change to the facility, unless DEQ or agent approved a later date.
- f. The proposed revisions are deemed accepted after 30 calendar days after receipt unless the permit registrant receives a response from DEQ or agent.
- g. SWPCP revisions are not subject to public notice unless revisions are in response to Condition I.3.c and when the SWPCP revisions include additional site-specific requirements in response to a Water Quality Standard Report in accordance with Schedule A.3 or an EPA-approved TMDL as of March 31, 2021, in accordance with Schedule A.4.b of this permit.
- h. For Tier 2 SWPCP revision submittal requirements, refer to Schedule A.12.

10. Required Elements

The SWPCP, at a minimum, must include the components below and describe how the permit registrant intends to comply with the narrative technology-based effluent limits in Schedule A.1 and

eliminate or reduce the potential to contaminate stormwater and prevent any exceedance of instream water quality standards.

a. Title Page - The title page of the SWPCP must contain the following information:

- i. Plan date;
- ii. Name of the site;
- iii. Name of the site operator or owner;
- iv. The name of the person(s) preparing the SWPCP;
- v. File number and EPA permit number as indicated in permit coverage documents;
- vi. Primary SIC code and any co-located SIC codes;
- vii. Contact person(s) name, telephone number and email; and
- viii. Physical address, including county, and mailing address if different.

b. Site Description - The SWPCP must contain the following information, including any applicable information required in Schedule E of the permit:

- i. Site map(s) including the following, labeled clearly:
 - (1) general location of the site in relation to surrounding properties, transportation routes, surface waters and other relevant features;
 - (2) drainage patterns, with flow arrows;
 - (3) conveyance and discharge structures, such as piping or ditches;
 - (4) exact location of all monitoring points, labelled with a unique three-digit identifying number starting with 001, 002, etc. used for web-based electronic reporting and indicate "monitoring point;"
 - (5) outline of the drainage area for each discharge point;
 - (6) paved areas and buildings within each drainage area;
 - (7) locations of discharge points if different from monitoring points;
 - (8) areas used for outdoor manufacturing, treatment, storage, or disposal of significant materials;
 - (9) areas known or discovered significant materials from previous operations;
 - (10) existing structural control measures for minimizing pollutants in stormwater runoff;
 - (11) structural features that reduce flow or minimize impervious areas;
 - (12) material handling and access areas;
 - (13) hazardous waste treatment, storage and disposal facilities;
 - (14) location of wells including waste injection wells, seepage pits, drywells;
 - (15) location of springs, wetlands and other surface waterbodies both on-site and adjacent to the site;
 - (16) location of groundwater wells;
 - (17) location and description of authorized non-stormwater discharges;
 - (18) location and description of spill prevention and cleanup materials; and
 - (19) locations of the following materials and activities if they are exposed to stormwater and applicable:
 - A. fueling stations;
 - B. vehicle and equipment maintenance cleaning areas;
 - C. loading/unloading areas;
 - D. locations used for the treatment, storage, or disposal of wastes;
 - E. liquid storage tanks;

- F. processing and storage areas;
 - G. 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;
 - H. transfer areas for substances in bulk;
 - I. machinery; and
 - J. locations and sources of run-on to your site from adjacent property.
- ii. A description of industrial activities conducted at the site and significant materials stored, used, treated or disposed of in a manner which exposes those activities or materials to stormwater. Include in the description the methods of storage, usage, treatment or disposal.
 - iii. Location and description, with any available characterization data, of areas of known or discovered significant materials from previous operations.
 - iv. Regular business hours of operation.
 - v. For each area of the site where a reasonable potential exists for contributing pollutants to stormwater runoff, a description of the potential pollutant sources that could be present in stormwater discharges and if the source is associated with a co-located SIC code.
 - vi. A description of control measures installed and implemented to meet the technology and water quality-based requirements in Schedule A.1 –A.4, Schedule A.13 and any applicable sector-specific requirements in Schedule E of this permit. Include a description of how the stormwater control measures address potential pollutant sources from industrial activities and significant materials on-site, spills and leaks and authorized non-stormwater discharges. Include known maintenance schedules and frequency of housekeeping measures.
 - vii. A description of stormwater treatment controls or source controls, including low impact development, in response to corrective action requirements and operation and maintenance procedures. Include safety data sheets for any stormwater treatment chemicals or substances used in stormwater treatment and stored on site.
 - viii. An estimate of the amount of impervious surface area (including paved areas and building roofs) and the total area drained by each stormwater discharge point to be reported in area units.
 - ix. The name(s) of the receiving water(s), latitude and longitude of discharge point(s), and applicable SIC code, if facility has co-located operations. If discharge point is to a municipal storm sewer system, the name(s) and latitude and longitude of the receiving waters and the name of the municipality.
 - x. The identification of each discharge point and the location(s) where stormwater monitoring will occur as required by Schedule B.6. The monitoring point must also be labeled in the on the site map as “monitoring point.” Existing discharge points excluded from monitoring must include a description of the discharge point(s) and data or analysis supporting that the discharge point(s) are substantially similar as described in Schedule B.7.c.ii of this permit.
- c. Procedures and Schedules -The SWPCP must contain the following information to meet the narrative technology-based effluent limits in Schedule A.1 of this permit:
 - i. Spill Prevention and Response - Procedures for preventing and responding to spills and clean-up, documentation and notification procedures. Indicate who is responsible for on-site management of significant materials and include their contact information. Spills prevention plans required by other regulations may be substituted for this provision if the spill prevention plan addresses stormwater management concerns and the plan is included with the SWPCP.

Otherwise the SWPCP must contain all spill prevention and response procedures, schedules and documentation requirements in Schedule A.1.

- (1) Indicate how spill response will be coordinated between the permit registrant and otherwise unpermitted tenants. The permit registrant is ultimately responsible for spills of tenant and appropriate response.
- d. Preventative maintenance - Procedures for conducting inspections, maintenance and repairs to prevent leaks, spills, and other releases from drums, tanks and containers exposed to stormwater and the scheduled regular pickup and disposal of waste materials. Include the schedule or frequency for maintaining all control measures and waste collection.
- e. Operation and Maintenance Plans - Include an operation and maintenance plan for active and passive treatment systems and mass reduction measures. The O&M plan must include, as appropriate to the type of treatment system, items such as system schematic, manufacturer's maintenance/operation specifications, chemical use, treatment volumes and a monitoring or inspection plan and frequency. For passive treatment and low impact development control measures, such as mass reduction measures, include routine maintenance standards.
- f. Employee Education - The elements of the training program must include the requirements in Schedule A.1.j. Include a description of the training content and the required frequency.

BENCHMARK EXCEEDANCES AND VISUAL OBSERVATION CORRECTIVE ACTIONS

11. Tier 1 Corrective Action Response based on Exceedances of Benchmarks and Visual Observations that Show Signs of Pollution

- a. If any of the triggering events occur, the permit registrant must complete the Tier 1 corrective actions below.
- b. Triggering events include:
 - i. If qualifying sample results exceed any applicable statewide benchmark(s) in Table 4 of this permit or any sector-specific benchmarks in Schedule E; or
 - ii. Visual observations that show signs of pollution in the discharge as specified in Schedule B.12.a.vii.
- c. Tier 1 corrective action and reporting must include:
 - i. Investigate the cause of the elevated pollutant levels, including conducting, commencing or planning for any needed pollutant source tracing activities. Ensure that known or discovered significant materials from previous operations are controlled, removed or otherwise not exposed.
 - ii. Review the SWPCP to ensure it is implemented; evaluate selection, design, installation and implementation of control measures for compliance with this permit and manufacturers' specifications. Evaluate whether any previous pollutant source isolation actions are complete and whether additional modifications are necessary.
 - iii. Evaluate any treatment measures, infiltration devices and mass reduction measures, including if they were properly installed, maintained and implemented and whether maintenance, corrections, or modifications are necessary.
 - iv. Tier 1 corrective action response(s) must be assessed and implemented at all substantially similar discharge points.
 - v. Tier 1 report - Summarize the following information in a Tier 1 report:
 - (1) The results of the site the assessment in Schedule A.11.c.i-iii.
 - (2) Corrective actions taken or planned to be taken, including date corrective action completed or expected to be completed. Where the permit registrant determines that corrective action is not necessary, provide the basis for this determination.
 - (3) Document whether SWPCP revisions are necessary.
 - vi. Tier 1 corrective action response may include documentation and implementation of industrial-specific checklists as provided by DEQ (see DEQ's industrial stormwater permits webpage for resources regarding source and operations controls, including the industrial-specific checklists), in addition to a Tier 1 report.
 - vii. The permit registrant must keep Tier 1 reports and industrial-specific checklists on site, and copies provided to DEQ or agent upon request.
- d. Deadlines:
 - i. Implement Tier 1 corrective actions before the next storm event, if possible, or no later than 30 calendar days after receiving the monitoring results or completing the monthly visual inspection, whichever comes first. If the permit registrant fails to complete the corrective action within this timeframe, an explanation must be documented in the Tier 1 Report, and corrective actions must be completed as soon as practicable.
 - ii. Submit revised SWPCP in accordance with Schedule A.9., as needed.

e. Exemptions:

- i. Permit registrants subject to Tier 2 corrective action response, prior to completion of Tier 2, a Tier 1 corrective action response is not required when monitoring results exceed the benchmark for the same pollutant and monitoring point.
- ii. If stormwater monitoring results from properly maintained mass reduction measures installed at or above DEQ-approved designed storm capacity exceed benchmarks, the permit registrant is not required to complete a Tier 1 corrective action.

12. Tier 2 Corrective Action Response based on Geometric Mean Benchmark Evaluation:

- a. Permit registrants subject to a Tier 2 installation deadline of June 30, 2021, or later in response to a Tier 2 corrective action response triggered under the previous permit, are not required to conduct Tier 2 evaluation for the same pollutant(s) and monitoring point(s) during this permit cycle.
- b. Once a monitoring point triggers Tier 2 corrective action response for a pollutant, in subsequent full reporting years a Tier 2 geometric mean evaluation and Tier 2 corrective action response are not required more for the same pollutant(s) and monitoring point(s).
- c. The permit registrant must use all qualifying samples collected during the full reporting year to calculate the geometric mean, except sample results from properly maintained mass reduction measures installed at or above DEQ-approved designed storm capacity.
- d. If any of the triggering events occur, the permit registrant must complete the Tier 2 corrective actions below.
- e. Triggering events include:
 - i. The geometric mean of qualifying sample results collected at any monitoring point exceeds any applicable statewide benchmark(s) in Table 4, during each full reporting year (see Schedule D.3, Definitions).
 - ii. For the pH benchmark, if 50 percent or more of qualifying sample results collected at any monitoring point during two full reporting years, are outside of the pH benchmark range.
- f. Corrective action and Reporting must include:
 - i. The permit registrant must submit a SWPCP appendix including: Tier 2 report, a Tier 2 mass reduction waiver request, or a Tier 2 background waiver request as described below.
 - ii. Properly apply and size approved Tier 2 corrective action responses and mass reduction measures to all substantially similar discharge points.
 - iii. Tier 2 Report
 - (1) The Tier 2 report must include a proposal for active or passive treatment. This may include a combination of source removal, control and treatment measures, with the goal of achieving the benchmark(s) in this permit. The report must include the rationale for the selection of the control and treatment measures, the projected reduction of pollutant concentration(s) and the schedule for implementing these measures.
 - (2) An Oregon registered professional engineer (PE) must design and stamp the portion of the SWPCP that addresses these control measures.
- g. At discharge points where Tier 2 has been implemented:
 - i. The permit registrant must take Tier 1 corrective actions in accordance with Schedule A.11.

- ii. The permit registrant must sample substantially similar discharge points for the parameters that triggered Tier 2. For exceptionally large facilities where sampling at all substantially similar discharge points are infeasible, DEQ or agent may approve a modification.
- iii. The permit registrant may request a monitoring waiver if the geometric mean of five consecutive qualifying sample results collected at any monitoring point is equal to or below the benchmark.
- h. Exemptions:
 - i. Tier 2 Mass Reduction Waiver
 - (1) The permit registrant may request an exemption from the requirements in Schedule A.12.f.iii above by submitting a mass reduction waiver request if the permit registrant implements or has implemented volume reduction measures, such as low impact development practices, that will or has resulted in reductions of the mass load of pollutants in the discharge below the mass equivalent of the applicable statewide benchmark(s) in Table 4 of this permit.
 - (2) The mass reduction waiver request and the revised SWPCP must include data and analysis to support the rationale for the mass load reduction selection. The mass reduction waiver request must include a description of the measure(s), and a mass load analysis, and expected implementation date(s).
 - (3) An Oregon Professional Engineer (PE) or Oregon certified engineering geologist (CEG) must design and stamp the portion of the SWPCP that addresses the mass reduction measures.
 - ii. Tier 2 Background Waiver
 - (1) The permit registrant may request a background waiver exemption from the requirements in Schedule A.12.f.iii and A.12.h.i above if the permit registrant can sufficiently demonstrate the benchmark exceedance(s) is attributed solely to the presence of the pollutant(s) in natural background and is not associated with industrial activities at the site (see Schedule D.3, Definitions).
 - (2) The background waiver request must include the supporting rationale and any data collected by the facility or others (including peer-reviewed literature studies) which is used to demonstrate that the exceedances are due solely to background conditions that describe and quantify the levels of background pollutants in the discharge.
- i. Deadlines:
 - i. The permit registrant must submit a proposed Tier 2 corrective action response to DEQ or agent no later than December 31 (six months after the end of the full reporting year that triggered Tier 2) unless DEQ or agent approved a later date.
 - ii. DEQ or agent will notify the permit registrant within 60 calendar days of receipt if Tier 2 corrective action is approved or denied.
 - iii. Tier 2 corrective action(s) or mass reduction measures(s) must be installed and implemented no later than September 30 (a year and nine months after the Tier 2 proposal corrective action response submittal deadline) unless DEQ or agent approved a later date. If the permit registrant changes the specifics of the corrective actions before implementation, revisions must be submitted and approved by DEQ or agent before implementation. Corrective action revisions do not change the Tier 2 implementation deadline.

- iv. No later than 30 calendar days from implementing Tier 2 corrective actions or mass reduction measures, the permit registrant must inform DEQ or agent of the date of completion. This notification requirement also applies to facilities with an implementation deadline established in the previous permit.
- v. No later than 30 calendar days from implementing all Tier 2 corrective actions or mass reduction measures, the permit registrant must submit all new and modified control measures and any associated changes to monitoring or discharge points within a SWPCP revision.

CATEGORY 5: 303(d) LIST IMPAIRMENT EXCEEDANCE RESPONSE

13. Water Quality-based Effluent Limits

- a. The permit registrant must comply with water quality-based effluent limits for discharges to impaired receiving waters based on the EPA-approved Category 5: 303(d) list in effect at the time of permit assignment for pH, copper, lead, zinc, iron and E. coli that correspond to the specific pollutant(s) for which the water body is impaired when monitoring results trigger the events specified below.
- b. The permit registrant must use all qualifying samples except sample results from properly maintained mass reduction measures installed at or above DEQ-approved designed storm capacity.
- c. For E. coli and iron, if the triggering events occur, the permit registrant must comply with narrative water quality-based effluent limits.
- d. For pH, copper, lead and zinc, if the triggering events occur, the permit registrant must comply with numeric water quality-based effluent limits at the pollutant concentrations in Table 5 as required by Schedule B.3.
- e. Triggering events for pH, copper, lead and zinc:
 - i. If two consecutive qualifying sample results collected at any monitoring point falls outside the basin-specific range for pH in Appendix A as required by Schedule B.3 at each monitoring point subject to impairment monitoring for which the water body is impaired for pH.
 - ii. If two consecutive qualifying sample results collected at any monitoring point exceed the impairment concentrations for copper, lead, or zinc in Table 5, as required by Schedule B.3 subject to impairment monitoring.
 - iii. If a qualifying sample result collected at any monitoring point is greater than two times the impairment concentrations in Table 5, as required by Schedule B.3 for copper, lead, or zinc subject to impairment monitoring.
- f. When the impairment monitoring as required by Schedule B.3 escalates to a numeric water quality-based effluent limit based on triggering events above in Schedule A.13.e, the permit registrants must notify DEQ or agent no later than 30 calendar days from receiving the monitoring results. At such time, permit registrant may request up to a two-year compliance schedule in accordance with Schedule C.
- g. The permit registrants must sample all discharge points subject to numeric water quality-based effluent limit, including those previously designated as substantially similar.
- h. Permit registrants that discharge into Category 5: 303(d) listed receiving waters for fecal coliform or enterococcus must monitor stormwater discharge that correspond to the specific pollutant and report as specified in Table 6 and Table 7 applicable to impairment pollutants. DEQ may require

additional narrative water quality-based effluent limits if a public health risk is identified from the discharge.

i. Triggering event for E. coli:

- i. If two consecutive qualifying sample results collected at any monitoring point exceeds the impairment concentration for E. coli in Table 5A, as required in Schedule B.4 subject to impairment monitoring, the permit registrant must implement the following narrative water quality-based effluent limits:
- (1) Prevent rodents, birds, and other animals from feeding/nesting/roosting at the facility to the degree practicable. Nothing in this section shall be construed as allowing violations of any applicable federal, state or local statutes, ordinances, or regulations including the Migratory Bird Treaty Act;
 - (2) Clean storm sewer lines, including catch basins, annually. Frequency of cleaning may be reduced, or decreased to catch basins, only after the first annual cleaning if the source of the E. coli exceedances are identified and the storm sewer lines are determined to not be a contributing factor. Flushed water and solids must be disposed of properly and not allowed to discharge;
 - (3) If the source of the exceedances is not readily identified, perform a one-time dry weather inspection to identify and eliminate any sanitary sewer cross-connections or leaky sewer pipes;
 - (4) Investigate and document any human dwelling encampments;
 - (5) Install additional source or operational controls to address known sources of fecal contamination such as green waste, illegal dumping, dumpsters or garbage trucks and grease bins, and portable toilets as applicable; and if applicable,
 - (6) Conduct and report biochemical speciation identification results to indicate non-fecal discharges.

j. Triggering event for iron:

- i. If two consecutive qualifying sample results collected at any monitoring point exceeds impairment concentration for iron in Table 5A, as required by Schedule B.4 subject to impairment monitoring, the permit registrant must implement the following narrative water quality-based effluent limits:
- (1) Demonstrate compliance with the erosion and sediment control narrative technology-based effluent limit in Schedule A.1.d. and stabilize all exposed soils that have potential to discharge;
 - (2) Implement sweeping or other equivalent methods of cleaning sufficient to minimize the discharge of sediment and debris, but in no case less than once per calendar quarter when industrial activity has occurred at the site;
 - (3) Clean storm sewer lines, including catch basins, annually. Frequency of cleaning may be reduced or decreased to catch basins only after the first annual cleaning if the source of the iron exceedances are identified and the storm sewer lines are determined to not be a contributing factor. Flushed water and solids must be disposed of properly and not allowed to discharge; and
 - (4) Install additional source and operational controls to the extent practicable to address known sources of iron pollution such as permanent structures by removing, replacing or sealing corroding metal.

- k. The permit registrant must complete the narrative water quality-based effluent limits no later than 90 calendar days from receiving monitoring results of the triggering event above in Schedule A.13.h and i and continue as required. SWPCP revisions documenting completion are required as specified in Schedule A.9.
- l. If the permit registrant is unable to comply with the numeric or narrative water quality-based effluent limits, it is a permit violation and permit coverage may be revoked under this general permit and coverage required under an individual permit.

PERMIT COMPLIANCE

14. Authorization Under This Permit

- a. Any noncompliance with any of the requirements of this permit constitutes a violation of the Clean Water Act and Oregon Revised Statutes (ORS) 468B.025(2).
- b. Corrective actions and compliance within the time periods specified for remedying noncompliance with the permit do not absolve the permit registrant of the initial underlying violations.
- c. Where corrective action is triggered by an event that does not itself constitute a violation, such as a benchmark exceedance, there is no permit violation associated with the triggering event provided that the permit registrant must take the corrective action within the deadlines identified in this permit.
- d. A new permit registrant with a new facility or an existing facility without a stormwater discharge permit must implement stormwater control measures to meet new technology and water quality-based requirements in Schedule A.1 – A.4, including applicable sector-specific requirements in Schedule E of this permit, no later than 90 calendar days after receiving permit coverage. Control measures that require capital improvements must be completed no later than two years after receiving permit coverage, unless DEQ or agent approved a later date.
- e. The permit registrant must complete corrective action associated with monitoring exceedances.

SCHEDULE B

MONITORING REQUIREMENTS

- Numeric Effluent Limitations Based on Effluent Limitations Guidelines:** Permit registrants that engage in a “regulated activity” described in Table 3 below must monitor stormwater discharges for numeric technology-based effluent limits in accordance with concentrations in Schedule E. Numeric technology-based effluent limits are based on Industry-specific stormwater effluent limitations guidelines as established by EPA.

Table 3: Numeric Effluent Limitations Based on Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limit
Discharge from asphalt emulsion facilities (co-located SIC code only, 2951 covered under the 1200-A)	Part 443, Subpart A	See Schedule E.D.2
Discharge from material storage piles at cement manufacturing facilities	Part 411, Subpart C	See Schedule E.E.5
Discharge from hazardous waste landfills	Part 445, Subpart A	See Schedule E.K.3
Discharge from non-hazardous waste landfills	Part 445, Subpart B	See Schedule E.L.7
Discharge from coal storage piles at steam electric generating facilities	Part 423, Subpart E	See Schedule E.O.5
Discharge containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449, Subpart S	See Schedule E.S.7

- Statewide Benchmarks:** The permit registrant must monitor stormwater discharges for the benchmarks in Table 4. In addition permit registrants must monitor for any sector-specific benchmarks in Schedule E. See Schedule B.7.c for exceptions.

Table 4: Statewide Benchmarks

Georegion	pH s.u.	Total Copper mg/L	Total Lead mg/L	Total Zinc mg/L	TSS mg/L	BOD mg/L	Total Phosphorus mg/L	E. coli organism/100 mL
Columbia Slough	5.5-9.0	0.017 ²	0.10 ²	0.24 ²	30	24	0.16	406 ¹
Portland Harbor	5.5-9.0	0.015 ²	0.24 ²	0.24 ²	30			
Cascades	5.5-9.0	0.016	0.018	0.068	100			
Coastal	5.5-9.0	0.017	0.039 ²	0.086	100			
Columbia River Mainstem	6.0-9.0	0.023	0.21	0.35	100			
Eastern	5.5-9.0	0.031	0.077 ²	0.16	100			

Georegion	pH s.u.	Total Copper mg/L	Total Lead mg/L	Total Zinc mg/L	TSS mg/L	BOD mg/L	Total Phosphorus mg/L	E. coli organism/100 mL
Willamette Valley	5.5-9.0	0.015 ²	0.11 ²	0.14 ²	100			
Marine Waters	6.0-9.0	0.025	1.10	0.46	100			

¹Columbia Slough dischargers are only subject to benchmark monitoring, no impairment monitoring

²Applied regional translators

- 3. Discharges into Category 5: 303(d) listed waters for pH, copper, lead and zinc:** The permit registrant must monitor for pH, total copper, total lead and total zinc at all discharge points into impaired receiving waters that correspond to the specific pollutant(s) for which the water body is impaired. For discharges unable to meet the impairment concentrations for pH, total copper, total lead and total zinc monitoring requirements escalate to a numeric water quality-based effluent limit equal to the impairment monitoring concentrations. See Schedule A.13.e and Schedule C.

Table 5: Impairment Monitoring Concentrations and Numeric Water Quality-based Effluent Limits

Georegion	Total Copper mg/L	Total Lead mg/L	Total Zinc mg/L	pH s.u.
Columbia Slough	0.017 ²	0.017 ²	0.042 ²	Basin-Specific ¹
Portland Harbor	0.015 ²	0.017 ²	0.041 ²	
Cascades	0.016	0.006	0.021	
Coastal	0.017	0.017 ²	0.043	
Columbia River Mainstem	0.023	0.046	0.082	
Eastern	0.031	0.037 ²	0.070	
Willamette Valley	0.015 ²	0.027 ²	0.057 ²	
Marine Waters	0.0058	0.22	0.095	

¹See Appendix A for basin-specific pH concentrations

²Applied regional translators

- 4. Discharges into Category 5: 303(d) listed waters for E. coli and iron:** The permit registrant must monitor for E. coli and total iron at all discharge points into impaired receiving waters that correspond with the specific pollutant for which the water body is impaired. For discharges unable to meet the impairment concentrations for E. coli and total iron in accordance with Schedule A.13.h.i, the permit registrant must comply with narrative water quality-based effluent limits and continue monitoring discharge. Discharges into the Columbia Slough are not be subject to E. coli impairment monitoring.

Table 5A: Impairment Monitoring Concentrations

Impairment Pollutant	Impairment Concentrations
E. coli	406 organisms/100 mL
Total iron	10 mg/L

- 5. Discharges into Category 5: 303(d) listed Receiving Waters for Fecal Coliform and Enterococcus:** The permit registrant must monitor for fecal coliform and enterococcus at all discharge points that correspond to the specific pollutant for which the water is impaired. There are no established impairment monitoring concentrations.

6. Pollutant Parameters

a. Benchmarks

- i. The permit registrant must monitor for the applicable statewide benchmark pollutants identified in Table 4 of this permit. The permit registrant must also monitor for benchmarks identified in Schedule E for applicable industrial sector(s), for both primary industrial activity and any co-located industrial activities.
- ii. If a discharge point is subject to a statewide benchmark(s) for the same parameter that also has a benchmark(s) in Schedule E, the statewide benchmark concentrations are applied as the target concentration.
- iii. If discharge point is into the Pacific Ocean and a saltwater benchmark is established in Table 4 or Schedule E, the saltwater benchmark will be applied as the target concentration. For dischargers into estuarine waters, the more stringent benchmark between the freshwater and saltwater benchmarks are applied as the target concentration.
- iv. When assigning coverage under the permit, DEQ or agent will specify and communicate benchmark monitoring requirements to the permit registrant.

b. Impairment Pollutants

- i. The permit registrant must monitor for pH, total copper, total lead, total zinc, total iron and fecal indicator bacteria: E. coli, fecal coliform and enterococcus, pollutant(s) based on discharge into Category 5: 303(d) listed receiving waters that correspond to the specific pollutant(s) for which the water body is impaired.
- ii. DEQ or agent will notify the permit registrant of additional impairment monitoring and the specific concentrations if required, based on new listings in the current EPA-approved Category 5: 303(d) list in effect at the time of permit assignment.
- iii. For discharge point(s) required to monitor for impairments as required by Schedule B.3 and B.4 for a pollutant that has a benchmark, the permit registrant will not be subject to benchmark monitoring.
- iv. DEQ or agent will specify and communicate impairment pollutant(s) monitoring requirement to the permit registrant.
 - (1) If the pollutant for which the waterbody is impaired is expressed in the form of an indicator or surrogate pollutant, the permit registrant must monitor for that indicator or surrogate pollutant.
 - (2) No monitoring is required for biological communities (biocriteria), including harmful algal blooms and aquatic weeds, where no pollutant including indicator or surrogate pollutants, is specified as causing the impairment; or temperature, or habitat and flow modifications.
- v. The permit registrant must meet Schedule B.6.b.i unless the permit registrant provides monitoring data demonstrating that the pollutant(s) for which the waterbody is impaired are not present in the discharge.

c. Numeric Effluent Limits

- i. DEQ or agent will specify and communicate monitoring requirements applicable to numeric effluent limit(s) to the permit registrant.
- ii. For discharge point(s) required to monitor for a numeric water quality-based effluent limit, the permit registrant will not be subject to benchmark monitoring for the same pollutant.

- iii. The permit registrant may not reduce monitoring requirements associated with substantially similar discharge points in accordance with Schedule B.7.c.ii for discharges with applicable effluent limits. The permit registrant must sample all discharge points subject to numeric effluent limit(s).

7. Sampling Procedures

a. Grab Sampling

- i. For each discharge point monitored, collect a grab or composite sample of stormwater discharges. Discharges from discharge points with shallow overland/sheet flows may need to be concentrated to obtain a sample.
- ii. Composite samples may be used as an alternative to grab sampling, except when monitoring for pH, bacteria or oil and grease. Composited samples must be collected from the same storm event. The permit registrant may not switch between grab sampling to composite sampling during a full reporting year without prior approval from DEQ or agent.
- iii. The permit registrant must perform all monitoring using proper sampling techniques in accordance Schedule F, Section C3.

b. Representative Sample

- i. Samples must be representative of the discharge.
- ii. Monitoring points must be identified in the SWPCP.
- iii. Stormwater discharges regulated by this permit include stormwater run-on that commingles with stormwater discharges associated with industrial activity.
- iv. If discharges authorized by this permit commingle with discharges authorized under a separate NPDES permit, any required sampling of the authorized discharges must be performed at a point before they mix with other waste streams, to the extent practicable. When combined flows are unavoidable, sampling must include all permitted parameters.
- v. Authorized non-stormwater discharges under Condition I.6 of this permit must only be sampled when commingled with stormwater discharges associated with industrial activity.
- vi. Stormwater flows may combine into a common on-site treatment facility; discharges in excess of the design storm capacity must be sampled if the minimum monitoring frequency has not been achieved.
- vii. The permit registrant shall, to the extent practicable, sample stormwater associated with industrial activity as it flows off-site before it combines with stormwater, wastewater or other waste permitted streams, or from areas outside the facility, or mixes with any surface water.

c. Multiple Discharges - Each discharge point must be monitored unless:

- i. Discharge point serves an area without exposure of stormwater to industrial activities.
- ii. Discharge point has effluent that is substantially similar to the effluent(s) of a monitored discharge point and the same BMPs are implemented and maintained at the substantially similar discharge points or drainage areas that lead to the discharge points. Substantially similar effluent(s) are discharges from drainage areas serving comparable activities where the discharges are expected to be similar in composition. The determination of substantial similarity of effluent(s) must be based on past monitoring data or an analysis supporting that the discharge points are substantially similar. The supporting data or analysis must be included in the SWPCP. This provision does not apply to discharge point(s) subject to a numeric effluent limit.

- iii. Discharge points from approved mass reduction measures that reduced the mass of pollutants at or above DEQ-approved design storm capacity. For mass reduction measures installed during previous permit cycles, the permit registrant must comply with Schedule A.6.
- d. Timing - The discharge must be monitored during the first 12 hours of the discharge event, which is a storm event or snowmelt resulting in an actual discharge from a site. If it is not practicable to collect the sample within this period, collect the sample as soon as practicable and provide documentation with the Discharge Monitoring Report why it was not practicable to take samples within the first 12 hour period. The permit registrant is not required to sample outside of regular business hours of operation or during unsafe conditions.
- e. Sampling for pH - pH sampling must be done by either measuring the pH directly in the flow, or analyzing the sample within 15 minutes of sample collection.
 - i. The permit registrant must perform pH monitoring with a properly calibrated pH meter.
 - ii. The permit registrant must follow pH meter manufacturers' specifications and keep meter in good working order.
 - iii. pH paper may not be used to comply with the monitoring requirements established in this permit.
- f. Monitoring Frequency - The permit registrant must monitor stormwater discharge according to the frequency described in Table 6, unless DEQ or agent grant a monitoring waiver or approve a monitoring variance.
 - i. Qualifying stormwater samples must be collected at least 14-days apart.
 - ii. The permit registrant may collect more samples than the minimum frequency described below, but must report this additional data in the Discharge Monitoring Report. All qualifying samples must be included to establish a monitoring waiver in Schedule B.9 or to conduct the geometric mean evaluation in Schedule A.12 of this permit, except from approved mass reduction measures that reduced the mass of pollutants at or above DEQ-approved design storm capacity. For mass reduction measures installed during previous permit cycles, the permit registrant must comply with Schedule A.6.
- g. Exceedance of Numeric Effluent Limit – The permit registrant must conduct follow-up monitoring of any pollutant that exceeds the numeric effluent limit(s) no later than 30 calendar days (or during the next storm event should none occur within 30 calendar days) of receiving the monitoring results. If the follow-up monitoring exceeds the numeric effluent limit, the permit registrant must monitor the discharge four times per year until compliance with the numeric effluent limit is achieved. Once monitoring achieves the effluent limit concentration, semi-annual frequency may resume.

Table 6: Monitoring Frequency

Pollutant Category	Minimum Frequency
All applicable statewide benchmarks in Table 4, any applicable sector-specific benchmarks in Schedule E and any impairment pollutants	Four times per year, two samples between January 1 and June 30, and two samples between July 1 and December 31
Any applicable numeric effluent limitations	Two times per year, One sample between January 1 and June 30, and one sample between July 1 and December 31 (unless exceed numeric effluent limit, four times per year)
Any wasteload allocations or additional schedules in EPA-approved TMDL	As specified in the TMDL

8. Monitoring Variance

- a. If the permit registrant missed a sample due to no storm events of sufficient magnitude to produce run-off during regular business hours of operation and safe conditions, a monitoring variance must be requested. Variance requests are required to be submitted on February 15 and August 15 with the Discharge Monitoring Report for each missed sample. A “no discharge” claim monitoring variance request must include supporting data and analysis demonstrating why there was no discharge for monitoring to occur. If DEQ or agent has evidence contradicting the information in the permit registrant’s monitoring variance request, failure to complete the required monitoring is cited as a permit violation. Supporting data must be included in the request, and may include:
 - i. State or federal authorities declared the year a drought year.
 - ii. Demonstration that rainfall in the area where the permit registrant’s facility is located was 20 percent or more below the three-year average rainfall for that area.
 - iii. Photo documentation, rain gauge data, detention basin storage volumes, storm infiltration rate or retention capacity.

9. Monitoring Waiver for Benchmarks and Impairment Pollutant Monitoring

- a. A monitoring waiver may be requested from DEQ or agent for the following circumstances:
 - i. When the benchmark concentrations have been achieved during a full reporting year, as demonstrated by:
 - (1) The geometric mean of five consecutive qualifying sample results collected at any monitoring point is equal to or below the applicable statewide or sector-specific benchmarks; or
 - (2) For pH, qualifying sample results collected at any monitoring point are within the range for five consecutive readings; or
 - (3) For parameters and discharge point(s) that triggered Tier 2 during this permit cycle, after the corrective action has been implemented and qualifying sample results during a full reporting year achieve the conditions above in Schedule A.8.a.i.(1) or (2).
 - ii. When impairment monitoring results collected at any monitoring point indicate non-detect for four consecutive qualifying samples, or after two full reporting years all qualifying sample results collected at any monitoring point are equal or below the impairment monitoring

concentrations in Table 5 and Table 5A. For pH impairment monitoring after two full reporting years all qualifying sample results collected at any monitoring point are within the basin-specific pH range as specified in Appendix A, referenced in Table 5.

- iii. If the exceedance(s) of a benchmark or impairment pollutant is attributed solely to the presence of the pollutant(s) in background and is not associated with industrial activities at the site. The permit registrant may submit a background waiver report to DEQ or agent that describes the investigation and analysis to demonstrate that the exceedances is due to background conditions. The report must include any data collected by the permit registrant or others (including peer-review literature studies) that describe the levels of background pollutant in the discharge.
- iv. If a facility is inactive and unstaffed and no industrial materials or activities are exposed to stormwater, the permit registrant is not required to conduct monitoring for the remainder of the permit term.
 - (1) The permit registrant must provide documentation with the Discharge Monitoring Report indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii).
 - (2) The permit registrant must sign and certify the statement in accordance with D8 in Schedule F of this permit.
- b. The permit registrant's monitoring waiver request must include documentation to support the request. Monitoring waivers may be requested for individual parameters at each monitoring point.
- c. DEQ or agent will notify the permit registrant if a monitoring waiver is approved or denied. Until approval of the monitoring waiver is received, the permit registrant must continue monitoring.
- d. Approved monitoring waivers are valid until the last full reporting year of the permit term, which begins on July 1, 2025.
- e. There is no reduction in monitoring allowed for:
 - i. Visual observations, unless the site is inactive or unstaffed and there are no industrial materials or activities exposed to stormwater and the permit registrant meets requirements in Schedule B.9.a.vii of this permit;
 - ii. The first and last full reporting year of the permit cycle;
 - iii. Impairment monitoring subject to a compliance schedule in Schedule C; and
 - iv. Monitoring for numeric effluent limits.
- f. Reinstatement of Monitoring
 - i. It is the responsibility of the permit registrant to reinstate discharge monitoring under any of the following circumstances or if notified by DEQ or agent:
 - (1) Prior monitoring used to establish the monitoring waiver was improper or sampling results were incorrect;
 - (2) Changes to site conditions are likely to affect stormwater discharge characteristics, such as change in SIC code, process change or increased pollutants sources exposed to stormwater;
 - (3) Additional monitoring occurs and the sampling results exceed benchmark(s) or impairment monitoring concentrations in Table 5 or Table 5A;
 - (4) On July 1, 2025, for benchmark and impairment monitoring waiver approvals; or

- (5) For inactive or unstaffed sites, the facility becomes active or staffed, or industrial materials or activities become exposed to stormwater.
- g. Revocation of Monitoring Waiver
 - i. DEQ or agent may revoke the monitoring waiver based on any of the above conditions in Schedule B.9.f.i.1-5 or in response to an inspection, corrective action, or upon discovery of the discharge which has caused or contributed to a water quality standard exceedance. DEQ or agent will notify the permit registrant that the monitoring waiver is revoked.

10. Additional Monitoring- DEQ or agent may notify the permit registrant of additional discharge monitoring requirements. Any such notice will state the reasons for the additional monitoring, monitoring location and pollutant to be monitored, frequency and period of monitoring, sample types and reporting requirements.

11. For a new permit registrant discharging to Clackamas River, McKenzie River above Hayden Bridge (River Mile 15), and North Santiam River under OAR 340-041-0350 - For potential or existing dischargers that did not have a permit prior to January 28, 1994, and existing dischargers that have a NPDES stormwater discharge permit but request an increased load limitation.

- a. No later than 180 calendar days after obtaining permit coverage, the permit registrant must submit to DEQ a monitoring and water quality evaluation program. This program must be effective in evaluating the in-stream impacts of the stormwater discharge as required by OAR 340-041-0350(7)(a).
- b. No later than 30 calendar days from DEQ approval, the permit registrant must implement the monitoring and water quality evaluation program.

INSPECTIONS

12. Monthly Inspection Requirements

- a. The permit registrant must inspect areas where industrial materials or activities are exposed to stormwater and areas where stormwater control measures, including infiltration devices, mass reduction measures, structures, catch basins, and treatment facilities are located. Inspections must include an evaluation of control measures consistent with the SWPCP requirements. Inspections must include observations of all discharge points as well as the following:
 - i. Industrial materials, residue, or trash that may have or could come into contact with stormwater;
 - ii. Leaks or spills from industrial equipment, drums, tanks, and other containers;
 - iii. Offsite and internal tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
 - iv. Tracking or blowing of raw, final, or waste materials that results in exposure of stormwater falling on the site;
 - v. Evidence of, or the potential for, pollutants entering the drainage system;
 - vi. Evidence of pollutants discharging to receiving waters at all discharge point(s);
 - vii. Visual observation for the presence of floating and suspended solids, color, odor, foam, visible oil sheen, or other obvious indicators of pollution in the stormwater discharge at all discharge

- point(s), including discharge points that have been authorized to be substantially similar in accordance with Schedule B.7.c.ii; and
- viii. Stormwater control measures, including treatment, infiltration devices and mass reduction measures, to ensure they are functioning properly, and maintained on designed schedules.
- b. Inspections must be conducted by personnel that have completed employee training and are familiar with all aspects of the SWPCP.
- c. Conduct visual inspections at the site on a monthly basis when the facility is in operation. The permit registrant must perform visual observations for signs of pollution as required by Schedule B.12.a.vii above during a discharge event if one occurs during the month, regardless whether the monthly site inspection has already occurred.
- d. For exceptionally large facilities where monthly inspections of all areas or visual observation at all substantially similar discharge points are infeasible, DEQ or agent may approve a modified inspection frequency.
- e. Conduct visual observations of a sample in a clean, colorless glass or plastic container in well-lit area during regular business hours of operation and safe conditions.
- f. The permit registrant's visual observations sample collection does not need to conform to sample collection requirements in Section D8 within Schedule F, but must be representative of the stormwater discharge.
- g. Immediately take all reasonable steps to temporarily minimize or prevent the discharge of pollutants until permanent corrective action is complete.
- h. Conduct all corrective action required as a result of inspection and visual observation.
- i. Document monthly inspections in an inspection report that is retained on-site and submitted to DEQ or agent upon request. The inspection report must include:
- i. The inspection date and time;
 - ii. The name(s) of inspector(s);
 - iii. Control measures and treatment facilities needing cleaning, replacement, maintenance, reconditioning or repair;
 - iv. The condition of the drainage and conveyance system and need for maintenance;
 - v. Previously unidentified sources of pollutants;
 - vi. Stormwater discharge visual observations, (Tier 1 report is required if visual observation shows evidence of stormwater pollution listed in Schedule B.12.a.vii.);
 - vii. Nature of the discharge; whether caused by snow or rain; and
 - viii. Any corrective action response, source control or maintenance taken or scheduled to remedy problems found.

REPORTING AND RECORDKEEPING REQUIREMENTS

13. Reporting Monitoring Data

- a. The permit registrant must submit all monitoring results required in this permit web-based electronically, when directed by DEQ or agent. Paper submittal must be on DEQ-approved Discharge Monitoring Report (DMR) forms.
- i. DMRs are due quarterly as specified in Table 7, as required in Schedule B.14 for samples taken during the preceding calendar quarter.

- ii. Reports must include laboratory results from the testing laboratory, including minimum detection level, Quality Assurance/Quality Control and analytical methods for the parameters analyzed.
- iii. The permit registrant must submit pH field notes and chain-of-custody.
- iv. Report non-detections as directed by DEQ. In calculating the geometric mean, use one-half of the detection level for non-detections.
- v. Report all sample results from monitoring points.
- vi. The permit registrant must sign and certify submittals of Discharge Monitoring Reports, any additional reports, and other information in accordance with the requirements of Section D8 within Schedule F of this permit.
- b. The permit registrant must report Tier 2 geometric mean benchmark evaluation on the DMR due on August 15 after each full reporting year.
- c. Electronic Submission
 - i. When directed by DEQ, the permit registrant must submit sampling results and lab and field reports and other information required by Schedule B using DEQ's web-based electronic system.
 - ii. A permit registrant may apply for a waiver from web-based electronic reporting. The request must be submitted on a DEQ-approved form and a fee may be assessed.
 - iii. Permit registrants in agents' jurisdictions will continue to submit DEQ-approved DMR forms in paper format until notified by DEQ and agent of phased electronic submission requirements.

14. Discharge Monitoring Reports Submission:

The permit registrant must submit all data by required Discharge Monitoring Report due dates. Failure to submit a DMR is a violation, even if there was no discharge during a quarter.

Table 7: DMR Submission Deadlines

Reporting Quarters	Months	DMR Due Dates
1 st	July-September	November 15
2 nd	October-December	February 15 ¹
3 rd	January-March	May 15
4 th	April-June	August 15 ¹

¹Variance request must be submitted semi-annually, as applicable

15. Exceedance Report for Numeric Effluent Limits - If follow-up monitoring pursuant to Schedule B.7.g of this permit exceeds a numeric effluent limit, the permit registrant must submit an Exceedance Report to DEQ or agent no later than 30 calendar days after receiving the monitoring results. The report must include the monitoring data from this monitoring event and the preceding monitoring event(s), an explanation of the contributing factors that resulted in the exceedance, and what the permit registrant has done to correct the violation or intends to do if the corrective actions are not complete.

16. Record Keeping Procedures – The permit registrant must record and maintain the following information at the facility. All records must be retained by the permit registrant for at least three years and made available to DEQ, agent or local municipality upon request.

- a. A copy of the SWPCP and any revisions, including revised stamped SWPCP from Tier 2 corrective action;
- b. A copy of this permit;
- c. DEQ's notice of permit coverage under the current permit term;
- d. Documentation of maintenance and repairs of control measures, treatment systems and mass reduction measures;
- e. Mass reduction measures re-certification as required by Schedule A.6;
- f. Tier 1 reports, including industrial-specific checklist(s);
- g. All inspection reports;
- h. Documentation of any benchmark exceedance and corrective action taken;
- i. All copies of any reports or corrective action submitted to DEQ or agent;
- j. Spills or leaks of significant materials (See Schedule D.3, Definitions) that impacted or had the potential to impact stormwater or surface waters. Include the corrective actions to clean up the spill or leak as well as measures to prevent future problems of the same nature;
- k. Documentation to support a claim that a facility has changed its status from active to inactive and unstaffed with respect to the requirements to conduct routine facility inspections;
- l. Discharge Monitoring Reports, laboratory reports, pH calibration and field sampling notes;
- m. Compliance schedule reports as specified in Schedule C;
- n. Numeric limits exceedance reports;
- o. Water Quality Standards Report; and
- p. Employee education materials and records of training.

17. Summary of Reporting Requirements and Submittal Date

The permit registrant must submit all reports through a web-based electronic system when directed by DEQ and agent.

Table 8: Reporting Requirements

Permit Condition	Permit Schedule	Report Required	Due Date
Must not cause or contribute to a violation of instream water quality standard	Schedule A.3	Water Quality Standards Corrective Action Report	No later than 30 calendar days after receiving monitoring results
Certification of mass reduction measures installed during previous permit cycles	Schedule A.6	Stamped certification	December 31, 2021
SWPCP submission	Schedule A.9	SWPCP revision	No later than 30 calendar days after the completion of modification or as requested by DEQ or agent
Sample results exceed applicable statewide or sector-specific benchmarks or visual observations show signs of pollution	Schedule A.11	Tier 1 Report	No later than 30 calendar days after receiving monitoring results; Retain on-site and submit upon request
Geometric mean exceeds statewide benchmarks in full reporting year (July 1 – June 30)	Schedule A.12	Tier 2 Report	No later than December 31, six months after June 30 (date triggered)
		Tier 2 Mass Reduction Waiver	
		Tier 2 Background Waiver	
Confirmation of Tier 2 implementation	Schedule A.12.i.iv	Notification confirming Tier 2 proposal installation	No later than 30 calendar days of implementation
Sample results continue to exceed benchmark for Tier 2 parameters post-implementation	Schedule A.11.c.v	Tier 1 Report	No later than 30 calendar days after receiving monitoring results; Retain on-site and submit upon request
Trigger numeric water quality-based effluent limit	Schedule A.13.e	WQBEL notification and compliance schedule request	No later than 30 calendar days after receiving monitoring results
Submission of monitoring results after the preceding calendar quarter	Schedule B.14	Discharge Monitoring Report	No later than February 15, May 15, August 15, and November 15
Sample results exceed numeric effluent limitations	Schedule B.15	Exceedance Report	No later than 30 calendar days after receiving monitoring results and increase monitoring frequency

SCHEDULE C

COMPLIANCE SCHEDULES

1. **Numeric Water Quality-based Effluent Limits:** If the permit registrant is subject to numeric water quality-based effluent limits as required by triggering events in Schedule A.13.e, unable to immediately comply with applicable effluent limits, and has requested a compliance schedule as specified in Schedule C.2., the permit registrant must comply with the following compliance schedule milestones in Table 9. The permit registrant is allowed a compliance schedule when site modifications to implement a combination of source control and treatment are necessary to achieve numeric water quality-based effluent limit. Final numeric water quality-based effluent limits become enforceable when consistent compliance is achieved, or a maximum of 24 months following the trigger event specified in Schedule A.13.e, whichever occurs first.
 - a. Failure to comply with the final compliance schedule within 24 months following the qualifying event specified in Schedule A.13.e is a permit violation.
 - b. Consistent compliance with the effluent limits for this section shall be demonstrated by achieving compliance with the applicable effluent limit(s) for one full reporting year, unless the permit registrant provides, and DEQ or agent accepts, a rationale for why the monitoring data is not representative of anticipated future performance.
2. **Compliance Schedule Milestones:** A permit registrant will be allowed a compliance schedule if monitoring results indicate that stormwater discharges do not meet numeric water quality-based effluent limit concentrations in Table 5 that correspond to the specific pollutant(s) for which the water body is impaired. The permit registrant must request a compliance schedule from DEQ or agent and shall carry out the actions by the specified due dates below.

Table 9: Compliance Schedules

Action	Due Date ¹
1. Identify the source of contamination in stormwater discharge and determine if source control, treatment, or both will be used to achieve compliance with the applicable numeric effluent limit(s).	Within 6 months
2. Submit plans for structural modification of existing facilities or the construction of new facilities consistent with the determination in Action 1.	Within 12 months
3. Commence modifications/installations as specified in Action 2.	Within 18 months
4. Comply with final effluent limits and submittal of a revised SWPCP	Within 24 months

¹ In relation to the date of the triggering events specified in Schedule A.13.e occurred

3. **Status Reports:** Permit registrant shall submit status reports to DEQ or agent within 14-days after each action due date listed in Table 9. Status reports shall include the following information:
 - a. A status summary of the progress towards completing the actions specified in Table 9, including any relevant documentation or findings necessary to demonstrate compliance with the applicable due dates.
 - b. Confirmation of completion of the required action or a communication with DEQ or agent that the permit registrant will be delayed in implementing the required action. Notifications of a delay must include reasons for the delay and a revised schedule for ensuring compliance with the final

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due date to comply with the numeric water quality-based effluent limits within 24 months. DEQ or agent will notify the permit registrant no later than 30 calendar days from receipt if the delay is approved or denied. An extension of the final compliance date is prohibited.

SCHEDULE D

SPECIAL CONDITIONS

1. Releases in Excess of Reportable Quantities. This permit does not relieve the permit registrant of the reporting requirements of 40 CFR §117 Determination of Reportable Quantities for Hazardous Substances and 40 CFR §302 Designation, Reportable Quantities, and Notification.

2. Availability of SWPCP and Monitoring Data. The Stormwater Pollution Control Plan and stormwater monitoring data must be made available to government agencies responsible for stormwater management in the permit registrant's area.

3. Definitions

For the purpose of this permit:

- a. Arid areas means portion of the state where annual precipitation averages range from 0 to 10 inches.
- b. Background pollutants include substances that are naturally occurring in soils or groundwater. Background pollutants do not include legacy pollutants from earlier activity on the site, or pollutants in run-on from neighboring sources that are not naturally occurring.
- c. Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the state." 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 40 CFR 122.2.
- d. Capital Improvements means the following improvements that require capital expenditures:
 - i. Removal or permanent isolation from exposure to stormwater of significant materials left from previous activities on the site.
 - ii. Treatment best management practices including to settling basins, oil/water separation equipment, grassy swales, detention/retention basins, and media filtration devices.
 - iii. Manufacturing modifications that incur capital expenditures, including process changes for reduction of pollutants or wastes at the source.
 - iv. Concrete pads, dikes and conveyance or pumping systems utilized for collection and transfer of stormwater to treatment systems.
 - v. Roofs and appropriate covers for manufacturing areas.
 - vi. Volume reduction measures, including low impact development control measures.
- e. Co-located Industrial Activities means any industrial activities, excluding the primary industrial activity(ies), located on-site that are defined by the stormwater regulations at 122.26(b)(14)(i - ix, xi) and identified in Table 1: Sources Covered of the permit. An activity at a facility is not considered co-located if the activity, when considered separately, does not meet the description of a category of industrial activity covered by the stormwater regulations or identified in Table 1.
- f. Columbia Slough means the waterway in northern Multnomah County flowing roughly parallel to the Columbia River between Fairview Lake and the Willamette River. *Confirm discharges to Columbia Slough by contacting the cities of Portland or Gresham.*

- g. Compliance Schedule means a schedule of remedial measures, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with a water quality-based effluent limit. See *Schedule of compliance* in 40 CFR 122.2.
- h. Control Measure means any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the state.
- i. Discharge Point means the location where stormwater flows leave the facility and enters waters of the state directly or indirectly through a separate storm sewer system, including the location where any sheet flow leaves a facility.
- j. Existing Discharger means an operator applying for coverage under this permit for discharges authorized previously under an NPDES general or individual permit.
- k. Feasible means technologically possible and economically practicable and achievable in light of best industry practices.
- l. Full reporting year is from July 1 of one year to June 30 of the following year (for example, the 2021/2022 full reporting year is from July 1, 2021, through June 30, 2022).
- m. Hazardous Substances is defined in 40 CFR §302 Designation, Reportable Quantities, and Notification.
- n. High Quality Waters means those waters that meet or exceed levels that are necessary to support the propagation of fish, shellfish, and wildlife; recreation in and on the water; and other designated beneficial uses. Waters identified on the Category 5: 303(d) listed waters as not meeting applicable state water quality standards for a given pollutant are not high quality waters.
- o. Immediately means in the context of repair or maintenance to control measures, the day you identify that a control measure needs to be maintained, repaired, or replaced, you must take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a permanent solution. However, if you identify a problem too late in the work day to initiate action, you must perform the action the following work day morning.
- p. Impaired Waters means those waters identified by a State or EPA pursuant to Section 303(d) (Category 5) of the Clean Water Act as not meeting applicable State water quality standards for one or more pollutants. This may include both waters with approved TMDLs (Category 4), and those for which a TMDL has not yet been approved.
- q. Industrial Activity means the categories of industrial activities included in the definition of “stormwater discharges associated with industrial activity” as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi) or activities identified by DEQ as a significant contributor of pollutants, such as Table 2.
- r. Industrial-specific Checklists means technical assistance document for optional use to assist permit registrants with a Tier 1 corrective action response comprised of universal and sector-specific source and operational control measures for major industrial groups. When implemented will assist in reducing sources of pollution exposed to stormwater. The permit registrant is expected to complete the universal checklists designed for all industrial sectors covered under this permit as well as sector-specific checklists applicable to SIC codes industrial activities at the site.
- s. Industrial Stormwater means stormwater discharge associated with industrial activity (40 CFR 122.26(b)(14)).
- t. Material Handling Activities include the storage, loading and unloading, transportation or conveyance of raw material, intermediate product, finished product, by-product or waste product.

- u. Minimize means reduce or eliminate, or both, 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.
- v. Monitoring Point for the purpose of this permit, means the location where stormwater discharge is sampled.
- w. New Discharger means a facility from which there is or may be a discharge, that did not commence the discharge of pollutants at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.
- x. New Source means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which commenced: after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal. See 40 CFR 122.2.
- y. No Exposure means all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. See 40 CFR 122.26(g).
- z. Operator means any entity with a stormwater discharge associated with industrial activity that meets either of the following two criteria:
 - i. The entity has operational control over industrial activities, including the ability to modify those activities; or
 - ii. The entity has day-to-day operational control of activities at a facility necessary to ensure compliance with this permit (e.g., the entity is authorized to direct workers at a facility to carry out activities required by this permit).
- aa. Outstanding Resource Waters means those waters designated by the Environmental Quality Commission where existing high quality waters constitute an outstanding state or national resource based on their extraordinary water quality or ecological values or where special water quality protection is needed to maintain critical habitat areas.
- bb. Portland Harbor means the study area of EPA’s Portland Harbor Superfund site located in the Lower Willamette River from approximately river mile 1.9 to 11.8.
- cc. Primary industrial activity means any activities performed on-site that are (1) identified by the facility’s primary SIC code; or (2) included in the narrative descriptions of 122.26(b)(14)(i), (iv), (v), or (vii), and (ix). Narrative descriptions in 40 CFR 122.26(b)(14) identified above include: (i) activities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards; (iv) hazardous waste treatment storage, or disposal facilities including those that are operating under interim status or a permit under subtitle C of the Resource Conservation and Recovery Act (RCRA); (v) landfills, land application-sites and open dumps that receive or have received industrial wastes; (vii) steam electric power generating facilities; and (ix) sewage treatment works with a design flow of 1.0 mgd or more.
- dd. Qualifying samples are samples that are collected at least 14-days apart, are analyzed using approved methods (see Schedule F), and satisfy the Quality Assurance/Quality Control requirements of the method.
- ee. Regular business hours of operation means those timeframes when the facility is engaged in its primary production process, with personnel that have completed the required SWPCP training.

- ff. Run-on sources of stormwater means stormwater that drains from land located upslope or upstream from the regulated facility.
- gg. Semi-arid areas means where annual rainfall averages range from 10 to 20 inches.
- hh. 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; any chemical that a facility is required to report pursuant to section 313 of title III of SARA; TSCA, fertilizers; pesticides; and waste products such as ash, slag, and sludge that have the potential to be released with stormwater discharges.
- ii. Storm event means a precipitation event that results in a measurable amount of precipitation to results in an actual discharge (except otherwise specified in Schedule E).
- jj. Stormwater means stormwater runoff, snow melt runoff and surface runoff drainage. See 40 CFR 122.26(b)(13).
- kk. Stormwater Discharge Associated with Industrial Activity, the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under Part 122. For the categories of industries identified in this section, 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 (as defined at part 401 of this chapter); 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. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Industrial facilities include those that are federally, state, or municipally owned or operated that meet the description of the facilities listed in 40 CFR 122.26(b)(14). The term also includes those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v). See 40 CFR 122.26(b)(14)
- ll. Stormwater Conveyance means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.
- mm. Total Maximum Daily Load (TMDL) is the sum of the individual Waste Load Allocations (WLAs) for point sources and Load Allocations (LAs) for nonpoint sources and background. See OAR 340-041-0002(65) and OAR 340-042-0030(15).
- nn. Treatment Measures mean Best Management Practices that are intended to remove pollutants from stormwater. These measures include: settling basins, oil/water separation equipment, detention/retention basins, media filtration devices, electrocoagulation, constructed wetlands and bioswales.

- oo. Wasteload Allocation (WLA) means the portion of receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation. See OAR 340-041-0002(67).

4. Local Public Agencies Acting as DEQ's Agent

DEQ has entered into agreement which authorize certain local governments and special districts to act as its agent in implementing portions of this permit. The agent conducts the following activities, including: application and SWPCP review, inspections, monitoring data review, stormwater and wastewater monitoring, and verification and approval of no-exposure certifications. Where DEQ has entered into such an agreement, DEQ or agent will notify the permit registrant of where to submit no-exposure certifications, and other notifications or correspondence associated with this permit.

5. Terminating Permit Coverage

- a. The permit registrant must meet the following conditions:
 - i. Cease all industrial operations and stormwater discharge associated with industrial activity as defined in 40 CFR 122.26(b)(14); or
 - ii. Obtain NPDES coverage under an individual permit; or
 - iii. A new owner or operator legally acquires responsibility of property or industrial activity.
 - iv. Conditions for termination under sectors G, H and I have been met, as applicable.
- b. To terminate permit coverage, registrants must:
 - i. Complete and submit a Notice of Termination to DEQ or agent for approval.
 - ii. Resolve all outstanding invoices and compliance issues.
- c. Until termination has been approved by DEQ, the permit registrant must comply with all permit conditions.

SCHEDULE E

SECTOR-SPECIFIC REQUIREMENTS

1. The permit registrant must meet the sector-specific requirements in Schedule E associated with their primary industrial activity and any co-located industrial activities, as defined in Schedule D of this permit. The sector-specific requirements apply to the areas of the facility where the sector-specific activities occur.
2. These sector-specific requirements in Schedule E are in addition to the requirements in Schedule A, Schedule B, and Schedule C of this permit.
3. Pacific Ocean discharges will use saltwater benchmarks as the target concentrations, when one is established in this Schedule.
4. Estuarine waters discharges, the more stringent benchmark between the freshwater and saltwater benchmarks are applied as the target concentration. If no saltwater benchmark is listed, the freshwater benchmark is applied.
5. If a discharge point is subject to a statewide benchmark(s) for the same parameter that also has a benchmark(s) in Schedule E, the statewide benchmark supersedes Schedule E concentrations. Other hardness-dependent metals concentrations are calculated in Table 10 using median hardness for each georegion.

Table 10: Metals Concentrations

Georegion	Median Hardness mg/L	Total Cadmium ¹ mg/L	Total Chromium III ¹ mg/L	Total Nickel ¹ mg/L	Total Selenium ² mg/L	Total Silver ¹ mg/L
Cascades	12.9	0.00039	0.34	0.083	0.013	0.00011
Coastal	29.75	0.0010	0.67	0.17	0.013	0.00047
Columbia River Mainstem	63.8	0.0024	1.2	0.32	0.013	0.0017
Columbia Slough	29.4	0.00099	0.66	0.17	0.013	0.00046
Eastern	53.3	0.0019	1.1	0.28	0.013	0.0013
Portland Harbor	28.55	0.00095	0.65	0.16	0.013	0.00044
Willamette Valley	41.9	0.0015	0.88	0.22	0.013	0.00085

¹See Endnote E and Endnote F equations for hardness-based metals, Table 30: Aquatic Life Water Quality Criteria

² DEQ Memorandum, Implementations Instruction for Selenium

6. Table E-1 below identifies SIC codes and activities descriptions that are required to meet the sector-specific requirements in Schedule E of the permit.

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
SECTOR A: TIMBER PRODUCTS	
2421	General Sawmills and Planing Mills
2411	Logging
2426	Hardwood Dimension and Flooring Mills
2429	Special Product Sawmills, Not Elsewhere Classified
2431-2439 (except 2434, see Sector W)	Millwork, Veneer, Plywood, and Structural Wood
2448	Wood Pallets and Skids
2449	Wood Containers, Not Elsewhere Classified
2451, 2452	Wood Buildings and Mobile Homes
2491	Wood Preserving
2493	Reconstituted Wood Products
2499	Wood Products, Not Elsewhere Classified
2441	Nailed and Lock Corner Wood Boxes and Shook
SECTOR B: PAPER AND ALLIED PRODUCTS	
2631	Paperboard Mills
2611	Pulp Mills
2621	Paper Mills
2652-2657	Paperboard Containers and Boxes
2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
SECTOR C: CHEMICALS AND ALLIED PRODUCTS	
2873-2879 (excluding 2874)	Agricultural Chemicals
2812-2819	Industrial Inorganic Chemicals
2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass
2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances
2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
2861-2869	Industrial Organic Chemicals
2891-2899	Miscellaneous Chemical Products
3952 (limited to list of inks and paints)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors
2911	Petroleum Refining
SECTOR D: PETROLEUM REFINING AND RELATED INDUSTRIES	
Asphalt Paving Mixtures and Blocks, Primary SIC code 2951, Covered by 1200-A General Permit	
2951 (co-located SIC code only), 2952	Asphalt Paving and Roofing Materials
2992, 2999	Miscellaneous Products of Petroleum and Coal
SECTOR E: GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCTS	
Ready-Mixed Concrete, Primary SIC code 3273, Covered by 1200-A General Permit	
3251-3259	Structural Clay Products
3261-3269	Pottery and Related Products
3271-3275 (3273 co-located SIC code only)	Concrete, Gypsum and Plaster Products
3211	Flat Glass
3221, 3229	Glass and Glassware, Pressed or Blown
3231	Glass Products Made of Purchased Glass
3241	Hydraulic Cement
3281	Cut Stone and Stone Products
3291-3299	Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products
SECTOR F: PRIMARY METALS	
3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
3321-3325	Iron and Steel Foundries
3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
3363-3369	Nonferrous Foundries (Castings)
3331-3339	Primary Smelting and Refining of Nonferrous Metals
3341	Secondary Smelting and Refining of Nonferrous Metals
3398, 3399	Miscellaneous Primary Metal Products
SECTOR G: METAL MINING (ORE MINING AND DRESSING)	
1021	Copper Ore and Mining Dressing Facilities
1011	Iron Ores
1021	Copper Ores

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
1031	Lead and Zinc Ores
1041, 1044	Gold and Silver Ores
1061	Ferroalloy Ores, Except Vanadium
1081	Metal Mining Services
1094, 1099	Miscellaneous Metal Ores
SECTOR H: COAL MINES AND COAL MINING-RELATED FACILITIES	
1221-1241	Coal Mines and Coal Mining-Related Facilities
SECTOR I: OIL AND GAS EXTRACTION AND REFINING	
1311	Crude Petroleum and Natural Gas
1321	Natural Gas Liquids
1381-1389	Oil and Gas Field Services
SECTOR J: MINERAL MINING AND DRESSING- Discharges Covered by 1200-A General Permit	
SECTOR K: HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES	
HZ	Hazardous Waste Treatment, Storage, or Disposal Facilities: • Hazardous waste storage • Hazardous waste disposal • Hazardous waste facilities operating under interim status • Hazardous waste facilities operating under a permit under Subtitle C of RCRA HZ is the Activity Code for this Sector. It potentially applies to any facility regardless of SIC, in addition to these specifically related to hazardous waste: • SIC 4953 Refuse Systems (hazardous waste treatment and disposal)
SECTOR L: LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS	
LF	All Landfill, Land Application Sites and Open Dumps
LF	All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60
SECTOR M: MOTOR VEHICLE PARTS, USED	
5015	Automobile Salvage Yards
SECTOR N: SCRAP AND WASTE MATERIALS	
5093	Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling
5093	Source-separated Recycling Facility

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
SECTOR O: STEAM ELECTRIC GENERATING FACILITIES	
SE	Steam Electric Generating Facilities, including coal handling sites: • steam electric power generation using coal, including coal handling areas • steam electric power generation using natural gas • steam electric power generation using oil • steam electric power generation using nuclear energy • steam electric power generation using any other fuel to produce a steam source • coal pile discharge (includes effluent limitations established by 40 CFR 423) • dual fuel co-generation (i.e., steam generation using fossil fuel to augment a heat-capture generation system) SE is the Activity Code for this Sector. It may apply to any facility SIC Code, in addition to these specifically related to steam electric generation: • SIC 4911 Electric Services (fossil fuel power generation, nuclear electric power generation & other electric power generation)
SECTOR P: LAND TRANSPORTATION AND WAREHOUSING	
4011, 4013	Railroad Transportation
4111-4173	Local and Highway Passenger Transportation
4212-4215	Trucking and Courier Services, Except Air
4226, 4231	Special Warehousing and Storage, Not Otherwise Classified, Terminal and Joint Terminal Maintenance Facilities for Motor Freight Transportation
4311	United States Postal Service
5171	Petroleum Bulk Stations and Terminals
SECTOR Q: WATER TRANSPORTATION	
4412-4499	Water Transportation Facilities
SECTOR R: SHIP AND BOAT BUILDING AND REPAIRING YARDS	
3731, 3732	Ship and Boat Building or Repairing Yards
SECTOR S: AIR TRANSPORTATION FACILITIES	
4512-4581	Air Transportation Facilities
SECTOR T: TREATMENT WORKS	

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
TW	Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403.
SECTOR U: FOOD AND KINDRED PRODUCTS	
2041-2048	Grain Mill Products
2074-2079	Fats and Oils Products
2011-2015	Meat Products
2021-2026	Dairy Products
2032-2038	Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties
2051-2053	Bakery Products
2061-2068	Sugar and Confectionery Products
2082-2087	Beverages
2091-2099	Miscellaneous Food Preparations and Kindred Products
2111-2141	Tobacco Products
SECTOR V: TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING; LEATHER AND LEATHER PRODUCTS	
2211-2299	Textile Mill Products
2311-2399	Apparel and Other Finished Products Made from Fabrics and Similar Materials
3131-3199	Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing)
SECTOR W: FURNITURE AND FIXTURES	
2434	Wood Kitchen Cabinet and countertop Manufacturing
2511-2519	Household Furniture
2521, 2522	Office Furniture
2531	Public Building and Related Furniture
2541, 2542	Partitions, Shelving, Lockers, and Office and Store Fixtures
2591, 2599	Miscellaneous Furniture and Fixtures
SECTOR X: PRINTING AND PUBLISHING	

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
2711-2796	Printing, Publishing, and Allied Industries
SECTOR Y: RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISCELLANEOUS MANUFACTURING INDUSTRIES	
3011	Tires and Inner Tubes
3021	Rubber and Plastics Footwear
3052, 3053	Gaskets, Packing and Sealing Devices, and Rubber and Plastic Hoses and Belting
3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
3081-3089	Miscellaneous Plastics Products
3931	Musical Instruments
3942-3949	Dolls, Toys, Games, and Sporting and Athletic Goods
3951-3955 (except 3952 – see Sector C)	Pens, Pencils, and Other Artists' Materials
3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal
3991-3999	Miscellaneous Manufacturing Industries
SECTOR Z: LEATHER TANNING AND FINISHING	
3111	Leather Tanning and Finishing
SECTOR AA: FABRICATED METAL PRODUCTS	
3411-3499 (except 3479)	Fabricated Metal Products, and Coating, Engraving, and Allied Services
3911-3915	Jewelry, Silverware, and Plated Ware
3479	Fabricated Metal Coating and Engraving
SECTOR AB: TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY	
3511-3537	Engines and Turbines, Farm and Garden Machinery and Equipment, Construction, Mining and Materials Handling Machinery and Equipment
3541-3549	Metalworking Machinery and Equipment
3552-3559	Special Industry Machinery, Except Metalworking Machinery
3561-3569	General Industrial Machinery and Equipment
3581-3599	Refrigeration and Service Industry Machinery, Miscellaneous Industrial and Commercial Machinery and Equipment
3711-3716	Motor Vehicles and Motor Vehicle Equipment
3721-3751 (except 3731, 3732)	Aircraft and Parts, Ship and Boat Building and Repairing, Railroad Equipment, Motorcycles, Bicycles and Parts

Table E-1. Sectors of Industrial Activity with Description

SIC Code or Activity Code	Activity Represented
3761-3799	Guided Missiles and Space Vehicles and Parts, Miscellaneous Transportation Equipment
SECTOR AC: ELECTRONIC, ELECTRICAL, PHOTOGRAPHIC AND OPTICAL GOODS <i>No Sector-specific requirements</i>	
3571-3579	Computer and Office Equipment
3612-3699	Electronic and Other Electrical Equipment and Components, Except Computer Equipment
3812-3829	Measuring, Analyzing, Optical and Controlling Instruments
3841-3861	Photographic, Medical and Optical Goods
3873	Watches and Clocks

Sector A – Timber Products
Additional Technology-Based Effluent Limits

- E.A.1 *Good Housekeeping.* In areas where storage, loading and unloading, and material handling occur, perform good housekeeping to limit the discharge of wood debris, minimize the leachate generated from decaying wood materials, and minimize the generation of dust.

E.A.2 Additional SWPCP Requirements

- E.A.2.1 *Drainage Area Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: processing areas, treatment chemical storage areas, treated wood and residue storage areas, wet decking areas, dry decking areas, untreated wood and residue storage areas, and treatment equipment storage areas.
- E.A.2.2 *Inventory of Exposed Materials.* Where such information exists, if your facility has used chlorophenolic, creosote, or chromium-copper-arsenic formulations for wood surface protection or preserving, document in your SWPCP the following: areas where contaminated soils, treatment equipment, and stored materials still remain and the management practices employed to minimize the contact of these materials with stormwater discharge.
- E.A.2.3 *Description of Stormwater Management Controls.* Document measures implemented to address the following activities and sources: log, lumber, and wood product storage areas; residue storage areas; loading and unloading areas; material handling areas; chemical storage areas; and equipment and vehicle maintenance, storage, and repair areas. If your facility performs wood surface protection and preservation activities, address the specific control measures, including any BMPs, for these activities.

E.A.3 Additional Inspection Requirements.

- E.A.3.1. If your facility is a wood preserving facility under SIC 2491, inspect processing areas, transport areas, and treated wood storage areas monthly to assess the usefulness of practices to minimize the deposit of treatment chemicals on unprotected soils and in areas that will come in contact with stormwater discharges.

E.A.4 Sector-Specific Benchmarks

Table E.A-1 identifies benchmarks that apply to the specific subsectors of Sector A. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, which describe your site activities.

Table E.A-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
General Sawmills and Planing Mills (SIC code 2421)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Hardwood Dimension and Flooring Mills; Special Products Sawmills, not elsewhere classified; Millwork, Veneer, Plywood, and Structural Wood; Wood Pallets and Skids; Wood Containers, not elsewhere classified; Wood Buildings and Mobile Homes; Reconstituted Wood Products; and Wood Products Facilities not elsewhere classified (SIC code 2426, 2429, 2431-2439 (except 2434), 2441, 2448, 2449, 2451, 2452, 2493, and 2499)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark
Log Storage and Handling (SIC code 2411)	Total Suspended Solids (TSS)	Statewide benchmark
Wood Preserving (SIC code 2491)	Total Arsenic freshwater	0.34 mg/L
	Total Arsenic saltwater	0.069 mg/L
	Total copper freshwater	Statewide benchmark
	Total copper saltwater	0.025 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector B – Paper and Allied Products

E.B.1 Sector-Specific Benchmarks

Table E.B-1 identifies benchmarks that apply to the specific subsectors of Sector B. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.B-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Paperboard Mills (SIC code 2631)	Chemical Oxygen Demand (COD)	120 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector C – Chemical and Allied Products Manufacturing, and Refining

E.C.1 Sector-Specific Benchmarks

Table E.C-1 identifies benchmarks that apply to the specific subsectors of Sector C. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.C-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Agricultural Chemicals (SIC codes 2873-2879, excluding 2874)	Nitrate plus Nitrite Nitrogen	10 mg/L
	Phosphorus	2.0 mg/L
	Total lead freshwater	Statewide benchmark
	Total lead saltwater	1.10 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Industrial Inorganic Chemicals (SIC codes 2812-2819)	Total Aluminum	1.10 mg/L
	Nitrate plus Nitrite Nitrogen	10 mg/L
Soaps, Detergents, Cosmetics, and Perfumes (SIC codes 2841-2844)	Nitrate plus Nitrite Nitrogen	10 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Plastics, Synthetics, and Resins (SIC codes 2821-2824)	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector D – Petroleum Refining and Related Industries

E.D.1 Limitation of Coverage

Asphalt Paving Mixtures and Blocks, Primary SIC code 2951, must apply for coverage under the 1200-A Industrial Stormwater General Permit.

Table E.D-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Asphalt Paving and Roofing Materials (SIC codes 2951, 2952) co-located SIC codes only	Total Suspended Solids (TSS)	Statewide benchmark

E.D.2 Effluent Limitations Based on Effluent Limitations Guidelines

Table E.D-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under this permit.

Table E.D-2¹

Industrial Activity	Parameter	Effluent Limit
Discharges from asphalt emulsion facilities. co-located SIC code only.	Total Suspended Solids (TSS)	23.0 mg/L, daily maximum
		15.0 mg/L, 30-day avg.
	pH	6.0 - 9.0 s.u.
	Oil and Grease	15.0 mg/L, daily maximum
		10 mg/L, 30-day avg.

¹Monitor semi-annually

Schedule E – Sector-Specific Requirements for Industrial Activity

Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products

E.E.1 Limitations of coverage

Ready-Mixed Concrete, primary SIC code 3273, must apply for coverage under the 1200-A General Permit.

E.E.2 Additional Technology-Based Effluent Limits

E.E.2.1 *Good Housekeeping Measures.* With good housekeeping, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, 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 your SWPCP 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 week if cement, aggregate, kiln dust, fly ash, or settled dust are being handled or processed. You must also prevent the exposure of fine granular solids (cement, fly ash, kiln dust, etc.) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, or buildings, or under other covering.

E.E.3 Additional SWPCP Requirements

E.E.3.1 *Drainage Area Site Map.* Document in the SWPCP the locations of the following, as applicable: bag house or other 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.

E.E.3.1 *Discharge Testing.* For facilities producing ready-mix concrete, concrete block, brick, or similar products, include in the non-stormwater discharge testing a description of measures that ensure that process wastewaters resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with NPDES wastewater permit requirements or are recycled.

E.E.4 Sector-Specific Benchmarks

Table E.E-1 identifies benchmarks that apply to the specific subsectors of Sector E. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, which describe your site activities.

Table E.E-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Clay Product Manufacturers (SIC codes 3251-3259, 3261-3269)	Total Aluminum	1.10 mg/L
Concrete and Gypsum Manufacturers (SIC codes 3271-3275) 3273: co-located SIC code only.	Total Suspended Solids (TSS)	Statewide benchmark

E.E.5 Effluent Limitations Based on Effluent Limitations Guidelines

Table E.E-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these limits is to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under this permit.

Table E.E-2¹

Industrial Activity	Parameter	Effluent Limit
Discharges from material storage piles at cement manufacturing facilities (SIC code 3241)	Total Suspended Solids (TSS)	50 mg/L, daily maximum
	pH	6.0 - 9.0 s.u.

¹Monitor semi-annually

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector F – Primary Metal

E.F.1 Additional Technology-Based Effluent Limits

- E.F.1.1 *Good Housekeeping Measures.* As part of your good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and, where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

E.F.2 Additional SWPCP Requirements

- E.F.2.1 *Drainage Area Site Map.* Identify in the SWPCP where any of the following activities may be exposed to precipitation or stormwater: storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operations, etc., and could result in a discharge of pollutants to waters of the state.
- E.F.2.2 *Inventory of Exposed Material.* Include in the inventory of materials handled at the site that potentially may be exposed to precipitation or discharge, areas where deposition of particulate matter from process air emissions or losses during material-handling activities are possible.

E.F.3 Additional Inspection Requirements

As part of conducting your monthly inspections address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitators, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their efficiency and lead to excessive emissions. Consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material losses due to wind or stormwater runoff.

E.F.4 Sector-Specific Benchmarks

Table E.F-1 identifies benchmarks that apply to the specific subsectors of Sector F. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.F-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC codes 3312-3317)	Total Aluminum	1.10 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Iron and Steel Foundries (SIC codes 3321-3325)	Total Aluminum	1.10 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark
	Total copper freshwater	Statewide benchmark
	Total copper saltwater	0.025 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Rolling, Drawing, Extruding of Nonferrous Metals, Nonferrous Foundries (SIC codes 3351-3357 and 3363-3369)	Total copper freshwater	Statewide benchmark
	Total copper saltwater	0.025 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity

Sector G – Metal Mining

E.G.1 Covered Stormwater Discharges

The requirements in Sector G apply to stormwater discharges associated with industrial activity from Metal Mining facilities, including mines abandoned on Federal lands, as identified by the SIC Codes specified under types of industrial sources required to obtain coverage, Table 1. Coverage is required for metal mining facilities that discharge stormwater contaminated by contact with, or that has come into contact with, any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the operation.

E.G.1.1 *Covered Discharges from Inactive Facilities.* All stormwater discharges.

E.G.1.2 *Covered Discharges from Active and Temporarily Inactive Facilities.* Only the stormwater discharges from the following areas are covered:

- Waste rock and overburden piles if composed entirely of stormwater and not combined with mine drainage;
- Topsoil piles;
- Offsite haul and access roads;
- Onsite haul and access roads constructed of waste rock, overburden or spent ore if composed entirely of stormwater and not combining with mine drainage;
- Onsite haul and access roads not constructed of waste rock, overburden or spent ore except if mine drainage is used for dust control;
- Discharges from tailings dams or dikes when not constructed of waste rock or tailings and no process fluids are present;
- Discharges from tailings dams or dikes when constructed of waste rock or tailings and no process fluids are present, if composed entirely of stormwater and not combining with mine drainage;
- Concentration building if no contact with material piles;
- Mill site if no contact with material piles;
- Office or administrative building and housing if mixed with stormwater from industrial area;
- Chemical storage area;
- Docking facility if no excessive contact with waste product that would otherwise constitute mine drainage;
- Explosive storage;
- Fuel storage;
- Vehicle and equipment maintenance area and building;
- Parking areas (if necessary);
- Power plant;
- Truck wash areas if no excessive contact with waste product that would otherwise constitute mine drainage;
- Unreclaimed, disturbed areas outside of active mining area;
- Reclaimed areas released from reclamation requirements prior to December 17, 1990;
- Partially or inadequately reclaimed areas or areas not released from reclamation requirements.

- E.G.1.3 *Covered Discharges from Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* All stormwater discharges.
- E.G.1.4 *Covered Discharges from Facilities Undergoing Reclamation.* All stormwater discharges.

E.G.2 Limitations on Coverage

- E.G.2.1 *Prohibition of Stormwater Discharges.* Stormwater discharges not authorized by this permit: discharges from active metal mining facilities that are subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).
Note: Stormwater discharge from these sources are subject to 40 CFR Part 440 if they are mixed with other discharges subject to Part 440. In this case, they are not eligible for coverage under this permit. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless they: (1) drain naturally (or are intentionally diverted) to a point source; and (2) combine with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440. Operators bear the initial responsibility for determining if they are eligible for coverage under this permit, or must seek coverage under another NPDES permit.
- E.G.2.2 *Prohibition of Non-Stormwater Discharges.* Not authorized by this permit: adit drainage, and contaminated springs or seeps discharging from waste rock dumps that do not directly result from precipitation events.

E.G.3 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

- E.G.3.1 *Mining operation* – For this permit, mining operations are grouped into two distinct categories, with distinct technology based effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities; and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.
- E.G.3.2 *Earth-disturbing activities conducted prior to active mining activities* – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:
- activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and
 - construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional technology based effluent limits in E.G.4.2.

- E.G.3.3 *Active mining activities* – Activities related to the extraction, removal or recovery, and beneficiation of metal ore from the earth; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the “active mining area.” Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in E.G.4 have been met, and a well-delineated “active mining area” has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are “active mining activities.”
- E.G.3.4 *Active mining area* – A place where work or other activity related to the extraction, removal or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.
Note: Earth-disturbing activities described in the definition in E.G.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered “earth-disturbing conducted prior to active mining activities”, and must comply with the requirements in E.G.4
- E.G.3.5 *Inactive metal mining facility* – A site or portion of a site where metal mining and/or milling occurred in the past but there are no active mining activities occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive metal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.
- E.G.3.6 *Temporarily inactive metal mining facility* – A site or portion of a site where metal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable State or Federal agency.
- E.G.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities** Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in E.G.3.3) are covered under this permit. For such earth-disturbing activities, permit registrants do not need to comply the technology-based effluent limits or Schedule B, monitoring or inspection frequency in Schedule B or E.G.5, E.G.7 or E.G.8. Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in E.G.4.1.9 or E.G.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to E.G.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the permit, including the technology-based effluent limits or Schedule B, monitoring or inspection frequency in Schedule B and Sector E.G.5, E.G.7 and E.G.8.
- E.G.4.1 *Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in E.G.3. These limits supersede the technology-based limits listed in Schedule A.1.

E.G.4.1.1 *Erosion and sediment control installation requirements.*

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPCP must be installed and made operational as soon as conditions on each portion of the site allows.

E.G.4.1.2 *Erosion and sediment control maintenance requirements.* You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater controls must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon as practicable.

E.G.4.1.3 *Perimeter controls.* You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

E.G.4.1.4 *Sediment track-out.* For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.
- Note: DEQ recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such “staining” is not a violation of E.G.4.1.4.

E.G.4.1.5 *Soil or sediment stockpiles.* You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

E.G.4.1.6 *Sediment basins.* If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

E.G.4.1.7 *Minimize dust.* You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

E.G.4.1.8 *Restrictions on use of treatment chemicals.* If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPCP documentation.

If you plan to use cationic treatment chemicals, you are ineligible for coverage under this permit, unless you notify your applicable DEQ regional office or agent in advance and receive authorization under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

E.G.4.1.9 *Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in E.G.3.2(a) (i.e., not applicable to construction of staging areas for structures and access roads as defined in E.G.3.2(b)).* You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance) (although you are encouraged to do so within the active mining area, where appropriate):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in E.G.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in E.G.3.2(a)), have permanently ceased but in no case more than 7 days after the earth-disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing

conditions, where initiating perennial vegetative stabilization measures is not possible within 7 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

E.G.4.2 *Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.* The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in E.G.3.2(b). These limits supersede the technology-based limits listed in Schedule B and E.G.5 of this sector. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in E.G.3.2(a)).

E.G.4.2.1 *Area of disturbance.* You must minimize the amount of soil exposed during construction activities.

E.G.4.2.2 *Erosion and sediment control design requirements.* You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from earth-disturbing activities. Account for the following factors in designing your erosion and sediment controls:
 - The expected amount, frequency, intensity and duration of precipitation;
 - The nature of stormwater discharge and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
 - The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

E.G.4.2.3 *Natural Buffers.* For any stormwater discharges from earth-disturbing activities within 50 feet of a waters of the state, you must comply with one of the following compliance alternatives:

1. Maintain a 50-foot undisturbed natural buffer between earth-disturbing activities and the waters of the state; or
2. Provide and maintain less than 50 feet of an undisturbed natural buffer zone and supplement by installing erosion and sediment controls that achieve a modeled or calculated sediment load reduction equivalent to a undisturbed natural buffer zone; or

3. If infeasible to provide and maintain an undisturbed natural buffer zone of any size, implement erosion and sediment controls that achieve a modeled or calculated sediment load reduction equivalent to a 50-foot undisturbed natural buffer zone. Ensure all discharges are treated by control measures prior to entering the natural buffer.
4. Delineate and clearly mark off all natural buffers.

There are exceptions when buffer requirements do not apply:

- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for a water-dependent structure or earth-disturbing approved under a CWA section 404 permit.

E.G.4.2.4 *Soil or sediment stockpiles.* In addition to the requirements in E.G.4.1.5, you must locate any piles outside of any natural buffers established under E.G.4.2.3.

E.G.4.2.5 *Sediment basins.* In addition to the requirements in E.G.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under E.G.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

E.G.4.2.6 *Native topsoil preservation.* You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

E.G.4.2.7 *Steep slopes.* You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

E.G.4.2.8 *Soil compaction.* Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

E.G.4.2.9 *Dewatering Practices.* You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
 - No discharging visible floating solids or foam;
 - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);

- Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the state be considered part of the treatment area;
- Implement velocity dissipation devices at all points where dewatering water is discharged;
- Haul backwash water away for disposal or return it to the beginning of the treatment process; and
- Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturers' specifications.
- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in E.G.4.1.8.

E.G.4.2.10 *Pollution prevention requirements.*

- Prohibited discharges:
 - Turbid discharge or discharge of sediment;
 - Wastewater from washout of concrete;
 - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other materials;
 - Wastewater from wheel wash;
 - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
 - Soaps, solvents, or detergents used in vehicle or equipment washing;
 - Toxic or hazardous substances from a spill or other release.
 - Design and location requirements: Minimize the discharge of pollutants from pollutant sources by:
- *Minimizing exposure;*
 - Using secondary containment, spill kits, or other equivalent measures;
 - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
 - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

E.G.4.2.11 *Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in E.G.3.2(b) (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in E.G.3.2(a)).* You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of

construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily (“temporarily” means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
 - Seed or plant the area, and provide temporary cover to protect the planted area;
 - Once established, vegetation must be uniform (evenly distributed without large bare areas) perennial vegetation, which provides 70 percent or more coverage based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
 - Install or apply all non-vegetative measures;
 - Cover all areas of exposed soil.

Note: For the purposes of this permit, DEQ will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in #1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid or drought-stricken areas:
 - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
 - Initiate vegetative stabilization as soon as conditions on the site allow;
 - Document the schedule that will be followed for initiating and completing vegetative stabilization;
 - Cover planted or seeded area with bio or photo degradable erosion controls designed to prevent erosion without active maintenance.
- Sites affected by severe storm events or other unforeseen circumstances:
 - Initiate vegetative stabilization as soon conditions on the site allow;
 - Document the schedule that will be followed for initiating and completing vegetative stabilization;
 - Add a suitable interim measures (such as mulch or bark) are in place if 70 percent coverage of vegetation is expected to expand.

E.G.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in E.G.3.2(a) and E.G.3.2(b), in addition to the water quality-based standards in Schedule A.3.

Stricter requirements apply if your site will discharge to an impaired waters that are listed for turbidity or sedimentation or have an EPA-approved TMDL for sedimentation or turbidity:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.

- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

E.G.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The following requirements supersede the inspection requirements in Schedule B and E.G.7 for earth-disturbing activities conducted prior to active mining activities defined in E.G.3.2(a) and E.G.3.2(b).

E.G.4.4.1 *Inspection frequency*

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day.

Note: You are required to specify in your SWPCP which schedule you will be following.

Note: “Within 24 hours of the occurrence of a storm event” means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

E.G.4.4.2 *Reductions in inspection frequency.*

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to E.G.4.1.9 or E.G.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

E.G.4.4.3 *Areas to be inspected.* You must at a minimum inspect the all of the following areas:

- Disturbed areas;

- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

E.G.4.4.4 *What to check for during inspections.* At a minimum you must check:

- Whether all stormwater controls are installed, operational and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.
- If a discharge is occurring, check:
 - The quality and characteristics of the discharge;
- Whether controls are operating effectively.

E.G.4.4.5 *Inspection report.* Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

E.G.5 Technology-Based Effluent Limits for Active Mining Activities

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in E.G.3.2(a) or E.G.3.2(b).

E.G.5.1 *Employee training.* (See also Schedule A.1.j) Conduct employee training at least annually at active and temporarily inactive facilities.

E.G.5.2 *Stormwater controls.* Apart from the control measures you implement to meet Schedule A technology-based effluent limits, where necessary to minimize pollutant discharges in stormwater, implement the following control measures at your site. The potential pollutants identified in E.G.6.3 shall determine the priority and appropriateness of the control measures selected. For mines subject to dust control requirements under DEQ or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Schedule A.1.f. Stormwater diversions: Divert stormwater away from potential pollutant sources through implementation of control measures such as the following, where determined to be feasible including: interceptor or diversion controls (e.g., dikes, swales, curbs, berms); pipe slope drains; subsurface drains; conveyance systems (e.g., channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents.

Capping: When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

Treatment: If treatment of stormwater (e.g., chemical or physical systems, oil - water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used. Passive and/or active treatment of stormwater discharge is encouraged, where

feasible. Treated stormwater may be discharged as a stormwater source regulated under this permit provided the discharge is not combined with discharges subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).

- E.G.5.3 *Discharge testing.* Test or evaluate all off-site discharge points covered under this permit for the presence of specific mining-related but unauthorized non-stormwater discharges such as seeps or adit discharges, or discharges subject to effluent limitations guidelines (40 CFR Part 440), mine drainage or process water. Alternatively (if applicable), you may keep a certification with your SWPCP consistent with E.G.6.6.

E.G.6 Additional SWPCP Requirements for Mining Operations

Note: The requirements in E.G.6 are not applicable to inactive metal mining facilities. Some requirements may be already a requirement under Schedule A.10.

- E.G.6.1 *Nature of industrial activities.* Briefly document in your SWPCP the mining and associated activities that can potentially affect the stormwater discharges covered by this permit, including a general description of the location of the site relative to major transportation routes and communities.
- E.G.6.2 *Site map.* Document in your SWPCP the locations of the following (as appropriate): mining or milling site boundaries; access and haul roads; outline of the drainage areas of each stormwater discharge point within the facility with indications of the types of discharges from the drainage areas; location(s) of all permitted discharges covered under an individual NPDES permit; outdoor equipment storage, fueling, and maintenance areas; materials handling areas; outdoor manufacturing, outdoor storage, and material disposal areas; outdoor chemicals and explosives storage areas; overburden, materials, soils, or waste storage areas; location of mine drainage (where water leaves mine) or other process water; tailings piles and ponds (including proposed ones); heap leach pads; off-site points of discharge for mine drainage and process water; surface waters; boundary of tributary areas that are subject to effluent limitations guidelines; and location(s) of reclaimed areas.
- E.G.6.3 *Potential pollutant sources.* For each area of the mine or mill site where stormwater discharges associated with industrial activities occur, identify the types of pollutants (e.g., heavy metals, sediment) likely to be present in significant amounts. Consider these factors: the mineralogy of the ore and waste rock (e.g., acid forming); toxicity and quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater; vegetation of site (if any); and history of significant leaks or spills of toxic or hazardous pollutants. Also include a summary of any existing ore or waste rock or overburden characterization data and test results for potential generation of acid rock. If any new data is acquired due to changes in ore type being mined, update your SWPCP with this information.
- E.G.6.4 *Documentation of control measures.* Document all control measures that you implement consistent with E.G.5.2. If control measures are implemented or planned but are not listed in E.G.5.2 (e.g., substituting a less toxic chemical for a more toxic one), include descriptions of them in your SWPCP. If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.
- E.G.6.5 *Employee training.* All employee training(s) must be documented in the SWPCP.
- E.G.6.6 *Certification of permit coverage for commingled non-stormwater discharges.* If you are able, consistent with E.G.5.3 above, to certify that a particular discharge composed of commingled stormwater and non-stormwater is covered under a separate NPDES permit, and that permit subjects the non-stormwater portion to effluent limitations prior to any commingling, retain

such certification with your SWPCP. This certification must identify the non-stormwater discharges, the applicable NPDES permit(s), the effluent limitations placed on the non-stormwater discharge by the permit(s), and the points at which the limitations are applied.

E.G.7 Additional Inspection Requirements

Except for earth-disturbing activities conducted prior to active mining activities as defined in E.G.3.2(a) and E.G.3.2(b), which are subject to E.G.4.4, inspect sites at least monthly unless adverse weather conditions make the site inaccessible. See E.G.8.4 for inspection requirements for inactive and unstaffed sites.

E.G.8 Additional Inspection Requirements for Inactive Operations

Once every three years an annual inspection must be performed by a Registered Professional Engineer.

E.G.9 Monitoring and Reporting Requirements. (See also Schedule B)

Note: There are no monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

E.G.9.1 **Benchmark Monitoring for Active Copper Ore Mining and Dressing Facilities.** Table E.G-1 identifies benchmarks that apply to active copper ore mining and dressing facilities. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.G-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Active Copper Ore Mining and Dressing Facilities (SIC code 1021)	Nitrate plus Nitrite Nitrogen	10 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark

E.G.9.2 *Benchmark Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.* For discharges from waste rock and overburden piles, perform benchmark monitoring once in the first year for the parameters listed in Table E.G-2, and twice annually in all subsequent years of coverage under this permit for any parameters for which the benchmark has been exceeded. You are also required to conduct analytic monitoring for the parameters listed in Table E.G-3 in accordance with the requirements in E.G.8.3. DEQ may also notify you that you must perform additional monitoring to accurately characterize the quality and quantity of pollutants discharged from your waste rock and overburden piles.

Table E.G-2

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099)	Turbidity	50 NTU
	pH	Statewide benchmark
	Total Antimony	9.0 mg/L
	Total Arsenic freshwater	0.34 mg/L
	Total Arsenic saltwater	0.069 mg/L
	Total Beryllium	0.13 mg/L
	Total Cadmium freshwater	See Table 10
	Total Cadmium saltwater	0.040 mg/L
	Total copper freshwater	Statewide benchmark
	Total copper saltwater	0.025 mg/L
	Total lead freshwater	Statewide benchmark
	Total lead saltwater	1.10 mg/L
	Total Mercury freshwater	0.0024 mg/L
	Total Mercury saltwater	0.0021 mg/L
	Total Nickel freshwater	See Table 10
	Total Nickel saltwater	0.074 mg/L
	Total Selenium freshwater	0.013 mg/L
	Total Selenium saltwater	0.29 mg/L
	Total Silver freshwater	See Table 10
	Total Silver saltwater	0.0019
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

E.G.9.3 *Additional Analytic Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.* In addition to the monitoring required in E.G.8.2 for discharges from waste rock and overburden piles, you must also conduct monitoring for additional parameters based on the type of ore you mine at your site. The schedule for monitoring is the same as E.G.9.2: once the first year for all parameters in Table E.G.3 (except radium and uranium) and twice annually in all subsequent years of coverage for any parameters

monitoring results have exceeded the benchmarks. Where a parameter in Table E.G-3 is the same as a pollutant you are required to monitor for in Table E.G-2 (i.e., for all of the metals), you must use the corresponding benchmark in Table E.G-2 and you may use any monitoring results conducted for E.G.8.2 to satisfy the monitoring requirement for that parameter for E.G.8.3. For radium and uranium, which do not have corresponding benchmarks in Table E.G-2, there are no applicable benchmarks. The frequency of monitoring for radium and uranium is quarterly for the first four quarters after which no monitoring is required.

Table E.G-3 Additional Monitoring Requirements for Discharges from Waste Rock and Overburden Piles

Type of Ore Mined	Supplemental Requirements		
	Pollutants of Concern		
	Total Suspended Solids (TSS)	pH	Metals, Total
Tungsten Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Nickel Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Aluminum Ore	X	X	Iron
Mercury Ore	X	X	Nickel (H)
Iron Ore	X	X	Iron (Dissolved)
Platinum Ore			Cadmium (H), Copper, Mercury, Lead (H), Zinc (H)
Titanium Ore	X	X	Iron, Nickel (H), Zinc (H)
Vanadium Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Molybdenum	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Mercury, Zinc (H)
Uranium, Radium, and Vanadium Ore	X	X	Chemical Oxygen Demand, Arsenic, Radium (Dissolved and Total), Uranium, Zinc (H)

Note: An "X" indicated for TSS and/or pH means that you are required to monitor for those parameters. (H) indicates that hardness must also be measured when this pollutant is measured.

E.G.9.4 Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirements for Monthly Visual Assessments and Routine Facility Inspections. As a Sector G facility, if you are seeking to exercise a monitoring or inspection waiver, you are conditionally exempt from the requirement to certify that “there are no industrial materials or activities exposed to stormwater” in Schedule B.9.a.iv of the permit. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the monitoring and inspection requirements; and
- DEQ retains the authority to revoke this exemption and/or the monitoring waiver 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.

Table E.G-4 Applicability of the Permit to Stormwater Discharge From Active Mining and Dressing Sites, Temporarily Inactive Sites, and Sites Undergoing Reclamation

Discharge/Source of Discharge	Note/Comment
Piles	
Waste rock/overburden	If composed entirely of stormwater and not combining with mine drainage. See note below.
Topsoil	--
Roads constructed of waste rock or spent ore	
Onsite haul roads	If composed entirely of stormwater and not combining with mine drainage. See note below.
Offsite haul and access roads	--
Roads not constructed of waste rock or spent ore	
Onsite haul roads	Except if mine drainage is used for dust control
Offsite haul and access roads	--
Milling/concentrating	
Discharge from tailings dams and dikes when constructed of waste rock/tailings	Except if process fluids are present and only if composed entirely of stormwater and not combining with mine drainage. See Note below.
Discharge from tailings dams/dikes when not constructed of waste rock and tailings	Except if process fluids are present
Concentration building	If stormwater only and no contact with piles
Mill site	If stormwater only and no contact with piles
Ancillary areas	
Office and administrative building and housing	If mixed with stormwater from the industrial area
Chemical storage area	--
Docking facility	Except if excessive contact with waste product that would otherwise constitute mine drainage
Explosive storage	--
Fuel storage (oil tanks/coal piles)	--
Vehicle and equipment maintenance area/building	--
Parking areas	But coverage unnecessary if only employee and visitor-type parking
Power plant	
Truck wash area	Except when excessive contact with waste product that would otherwise constitute mine drainage
Reclamation-related areas	
Any disturbed area (unreclaimed)	Only if not in active mining area
Reclaimed areas released from reclamation requirements prior to Dec. 17, 1990	--
Partially/inadequately reclaimed areas or areas not released from reclamation requirements	--

Note: Stormwater discharge from these sources are subject to the NPDES program for stormwater unless mixed with discharges subject to 40 CFR Part 440 that are regulated by another permit prior to mixing. Non-stormwater discharges from these sources are subject to NPDES permitting and may be subject to the effluent limitation guidelines under 40 CFR Part 440. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless: (1) it drains naturally (or is intentionally diverted) to a point source; and (2) combines with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440, as well as meeting other eligibility criteria contained in Part 1.1 of the permit. Operators bear the initial responsibility for determining the applicable technology-based standard for such discharges.

E.G.10. Termination of Permit Coverage

- E.G.10.1 *Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.* A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in E.G.3.3.
- E.G.10.2 *Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.* A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater discharge that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector H – Coal Mines and Coal Mining-Related Facilities

E.H.1 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

- E.H.1.1 *Mining operations* - For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities; and b) active mining activities, which includes reclamation. “Mining operations” can occur at both inactive mining facilities and temporarily inactive mining facilities.
- E.H.1.2 *Earth-disturbing activities conducted prior to active mining activities* – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:
a. activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and
b. construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be “construction” and have additional technology based effluent limits in E.H.2.2.
- E.H.1.3 *Active mining activities* – Activities related to the extraction, removal or recovery, and preparation of coal; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the “active mining area.” Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in E.H.2 have been met, and a well-delineated “active mining area” has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are “active mining activities.”
- E.H.1.4 *Active mining area* – A place where work or other activity related to the extraction, removal or recovery of coal is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.
Note: Earth-disturbing activities described in the definition in E.H.1.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered “earth-disturbing conducted prior to active mining activities”, and must comply with the requirements in E.H.2.
- E.H.1.5 *Inactive coal mining facility* – A site or portion of a site where coal mining and/or milling occurred in the past but there are no active mining operations occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive coal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the

extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

- E.H.1.6 *Temporarily inactive coal mining facility* – A site or portion of a site where coal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

E.H.2 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in E.H.1.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in technology-based effluent limits in E.H.3 and Schedule A, the inspection and monitoring requirements in Schedule B and in E.H.5 and E.H.6. Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in E.H.2.1.9 or E.H.2.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the E.H.2 requirements. At such time, authorized discharges become subject to all other applicable requirements in the permit, including the technology based effluent limits in limits in E.H.3 and Schedule A, the inspection and monitoring requirements in Schedule B and in E.H.5 and E.H.6.

- E.H.2.1 *Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in E.H.1.2(a) and E.H.1.2(b). These limits supersede the technology-based effluent limits listed in Schedule A.1.

E.H.2.1.1 *Erosion and sediment control installation requirements.*

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPCP must be installed and made operational as soon as conditions on each portion of the site allows.

E.H.2.1.2 *Erosion and sediment control maintenance requirements.* You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon as practicable.

E.H.2.1.3 *Perimeter controls.* You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

- E.H.2.1.4 *Sediment track-out.* For construction vehicles and equipment exiting the site directly onto paved roads, you must:
- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
 - Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
 - Remove sediment that is tracked out onto paved roads by end of the work day.
- Note: DEQ recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such “staining” is not a violation of E.H.2.1.4.
- E.H.2.1.5 *Soil or sediment stockpiles.* You must:
- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
 - Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
 - Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).
- E.H.2.1.6 *Sediment basins.* If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:
- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
 - Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.
- E.H.2.1.7 *Minimize dust.* You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.
- E.H.2.1.8 *Restrictions on use of treatment chemicals.* If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:
- Use conventional erosion and sediment controls prior to and after application of chemicals;
 - Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
 - Minimize the discharge risk from stored chemicals;
 - Comply with state/local requirements;
 - Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
 - Ensure proper training;
 - Provide proper SWPCP documentation.
- If you plan to use cationic treatment chemicals, you are ineligible for coverage under this permit, unless you notify your applicable DEQ regional office or agent in advance and the DEQ regional office or agent authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.
- E.H.2.1.9 *Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in E.H.1.2(a) (i.e., not applicable to construction*

of staging areas for structures and access roads as defined in E.H.1.2(b)). You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in E.H.1.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in E.H.1.2(a)) have permanently ceased, but in no case more than 7 days after the earth-disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 7 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

E.H.2.2 *Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.* The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in E.H.1.2(b). These limits supersede the technology-based limits listed in Schedule A and E.H.3. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in E.H.1.2(a)).

E.H.2.2.1 *Area of disturbance.* You must minimize the amount of soil exposed during construction activities.

E.H.2.2.2 *Erosion and sediment control design requirements.* You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
 - The expected amount, frequency, intensity and duration of precipitation;

- The nature of stormwater discharge and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
- The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

E.H.2.2.3 *Natural Buffers*. For any stormwater discharges from earth-disturbing activities within 50 feet of a waters of the state, you must comply with one of the following compliance alternatives:

1. Maintain a 50-foot undisturbed natural buffer between earth-disturbing activities and the waters of the state; or
2. Provide and maintain less than 50 feet of an undisturbed natural buffer zone and supplement by installing erosion and sediment controls that achieve a modeled or calculated sediment load reduction equivalent to a undisturbed natural buffer zone; or
3. If infeasible to provide and maintain an undisturbed natural buffer zone of any size, implement erosion and sediment controls that achieve a modeled or calculated sediment load reduction equivalent to a 50-foot undisturbed natural buffer zone. Ensure all discharges are treated by control measures prior to entering the natural buffer.
4. There are exceptions when buffer requirements do not apply:
 - The natural buffer has already been eliminated by preexisting development disturbances;
 - The disturbance is for a water-dependent structure or earth-disturbing approved under a CWA section 404 permit.

E.H.2.2.4 *Soil or sediment stockpiles*. In addition to the requirements in E.H.2.1.5, you must locate any piles outside of any natural buffers established under E.H.2.2.3.

E.H.2.2.5 *Sediment basins*. In addition to the requirements in E.H.2.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under E.H.2.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

E.H.2.2.6 *Native topsoil preservation*. You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the

topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

- E.H.2.2.7 *Steep slopes.* You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes. Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.
- E.H.2.2.8 *Soil compaction.* Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.
- E.H.2.2.9 *Dewatering Practices.* You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control. You must also meet the following requirements for dewatering activities:
- Discharge requirements:
 - No discharging visible floating solids or foam;
 - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
 - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the state be considered part of the treatment area;
 - Implement velocity dissipation devices at all points where dewatering water is discharged;
 - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
 - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturers' specifications.
 - Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in E.H.2.1.8.
- E.H.2.2.10 *Pollution prevention requirements.*
- Prohibited discharges:
 - Turbid discharge or discharge of sediment;
 - Wastewater from washout of concrete;

- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other materials;
- Wastewater from wheel wash;
- Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
- Soaps, solvents, or detergents used in vehicle or equipment washing;
- Toxic or hazardous substances from a spill or other release.
- Design and location requirements: Minimize the discharge of pollutants from pollutant sources by:
- Design and location requirements: Minimize the discharge of pollutants from pollutant sources by:
 - Minimizing exposure;
 - Using secondary containment, spill kits, or other equivalent measures;
 - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
 - Cleaning up spills immediately (do not clean by hosing area down).
- Pollution prevention requirements for wash waters: Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes: Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

E.H.2.2.11 *Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in E.H.1.2(b) (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in E.H.1.2(a)).*

You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily (“temporarily” means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
 - Seed or plant the area, and provide temporary cover to protect the planted area;
 - Once established, vegetation must be uniform (evenly distributed without large bare areas) perennial vegetation, which provides 70 percent or more coverage based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:

- Install or apply all non-vegetative measures;
- Cover all areas of exposed soil.

Note: For the purposes of this permit, DEQ will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in #1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid or drought-stricken areas:
 - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
 - Initiate vegetative stabilization as soon as conditions on the site allow;
 - Document the schedule that will be followed for initiating and completing vegetative stabilization;
 - Cover planted or seeded area with bio or photo degradable erosion controls designed to prevent erosion without active maintenance.
- Sites affected by severe storm events or other unforeseen circumstances:
 - Initiate vegetative stabilization as soon conditions on the site allow;
 - Document the schedule that will be followed for initiating and completing vegetative stabilization;
 - Add a suitable interim measures (such as mulch or bark) are in place if 70 percent coverage of vegetation is expected to expand.

E.H.2.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in E.H.1.2(a) and E.H.1.2(b), in addition to the water quality standards in Schedule A.3.

Stricter requirements apply if your site will discharge to an impaired waters that are listed for turbidity or sedimentation or have an EPA-approved TMDL for sedimentation or turbidity:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

E.H.2.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspections requirements in Schedule B and E.H.7 of the permit for earth-disturbing activities conducted prior to active mining activities defined in E.H.1.2(a) and E.H.1.2(b).

E.H.2.4.1 *Inspection Frequency*

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.
 - Note:
 - Inspections only required during working hours;

- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that.

Note: You are required to specify in your SWPCP which schedule you will be following.

Note: “Within 24 hours of the occurrence of a storm event” means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

E.H.2.4.2 *Reductions in Inspection Frequency*

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to E.H.2.1.9 or E.H.2.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

E.H.2.4.3 *Areas to be Inspected.* You must at a minimum inspect the following areas:

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

E.H.2.4.4 *What to Check for During Inspections.* At a minimum you must check:

- Whether all stormwater controls are installed, operational, and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring:

- The quality and characteristics of the discharge;
- Whether controls are operating effectively.

E.H.2.4.5 *Inspection Report.* Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

E.H.2.5 *Cessation of Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The requirements in E.H.2 no longer apply for any earth-disturbing activities conducted prior to active mining activities as defined in E.H.1.2(a) or E.H.1.2(b) where:

1. Earth-disturbing activities have ceased; and
2. Stabilization has been met consistent with E.H.2.1.9 or E.H.2.2.11 (not required for areas where active mining activities will occur).

E.H.3 Technology-Based Effluent Limits for Active Mining Activities

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in E.H.1.2(a) or E.H.1.2(b).

E.H.3.1 *Good Housekeeping Measures.* As part of your good housekeeping program, in order to minimize discharges of pollutants in stormwater, implement control measures such as the following, where determined to be feasible including: using sweepers and covered storage; watering haul roads to minimize dust generation; and conserving vegetation to minimize erosion. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Schedule A.1.f.

E.H.3.2 *Preventive Maintenance.* Perform inspections or other equivalent measures of storage tanks and pressure lines of fuels, lubricants, hydraulic fluid, and slurry to prevent leaks due to deterioration or faulty connections.

E.H.4 Additional SWPCP Requirements for Mining Operations

Note: The requirements in E.H.6 are not applicable to inactive coal mining facilities. Some requirements may be already a requirement under Schedule A.10.

E.H.4.1 *Other Applicable Regulations.* Most active coal mining-related areas (SIC Codes 1221-1241) are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the Surface Mining Control and Reclamation Act (SMCRA). OSM has granted authority to most coal-producing states to implement SMCRA through State SMCRA regulations. All SMCRA requirements regarding control of stormwater-related pollutant discharges must be addressed and then documented with the SWPCP (directly or by reference).

E.H.4.2 *Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; inactive mines and related areas; acidic spoil, refuse, or unreclaimed disturbed areas; and liquid storage tanks containing pollutants such as caustics, hydraulic fluids, and lubricants.

- E.H.4.3 *Potential Pollutant Sources.* Document in your SWPCP the following sources and activities that have potential pollutants associated with them: truck traffic on haul roads and resulting generation of sediment subject to discharge and dust generation; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid, or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil.
- E.H.4.4 If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

E.H.5 Additional Inspection Requirements

- E.H.5.1 *Inspections of Active Mining-Related Areas.* Except for earth-disturbing activities conducted prior to active mining activities as defined in E.H.1.2(a) and E.H.1.2(b), which are subject to E.H.2.4, perform routine inspections of active mining areas covered by this permit, corresponding with the inspections as performed by SMCRA inspectors, of all mining-related areas required by SMCRA. Also maintain the records of the SMCRA authority representative. See E.H.8.1 for inspection requirements for inactive and unstaffed sties.
- E.H.5.2 *Sediment and Erosion Control.* As indicated in E.H.4.1, SMCRA requirements regarding sediment and erosion control measures must be complied with for those areas subject to SMCRA authority, including inspection requirements.
- E.H.5.3 *Routine Site Inspections.* Your inspection program must include inspections for pollutants entering the drainage system from activities located on or near coal mining-related areas. Among the areas to be inspected are haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas.

E.H.6 Sector-Specific Benchmarks

Table E.H-1 identifies benchmarks that apply to the specific subsectors of Sector H. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Note: There are no monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

Table E.H-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Coal Mines and Related Areas (SIC codes 1221-1241)	Total Aluminum	1.10 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark

E.H.6.1 *Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirements for Monthly Visual Assessments and Routine Facility Inspections.* As a Sector H facility, if you are seeking to exercise a monitoring or inspection waiver, you are conditionally exempt from the requirement to certify that “there are no industrial materials or activities exposed to stormwater” in Schedule B.9.a.iv of the permit. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the monitoring and inspection requirements; and
- DEQ retains the authority to revoke this exemption and/or the monitoring waiver 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.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct routine facility inspections, monthly visual assessments, and benchmark and impaired waters monitoring. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

E.H.7 Termination of Permit Coverage

E.H.7.1 *Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.* A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed.

E.H.7.2 *Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.* A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater runoff that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to exceedance of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector I – Oil and Gas Extraction

E.I.1 Additional Technology-Based Effluent Limits

- E.I.1.1 *Vegetative Controls.* Implement vegetative practices designed to preserve existing vegetation, where attainable, and revegetate open areas as soon as practicable after grade drilling. Consider the following (or equivalent measures): temporary or permanent seeding, mulching, sod stabilization, vegetative buffer strips, and tree protection practices. Begin implementing appropriate vegetative practices on all disturbed areas within 14 days following the last activity in that area.

E.I.2 Additional SWPCP Requirement

- E.I.2.1 *Drainage Area Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: Reportable Quantity (RQ) releases; locations used for the treatment, storage, or disposal of wastes; processing areas and storage areas; chemical mixing areas; construction and drilling areas; all areas subject to the effluent guidelines requirements for “No Discharge” in accordance with 40 CFR 435.32; and the structural controls to achieve compliance with the “No Discharge” requirements.
- E.I.2.2 *Potential Pollutant Sources.* Also document in your SWPCP the following sources and activities that have potential pollutants associated with them: chemical, cement, mud, or gel mixing activities; drilling or mining activities; and equipment cleaning and rehabilitation activities. In addition, include information about the reportable quantity (RQ) release that triggered the permit application requirements: the nature of the release (e.g., spill of oil from a drum storage area), amount of oil or hazardous substance released, amount of substance recovered, date of the release, cause of the release (e.g., poor handling techniques and lack of containment in the area), areas affected by the release (i.e., land and water), procedure to clean up release, actions or procedures implemented to prevent or improve response to a release, and remaining potential contamination of stormwater from release (taking into account human health risks, the control of drinking water intakes, and the designated uses of the receiving water).
- E.I.2.3 *Erosion and Sedimentation Control.* Unless covered by the NPDES Construction Stormwater 1200-C General Permit, the additional documentation requirements for sediment and erosion controls for well drillings and sand/shale mining areas include the following:
- E.I.2.3.1 *Site Description.* Also include a description in your SWPCP of the nature of the exploration activity, estimates of the total area of site and area disturbed due to exploration activity, an estimate of runoff coefficient of the site, a site drainage map, including approximate slopes, and the names of all receiving waters.
- E.I.2.3.2 *Vegetative Controls.* Document vegetative practices used in the SWPCP.

E.I.3 Additional Inspection Requirements.

All erosion and sediment controls must be inspected either: 1) every 7 days; or 2) once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector K – Hazardous Waste Treatment, Storage, or Disposal Facilities

E.K.1 Definitions

- K.1.1 *Contaminated stormwater* - stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in E.K.1.4. Some specific areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.
- K.1.2 *Drained free liquids* - aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.
- K.1.3 *Landfill* - an area of land or an excavation in which wastes are placed for permanent disposal, but that is not a land application or land treatment unit, surface impoundment, underground injection well, waste pile, salt dome formation, salt bed formation, underground mine, or cave as these terms are defined in 40 CFR 257.2, 258.2, and 260.10.
- K.1.4 *Landfill wastewater* - as defined in 40 CFR Part 445 (Landfills Point Source Category), all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated groundwater, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated stormwater, and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.
- K.1.5 *Leachate* - liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.
- K.1.6 *Non-contaminated stormwater* - stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in E.K.1.4. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

E.K.2 Sector-Specific Benchmarks

Table E.K-1 identifies benchmarks that apply to the specific subsectors of Sector K. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, which describe your site activities.

Table E.K-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
ALL - Industrial Activity Code "HZ" Benchmarks only applicable to discharges not subject to effluent limitations in 40 CFR Part 445 Subpart A.	Ammonia	2.14 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Total Arsenic freshwater	0.34 mg/L
	Total Arsenic saltwater	0.069 mg/L
	Total Cadmium freshwater	See Table 10
	Total Cadmium saltwater	0.04 mg/L
	Total Cyanide freshwater	0.022 mg/L
	Total Cyanide saltwater	0.001 mg/L
	E. coli	406 organisms/100 mL
	Total Mercury freshwater	0.0024 mg/L
	Total Mercury saltwater	0.0021 mg/L
	Total Selenium freshwater	0.013 mg/L
	Total Selenium saltwater	0.29 mg/L
	Total Silver freshwater	See Table 10
	Total Silver saltwater	0.0019 mg/L

E.K.3 Effluent Limitations Based on Effluent Limitations Guidelines

Table E.K-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under this permit.

Table E.K-2¹

Industrial Activity	Parameter	Effluent Limit
Discharges from hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart A.	Biochemical Oxygen Demand (BOD ₅)	220 mg/L, daily maximum
		56 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum

Table E.K-2¹

Industrial Activity	Parameter	Effluent Limit
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.042 mg/L, daily maximum
		0.019 mg/L, monthly avg. maximum
	Aniline	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Benzoic Acid	0.119 mg/L, daily maximum
		0.073 mg/L, monthly avg. maximum
	Naphthalene	0.059 mg/L, daily maximum
		0.022 mg/L, monthly avg. maximum
	p-Cresol	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Phenol	0.048 mg/L, daily maximum
		0.029 mg/L, monthly avg. maximum
	Pyridine	0.072 mg/L, daily maximum
		0.025 mg/L, monthly avg. maximum
	Total Arsenic	1.1 mg/L, daily maximum
		0.54 mg/L, monthly avg. maximum
	Total Chromium	1.1 mg/L, daily maximum
		0.46 mg/L, monthly avg. maximum
	Total Zinc	0.535 mg/L, daily maximum
		0.296 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

¹ Monitor semi-annually. As set forth at 40 CFR Part 445 Subpart A, these numeric limitations apply to contaminated stormwater discharges from hazardous waste landfills subject to the provisions of RCRA Subtitle C at 40 CFR Parts 264 (Subpart N) and 265 (Subpart N) except for any of the following facilities:

- (a) landfills operated in conjunction with other industrial or commercial operations when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
- (b) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
- (c) landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or
- (d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector L – Landfills, Land Application Sites, and Open Dumps

E.L.1 Definitions

- E.L.1.1 *Contaminated stormwater* - stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Some areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.
- E.L.1.2 *Drained free liquids* - aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.
- E.L.1.3 *Landfill wastewater* - as defined in 40 CFR Part 445 (Landfills Point Source Category) all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated groundwater, and wastewater from recovery pumping wells. Landfill process wastewater includes, but is not limited to, leachate; gas collection condensate; drained free liquids; laboratory-derived wastewater; contaminated stormwater; and contact washwater from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.
- E.L.1.4 *Leachate* - liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.
- E.L.1.5 *Non-contaminated stormwater* - stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

E.L.2 Additional Technology-Based Effluent Limits

- E.L.2.1 *Preventive Maintenance Program*. As part of your preventive maintenance program, maintain the following: all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater; the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.
- E.L.2.2 *Erosion and Sedimentation Control*. Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill or open dump; landfills or open dump areas that have gotten final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.
- E.L.2.3 *Unauthorized Discharge Test Certification*. The discharge test and certification must also be conducted for the presence of leachate and vehicle washwater.

E.L.3 Additional SWPCP Requirements

- E.L.3.1 *Drainage Area Site Map*. Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred,

locations of any known leachate springs or other areas where uncontrolled leachate may commingle with discharge, and leachate collection and handling systems.

- E.L.3.2 *Summary of Potential Pollutant Sources.* Document in your SWPCP the following sources and activities that have potential pollutants associated with them: fertilizer, herbicide, and pesticide application; earth and soil moving; waste hauling and loading or unloading; outdoor storage of significant materials, including daily, interim, and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; and failure or leaks from leachate collection and treatment systems.

E.L.4 Additional Inspection Requirements

- E.L.4.1 *Inspections of Active Sites.* Except in arid and semi-arid climates, inspect operating landfills, open dumps, and land application sites at least once every 7 days. Focus on areas of landfills that have not yet been finally stabilized; active land application areas, areas used for storage of material and wastes that are exposed to precipitation, stabilization, and structural control measures; leachate collection and treatment systems; and locations where equipment and waste trucks enter and exit the site. Ensure that sediment and erosion control measures are operating properly. For stabilized sites and areas where land application has been completed, or where the climate is arid or semi-arid, conduct inspections at least once every month.
- E.L.4.2 *Inspections of Inactive Sites.* Inspect inactive landfills, open dumps, and land application sites at least monthly. Qualified personnel must inspect landfill (or open dump) stabilization and structural erosion control measures, leachate collection and treatment systems, and all closed land application areas.

E.L.5 Additional Post-Authorization Documentation Requirements

- E.L.5.1 *Recordkeeping and Internal Reporting.* Keep records with your SWPCP of the types of wastes disposed of in each cell or trench of a landfill or open dump. For land application sites, track the types and quantities of wastes applied in specific areas.

E.L.6 Sector-Specific Benchmarks

Table E.L-1 identifies benchmarks that apply to the specific subsectors of Sector L. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, which describe your site activities.

Table E.L-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration¹
All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60 (Industrial Activity Code “LF”)	Total Suspended Solids (TSS)	Statewide benchmark
	E. coli	406 organisms/100 mL

¹Benchmark monitoring required only for discharges not subject to effluent limitations in 40 CFR Part 445 Subpart B (see Table L-2 below).

E.L.7. Effluent Limitations Based on Effluent Limitations Guidelines

Table E.L-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under this permit.

Table E.L-2¹

Industrial Activity	Parameter	Effluent Limit
Discharges from non-hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart B.	Biochemical Oxygen Demand (BOD ₅)	140 mg/L, daily maximum
		37 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.033 mg/L, daily maximum
		0.016 mg/L monthly avg. maximum
	Benzoic Acid	0.12 mg/L, daily maximum
		0.071 mg/L, monthly avg. maximum
	p-Cresol	0.025 mg/L, daily maximum
		0.014 mg/L, monthly avg. maximum
	Phenol	0.026 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Total Zinc	0.20 mg/L, daily maximum
		0.11 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

¹ Monitor semi-annually. As set forth at 40 CFR Part 445 Subpart B, these numeric limitations apply to contaminated stormwater discharges from MSWLFs that have not been closed in accordance with 40 CFR 258.60, and to contaminated stormwater discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities:

- (a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
- (b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
- (c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or
- (d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector M – Motor Vehicle Parts, Used

E.M.1 Additional Technology-Based Effluent Limits

- E.M.1.1 *Spill and Leak Prevention Procedures.* Drain vehicles intended to be dismantled of all fluids upon arrival at the site (or as soon thereafter as feasible), or employ some other equivalent means to prevent spills and leaks.
- E.M.1.2 *Employee Training.* If applicable to your facility, address the following areas (at a minimum) in your employee training program: proper handling (collection, storage, and disposal) of oil, used mineral spirits, anti-freeze, mercury switches, and solvents.
- E.M.1.3 *Management of Discharge.* Consider the following management practices: berms or drainage ditches on the property line (to help prevent run-on from neighboring properties); berms for uncovered outdoor storage of oily parts, engine blocks, and above-ground liquid storage; installation of detention ponds; and installation of filtering devices and oil and water separators.

E.M.2 Additional SWPCP Requirements

- E.M.2.1 *Drainage Area Site Map.* Identify locations used for dismantling, storage, and maintenance of used motor vehicle parts. Also identify where any of the following may be exposed to precipitation or stormwater: dismantling areas, parts (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers) storage areas, and liquid storage tanks and drums for fuel and other fluids.
- E.M.2.2 *Potential Pollutant Sources.* Assess the potential for the following to contribute pollutants to stormwater discharges: vehicle storage areas, dismantling areas, parts storage areas (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers), and fueling stations.

E.M.3 Additional Inspection Requirements

Immediately (or as soon thereafter as feasible) inspect vehicles arriving at the site for leaks. Inspect monthly for signs of leakage all equipment containing oily parts, hydraulic fluids, any other types of fluids, or mercury switches. Also, inspect monthly for signs of leakage all vessels and areas where hazardous materials and general automotive fluids are stored, including, but not limited to, mercury switches, brake fluid, transmission fluid, radiator water, and antifreeze.

E.M.4 Sector-Specific Benchmarks

Table E.M-1 identifies benchmarks that apply to the specific subsectors of Sector M. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.M-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Automobile Salvage Yards (SIC code 5015)	Total Aluminum	1.10 mg/L
	Total Suspended Solids (TSS)	Total Suspended Solids (TSS)
	Total lead freshwater	Statewide benchmark
	Total lead saltwater	1.10 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector N – Scrap and Waste Materials

E.N.1 Additional Technology-Based Effluent Limits

E.N.1.1 *Scrap and Waste Recycling Facilities (Non-Source Separated, Nonliquid Recyclable Materials).*

Requirements for facilities that receive, process, and do wholesale distribution of nonliquid recyclable wastes (e.g., ferrous and nonferrous metals, plastics, glass, cardboard, and paper). These facilities may receive both nonrecyclable and recyclable materials. This section is not intended for those facilities that accept recyclables only from primarily non-industrial and residential sources.

E.N.1.1.1 *Inbound Recyclable and Waste Material Control Program.* Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials. Following are some control measure options: (a) provide information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual containers or drums) and removal of mercury switches from vehicles before delivery to your facility; (b) establish procedures to minimize the potential of any residual fluids from coming into contact with precipitation or stormwater; (c) establish procedures for accepting scrap lead-acid batteries (additional requirements for the handling, storage, and disposal or recycling of batteries are contained in the scrap lead-acid battery program provisions in E.N.3.1.6); (d) provide training targeted for those personnel engaged in the inspection and acceptance of inbound recyclable materials; and (e) establish procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act (RCRA).

E.N.1.1.2 *Scrap and Waste Material Stockpiles and Storage (Outdoor).* Minimize contact of stormwater discharge with stockpiled materials, processed materials, and nonrecyclable wastes. Following are some control measure options: (a) permanent or semi-permanent covers; (b) sediment traps, vegetated swales and strips, catch basin filters, and sand filters to facilitate settling or filtering of pollutants; (c) dikes, berms, containment trenches, culverts, and surface grading to divert runoff from storage areas; (d) silt fencing; and (e) oil and water separators, sumps, and dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).

E.N.1.1.3 *Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage).* Minimize contact of stormwater with residual cutting fluids by: (a) storing all turnings exposed to cutting fluids under some form of permanent or semi-permanent cover, or (b) establishing dedicated containment areas for all turnings that have been exposed to cutting fluids. Any containment areas must be constructed of concrete, asphalt, or other equivalent types of impermeable material and include a barrier (e.g., berms, curbing, elevated pads) to prevent contact with stormwater run-on. Stormwater discharge from these areas can be discharged, provided that any discharge is first collected and treated by an oil and water separator or its equivalent. You must regularly maintain the oil and water separator (or its equivalent) and properly dispose of or recycle collected residual fluids.

- E.N.1.1.4 *Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage).* Minimize stormwater discharge contact of residual liquids and particulate matter from materials stored indoors or under cover. Following are some control measure options: (a) good housekeeping measures, including the use of dry absorbents or wet vacuuming to contain, dispose of, or recycle residual liquids originating from recyclable containers, or mercury spill kits for spills from storage of mercury switches; (b) not allowing washwater from tipping floors or other processing areas to discharge to the storm sewer system; and (c) disconnecting or sealing off all floor drains connected to the storm sewer system.
- E.N.1.1.5 *Scrap and Recyclable Waste Processing Areas.* Minimize stormwater discharge from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with stormwater (i.e., through good housekeeping, preventive maintenance, etc.). Following are some control measure options: (a) regularly inspect equipment for spills or leaks and malfunctioning, worn, or corroded parts or equipment; (b) establish a preventive maintenance program for processing equipment; (c) use dry-absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from storage of mercury switches; (d) on unattended hydraulic reservoirs over 150 gallons in capacity, install protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire volume of the reservoir; (e) containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of stormwater runoff with outdoor processing equipment or stored materials; (f) oil and water separators or sumps; (g) permanent or semi-permanent covers in processing areas where there are residual fluids and grease; (h) retention or detention ponds or basins; sediment traps, and vegetated swales or strips (for pollutant settling and filtration); (i) catch basin filters or sand filters.
- E.N.1.1.6 *Scrap Lead-Acid Battery Program.* Properly handle, store, and dispose of scrap lead-acid batteries. Following are some control measure options (a) segregate scrap lead-acid batteries from other scrap materials; (b) properly handle, store, and dispose of cracked or broken batteries; (c) collect and dispose of leaking lead-acid battery fluid; (d) minimize or eliminate (if possible) exposure of scrap lead-acid batteries to precipitation or stormwater; and (e) provide employee training for the management of scrap batteries.
- E.N.1.1.7 *Spill Prevention and Response Procedures.* (See also Schedule A.1.h) Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.
- E.N.1.1.8 *Supplier Notification Program.* As appropriate, notify major suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.
- E.N.1.2 *Waste Recycling Facilities (Liquid Recyclable Materials).*
- E.N.1.2.1 *Waste Material Storage (Indoor).* Minimize or eliminate contact between residual liquids from waste materials stored indoors and from stormwater. The plan may refer to applicable portions of other existing plans, such as Spill Prevention, Control, and

Countermeasure (SPCC) plans required under 40 CFR Part 112. Following are some control measure options (a) procedures for material handling (including labeling and marking); (b) clean up spills and leaks with dry absorbent materials, a wet vacuum system; (c) appropriate containment structures (trenching, curbing, gutters, etc.); and (d) a drainage system, including appurtenances (e.g., pumps or ejectors, manually operated valves), to handle discharges from diked or bermed areas. Drainage must be discharged to an appropriate treatment facility or sanitary sewer system, or otherwise disposed of properly. These discharges may require coverage under a separate NPDES wastewater permit or industrial user permit under the pretreatment program.

- E.N.1.2.2 *Waste Material Storage (Outdoor)*. Minimize stormwater discharge contact between stored residual liquids. The plan may refer to applicable portions of other existing plans, such as SPCC plans required under 40 CFR Part 112. Discharges of precipitation from containment areas containing used oil must also be in accordance with applicable sections of 40 CFR Part 112. Following are some control measure options (a) appropriate containment structures (e.g., dikes, berms, curbing, pits) to store the volume of the largest tank, with sufficient extra capacity for precipitation; (b) drainage control and other diversionary structures; (c) corrosion protection and/or leak detection systems for storage tanks; and (d) dry-absorbent materials or a wet vacuum system to collect spills.
- E.N.1.2.3 *Trucks and Rail Car Waste Transfer Areas*. Minimize pollutants in discharges from truck and rail car loading and unloading areas. Include measures to clean up minor spills and leaks resulting from the transfer of liquid wastes. Following are two control measure options: (a) containment and diversionary structures to minimize contact with precipitation, and (b) dry clean-up methods, wet vacuuming, roof coverings, or runoff controls.
- E.N.1.3 *Recycling Facilities (Source-Separated Materials)*. The following identifies considerations for facilities that receive only source-separated recyclables, primarily from non-industrial and residential sources.
- E.N.1.3.1 *Inbound Recyclable Material Control*. Minimize the chance of accepting nonrecyclables (e.g., hazardous materials) that could be a significant source of pollutants by conducting inspections of inbound materials. Following are some control measure options: (a) providing information and education measures to inform suppliers of recyclables about acceptable and non-acceptable materials, (b) training drivers responsible for pickup of recycled material, (c) clearly marking public drop-off containers regarding which materials can be accepted, (d) rejecting nonrecyclable wastes or household hazardous wastes at the source, and (e) establishing procedures for handling and disposal of nonrecyclable material.
- E.N.1.3.2 *Outdoor Storage*. Minimize exposure of recyclables to stormwater. Use good housekeeping measures to prevent accumulation of particulate matter and fluids, particularly in high traffic areas. Following are some control measure options (a) provide totally enclosed drop-off containers for the public; (b) install a sump and pump with each container pit and treat or discharge collected fluids to a sanitary sewer system; (c) provide dikes and curbs for secondary containment (e.g., around bales of recyclable waste paper); (d) divert stormwater away from outside material storage areas; (e) provide covers over containment bins, dumpsters, and roll-off boxes; and (f) store the equivalent of one day's volume of recyclable material indoors.

- E.N.1.3.3 *Indoor Storage and Material Processing.* Minimize the release of pollutants from indoor storage and processing areas. Following are some control measure options (a) schedule routine good housekeeping measures for all storage and processing areas, (b) prohibit tipping floor washwater from draining to the storm sewer system, and (c) provide employee training on pollution prevention practices.
- E.N.1.3.4 *Vehicle and Equipment Maintenance.* Following are some control measure options for areas where vehicle and equipment maintenance occur outdoors (a) prohibit vehicle and equipment washwater from discharging to the storm sewer system, (b) minimize or eliminate outdoor maintenance areas whenever possible, (c) establish spill prevention and clean-up procedures in fueling areas, (d) avoid topping off fuel tanks, (e) divert stormwater from fueling areas, (f) store lubricants and hydraulic fluids indoors, and (g) provide employee training on proper handling and storage of hydraulic fluids and lubricants.

E.N.2 Additional SWPCP Requirements

- E.N.2.1 *Drainage Area Site Map.* Document in your SWPCP the locations of any of the following activities or sources that may be exposed to precipitation or stormwater: scrap and waste material storage, outdoor scrap and waste processing equipment; and containment areas for turnings exposed to cutting fluids.
- E.N.2.2 *Maintenance Schedules/Procedures for Collection, Handling, and Disposal or Recycling of Residual Fluids at Scrap and Waste Recycling Facilities.* If you are subject to E.N.1.1.3, your SWPCP must identify any applicable maintenance schedule and the procedures to collect, handle, and dispose of or recycle residual fluids.

E.N.3 Sector-Specific Benchmarks

Table E.N-1 identifies benchmarks that apply to the specific subsectors of Sector N. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.N-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling (SIC code 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Aluminum	1.10 mg/L
	Total Suspended Solids (TSS)	Statewide benchmark
	Total copper freshwater	Statewide benchmark
	Total copper saltwater	0.025 mg/L
	Total lead freshwater	Statewide benchmark
	Total lead saltwater	1.10 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector O – Steam Electric Generating Facilities.

E.O.1 Additional Technology-Based Effluent Limits.

E.Q.1.1 *Good Housekeeping Measures.* You must implement the following good housekeeping measures in addition to requirements in Schedule A.1 of the permit:

- E.O.1.1.1 *Fugitive Dust Emissions.* Minimize fugitive dust emissions from coal handling areas. To minimize the tracking of coal dust offsite, consider procedures such as installing specially designed tires or washing vehicles in a designated area before they leave the site and controlling the wash water.
- E.O.1.1.2. *Delivery Vehicles.* Minimize contamination of stormwater discharge from delivery vehicles arriving at the plant site. Consider procedures to inspect delivery vehicles arriving at the plant site and ensure overall integrity of the body or container and procedures to deal with leakage or spillage from vehicles or containers.
- E.O.1.1.3 *Fuel Oil Unloading Areas.* Minimize contamination of precipitation or stormwater from fuel oil unloading areas. Consider using containment curbs in unloading areas, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and using spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).
- E.O.1.1.4 *Chemical Loading and Unloading.* Minimize contamination of precipitation or stormwater from chemical loading and unloading areas. Consider using containment curbs at chemical loading and unloading areas to contain spills, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and loading and unloading in covered areas and storing chemicals indoors.
- E.O.1.1.5 *Miscellaneous Loading and Unloading Areas.* Minimize contamination of precipitation or stormwater from loading and unloading areas. Consider covering the loading area; grading, berming, or curbing around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.
- E.O.1.1.6 *Liquid Storage Tanks.* Minimize contamination of stormwater from above-ground liquid storage tanks. Consider protective guards around tanks, containment curbs, spill and overflow protection, dry cleanup methods, or equivalent measures.
- E.O.1.1.7 *Large Bulk Fuel Storage Tanks.* Minimize contamination of stormwater from large bulk fuel storage tanks. Consider containment berms (or their equivalent). You must also comply with applicable State and Federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.
- E.O.1.1.8 *Spill Reduction Measures.* Minimize the potential for an oil or chemical spill, or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all above-ground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.
- E.O.1.1.9 *Oil-Bearing Equipment in Switchyards.* Minimize contamination of stormwater from oil-bearing equipment in switchyard areas. Consider using level grades and

gravel surfaces to retard flows and limit the spread of spills, or collecting runoff in perimeter ditches.

- E.O.1.1.10 *Residue-Hauling Vehicles*. Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.
- E.O.1.1.11 *Ash Loading Areas*. Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water before departure of each loaded vehicle.
- E.O.1.1.12 *Areas Adjacent to Disposal Ponds or Landfills*. Minimize contamination of stormwater from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.
- E.O.1.1.13 *Landfills, Scrap yards, Surface Impoundments, Open Dumps, General Refuse Sites*. Minimize the potential for contamination stormwater from these areas.

E.O.2 Additional SWPCP Requirements

- E.O.2.1 *Drainage Area Site Map*. Document in your SWPCP the locations of any of the following activities or sources that may be exposed to precipitation or stormwater: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

E.O.3 Additional Inspection Requirements

- E.O.3.1 *Inspection*. Inspect the following areas monthly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

E.O.4 Effluent Limitations Based on Effluent Limitations Guidelines

Table E.O-1 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other wastestreams that may be covered under this permit.

Table E.O-1¹

Industrial Activity	Parameter	Effluent Limit
Discharges from coal storage piles at Steam Electric Generating Facilities	TSS	50 mg/l ²
	pH	6.0 min - 9.0 max

¹ Monitor semi-annually.

² If your facility is designed, constructed, and operated to treat the volume of coal pile discharge that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile discharge from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector P – Land Transportation and Warehousing.

E.P.1 Additional Technology-Based Effluent Limits

E.P.1.1 *Good Housekeeping Measures.* In addition to the Good Housekeeping requirements in Schedule A.1 of the permit, you must do the following:

- E.P.1.1.1 *Vehicle and Equipment Storage Areas.* Minimize the potential for stormwater exposure to leaky or leak-prone vehicles/equipment awaiting maintenance. Consider the following (or other equivalent measures): use of drip pans under vehicles/equipment, indoor storage of vehicles and equipment, installation of berms or dikes, use of absorbents, roofing or covering storage areas, and cleaning pavement surfaces to remove oil and grease.
 - E.P.1.1.2 *Fueling Areas.* Minimize contamination of stormwater discharge from fueling areas. Consider the following (or other equivalent measures): Covering the fueling area; using spill/overflow protection and cleanup equipment; minimizing stormwater run-on/runoff to the fueling area; using dry cleanup methods; and treating and/or recycling collected stormwater.
 - E.P.1.1.3 *Material Storage Areas.* Maintain all material storage vessels (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) to prevent contamination of stormwater and plainly label them (e.g., “Used Oil,” “Spent Solvents,” etc.). Consider the following (or other equivalent measures): storing the materials indoors; installing berms/dikes around the areas; minimizing stormwater to the areas; using dry cleanup methods; and treating and/or recycling collected stormwater.
 - E.P.1.1.4 *Vehicle and Equipment Cleaning Areas.* Minimize contamination of stormwater discharge from all areas used for vehicle/equipment cleaning. Consider the following (or other equivalent measures): performing all cleaning operations indoors; covering the cleaning operation, ensuring that all washwater drains to a proper collection system (i.e., not the stormwater drainage system); treating and/or recycling collected washwater, or other equivalent measures.
 - E.P.1.1.5 *Vehicle and Equipment Maintenance Areas.* Minimize contamination of stormwater discharge from all areas used for vehicle/equipment maintenance. Consider the following (or other equivalent measures): performing maintenance activities indoors; using drip pans; keeping an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting wet clean up practices if these practices would result in the discharge of pollutants to stormwater drainage systems; using dry cleanup methods; treating and/or recycling collected stormwater, minimizing run on/runoff of stormwater to maintenance areas.
 - E.P.1.1.6 *Locomotive Sanding (Loading Sand for Traction) Areas.* Consider the following (or other equivalent measures): covering sanding areas; minimizing stormwater run on/runoff; or appropriate sediment removal practices to minimize the offsite transport of sanding material by stormwater.
- E.P.1.2 *Employee Training.* Address the following activities, as applicable: used oil and spent solvent management; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management.

E.P.2 Additional SWPCP Requirements

- E.P.2.1 *Drainage Area Site Map.* Identify in the SWPCP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/stormwater: Fueling stations; vehicle/equipment maintenance or cleaning areas; storage areas for vehicle/equipment with actual or potential fluid leaks; loading/unloading areas; areas where treatment, storage or disposal of wastes occur; liquid storage tanks; processing areas; and storage areas.
- E.P.2.2 *Potential Pollutant Sources.* Assess the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: Onsite waste storage or disposal; dirt/gravel parking areas for vehicles awaiting maintenance; illicit plumbing connections between shop floor drains and the stormwater conveyance system(s); and fueling areas. Describe these activities in the SWPCP.
- E.P.2.3 *Description of Good Housekeeping Measures.* You must document in your SWPCP the good housekeeping measures you implement consistent with E.P.1.
- E.P.2.4 *Vehicle and Equipment Wash Water Requirements.* If wash water is handled in a manner that does not involve separate NPDES permitting (e.g., hauled offsite), describe the disposal method and include all pertinent information (e.g., frequency, volume, destination, etc.) in your SWPCP. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

E.P.3 Additional Inspection Requirements Inspect all the following areas/activities: storage areas for vehicles/equipment awaiting maintenance, fueling areas, indoor and outdoor vehicle/equipment maintenance areas, material storage areas, vehicle/equipment cleaning areas and loading/unloading areas.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector Q – Water Transportation

E.Q.1 Additional Technology-Based Effluent Limits

E.Q.1.1 *Good Housekeeping Measures.* You must implement the following good housekeeping measures in addition to requirements in Schedule A.1 of the permit:

- E.Q.1.1.1 *Pressure Washing Area.* If pressure washing is used to remove marine growth from vessels, the discharge water must be permitted by a separate NPDES permit. Collect or contain the discharges from the pressure washing area so that they are not commingled with stormwater discharges authorized by this permit.
 - E.Q.1.1.2 *Blasting and Painting Area.* Minimize the potential for spent abrasives, paint chips, and overspray to discharge into receiving waters or the storm sewer systems. Consider containing all blasting and painting activities or use other measures to minimize the discharge of contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.
 - E.Q.1.1.3 *Material Storage Areas.* Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or stormwater from the storage areas. Specify which materials are stored indoors, and consider containment or enclosure for those stored outdoors. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Consider implementing an inventory control plan to limit the presence of potentially hazardous materials onsite.
 - E.Q.1.1.4 *Engine Maintenance and Repair Areas.* Minimize the contamination of precipitation or stormwater from all areas used for engine maintenance and repair. Consider the following (or their equivalents): performing all maintenance activities indoors, maintaining an organized inventory of materials used in the shop, draining all parts of fluid prior to disposal, prohibiting the practice of hosing down the shop floor, using dry cleanup methods, and treating and/or recycling stormwater collected from the maintenance area.
 - E.Q.1.1.5 *Material Handling Area.* Minimize the contamination of precipitation or stormwater from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels). Consider the following (or their equivalents): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing stormwater to material handling areas.
 - E.Q.1.1.6 *Drydock Activities.* Routinely maintain and clean the drydock to minimize pollutants in stormwater. Address the cleaning of accessible areas of the drydock prior to flooding, and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, and fuel spills occurring on the drydock. Consider the following (or their equivalents): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding and making absorbent materials and oil containment booms readily available to clean up or contain any spills.
- E.Q.1.2 *Employee Training.* At a minimum, address the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel

wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

- E.Q.1.3 *Preventive Maintenance.* As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

E.Q.2 Additional SWPCP Requirements

- E.Q.2.1 *Drainage Area Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: fueling; engine maintenance and repair; vessel maintenance and repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).
- E.Q.2.2 *Summary of Potential Pollutant Sources.* Document in the SWPCP the following additional sources and activities that have potential pollutants associated with them: outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting.)

E.Q.3 Additional Inspection Requirements

Inspect pressure washing area; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

E.Q.4 Sector-Specific Benchmarks

Table E.Q-1 identifies benchmarks that apply to the specific subsectors of Sector Q. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.Q-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Water Transportation Facilities (SIC 4412-4499)	Total Aluminum	1.10 mg/L
	Total lead freshwater	Statewide benchmark
	Total lead saltwater	1.10 mg/L
	Total zinc freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector R – Ship and Boat Building and Repair Yards

E.R.1 Additional Technology-Based Effluent Limits

E.R.1.1 Good Housekeeping Measures.

- E.R.1.1.1 *Pressure Washing Area.* If pressure washing is used to remove marine growth from vessels, the discharged water must be permitted as a process wastewater by a separate NPDES permit.
 - E.R.1.1.2 *Blasting and Painting Area.* Minimize the potential for spent abrasives, paint chips, and overspray to discharging into the receiving water or the storm sewer systems. Consider containing all blasting and painting activities, or use other measures to prevent the discharge of the contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.
 - E.R.1.1.3 *Material Storage Areas.* Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or stormwater from the storage areas. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Consider implementing an inventory control plan to limit the presence of potentially hazardous materials onsite.
 - E.R.1.1.4 *Engine Maintenance and Repair Areas.* Minimize the contamination of precipitation or stormwater from all areas used for engine maintenance and repair. Consider the following (or their equivalents): performing all maintenance activities indoors, maintaining an organized inventory of materials used in the shop, draining all parts of fluid prior to disposal, prohibiting the practice of hosing down the shop floor, using dry cleanup methods, and treating and/or recycling stormwater collected from the maintenance area.
 - E.R.1.1.5 *Material Handling Area.* Minimize the contamination of precipitation or stormwater from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels). Consider the following (or their equivalents): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing stormwater run-on to material handling areas.
 - E.R.1.1.6 *Drydock Activities.* Routinely maintain and clean the drydock to minimize pollutants in stormwater. Clean accessible areas of the drydock prior to flooding and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, or fuel spills occurring on the drydock. Consider the following (or their equivalents): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding, and having absorbent materials and oil containment booms readily available to clean up and contain any spills.
- E.R.1.2 *Employee Training.* As part of your employee training program, address, at a minimum, the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

- E.R.1.3 *Preventive Maintenance.* As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

E.R.2 Additional SWPCP Requirements

- E.R.2.1 *Drainage Area Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: fueling; engine maintenance or repair; vessel maintenance or repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; treatment, storage, and waste disposal areas; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).
- E.R.2.2 *Potential Pollutant Sources.* Document in your SWPCP the following additional sources and activities that have potential pollutants associated with them (if applicable): outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).
- E.R.2.3 *Documentation of Good Housekeeping Measures.* Document in your SWPCP any good housekeeping measures implemented to meet the effluent limits in E.R.1.1.
- E.R.2.3.1 *Blasting and Painting Areas.* Document in the SWPCP any standard operating practices relating to blasting and painting (e.g., prohibiting uncontained blasting and painting over open water or prohibiting blasting and painting during windy conditions, which can render containment ineffective).
- E.R.2.3.2 *Storage Areas.* Specify in your SWPCP which materials are stored indoors, and consider containment or enclosure for those stored outdoors.

E.R.3 Additional Inspection Requirements

Include the following in all monthly inspections: pressure washing area; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

Schedule E – Sector-Specific Requirements for Industrial Activity

Sector S – Air Transportation

E.S.1 Limitation on Coverage

E.S.1.1 *Limitations on Coverage.* This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.

Note: the term “deicing” in this permit will generally be used to mean both deicing (removing frost, snow or ice) and anti-icing (preventing accumulation of frost, snow or ice) activities, unless specific mention is made otherwise.

E.S.2 Multiple Operators at Air Transportation Facilities

Air transportation facilities often have more than one operator who could discharge stormwater associated with industrial activity. Operators include the airport authority and airport tenants, including air passenger or cargo companies, fixed based operators, and other parties who routinely perform industrial activities on airport property.

The airport authority and tenants of the airport are encouraged to work in partnership in the development of the SWPCP. Tenants of the airport facility include air passenger or cargo companies, fixed based operators and other parties who have contracts with the airport authority to conduct business operations on airport property and whose operations result in stormwater discharges associated with industrial activity. An airport tenant may obtain authorization under this permit and develop a SWPCP for discharges from his/her own areas of the airport.

E.S.3 Additional Technology-Based Effluent Limits

E.S.3.1 *Good Housekeeping Measures.*

E.S.3.1.1 *Aircraft, Ground Vehicle and Equipment Maintenance Areas.* Minimize the contamination of stormwater from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangers). Consider the following practices (or their equivalents): performing maintenance activities indoors; maintaining an organized inventory of material used in the maintenance areas; draining all parts of fluids prior to disposal; prohibiting the practice of hosing down the apron or hanger floor; using dry cleanup methods; and collecting the stormwater from the maintenance area and providing treatment or recycling.

E.S.3.1.2 *Aircraft, Ground Vehicle and Equipment Cleaning Areas.* Clearly demarcate these areas on the ground using signage or other appropriate means. Minimize the contamination of stormwater from cleaning areas.

E.S.3.1.3 *Aircraft, Ground Vehicle and Equipment Storage Areas.* Store all aircraft, ground vehicles and equipment awaiting maintenance in designated areas only and minimize the contamination of stormwater from these storage areas. Consider the following control measures, including any BMPs (or their equivalents): storing aircraft and ground vehicles indoors; using drip pans for the collection of fluid leaks; and perimeter drains, dikes or berms surrounding the storage areas.

- E.S.3.1.4 *Material Storage Areas.* Maintain the vessels of stored materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) in good condition, to prevent or minimize contamination of stormwater. Also plainly label the vessels (e.g., “used oil,” “Contaminated Jet A,” etc.). Minimize contamination of stormwater from these areas. Consider the following control measures (or their equivalents): storing materials indoors; storing waste materials in a centralized location; and installing berms/dikes around storage areas.
- E.S.3.1.5 *Airport Fuel System and Fueling Areas.* Minimize the discharge of fuel to the storm sewer/surface waters resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. Consider the following control measures (or their equivalents): implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations); using only dry cleanup methods; and collecting stormwater.
- E.S.3.1.6 *Source Reduction.* Minimize, and where feasible eliminate, the use of urea and glycol-based deicing chemicals, in order to reduce the aggregate amount of deicing chemicals used and/or lessen the environmental impact. Chemical options to replace ethylene glycol, propylene glycol and urea include: potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.
- E.S.3.1.6.1 *Runway Deicing Operation:* To minimize the discharge of pollutants in stormwater from runway deicing operations, implement source reduction control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): metered application of chemicals; pre-wetting dry chemical constituents prior to application; installing a runway ice detection system; implementing anti-icing operations as a preventive measure against ice buildup; heating sand; and product substitution. Chemical options to replace pavement deicers (urea or glycol) include (list not exclusive): potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.
- E.S.3.1.6.2 *Aircraft Deicing Operations.* Minimize the discharge of pollutants in stormwater from aircraft deicing operations. Determine whether excessive application of deicing chemicals occurs and adjust as necessary, consistent with considerations of flight safety. Determine whether alternatives to glycol and whether containment measures for applied chemicals are feasible. Implement control measures for reducing deicing fluid such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): forced-air deicing systems, computer-controlled fixed-gantry systems, infrared technology, hot water, varying glycol content to air temperature, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, and thermal blankets for MD-80s and DC-9s. Consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems where feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations. The evaluations and determinations required by this Part should be carried out by the personnel most familiar with the

particular aircraft and flight operations and related systems in question (versus an outside entity such as the airport authority).

- E.S.3.1.7 *Management of Stormwater.* Minimize the discharge of pollutants in stormwater from deicing chemicals. To minimize discharges of pollutants in stormwater from aircraft deicing, implement runoff management control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): installing a centralized deicing pad to recover deicing fluid following application; plug-and-pump (PnP); using vacuum/collection trucks (glycol recovery vehicles); storing contaminated stormwater/deicing fluids in tanks; recycling collected deicing fluid where feasible; releasing controlled amounts to a publicly owned treatment works; separation of contaminated snow; conveying contaminated stormwater into an impoundment for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations); and directing stormwater into vegetative swales or other infiltration measures. To minimize discharges of pollutants in stormwater from runway deicing, implement runoff management control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): mechanical systems (snow plows, brushes); conveying contaminated stormwater into swales and/or a stormwater impoundment; and pollution prevention practices such as ice detection systems, and airfield prewetting.
- E.S.3.1.8 When applying deicing fluids during non-precipitation events (also referred to as “clear ice deicing”), implement control measures to prevent unauthorized discharge of pollutants (dry-weather discharges of pollutants would need coverage under an NPDES wastewater permit), or to minimize the discharge of pollutants from deicing fluids in later stormwater discharges, implement control measures such as the following, where determined to be feasible and that accommodate considerations safety, space, operational constraints, and flight considerations (list not exclusive): recovering deicing fluids; preventing the fluids from entering storm sewers or other stormwater discharge conveyances (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains); releasing controlled amounts to a publicly owned treatment works Used deicing fluid should be recycled whenever practicable.
- E.S.3.2 *Deicing Season.* You must determine the seasonal timeframe (e.g., December- February, October - March, etc.) during which deicing activities typically occur at the facility. Implementation of control measures, including any BMPs, facility inspections and monitoring must be conducted with particular emphasis throughout the defined deicing season. If you meet the deicing chemical usage thresholds of 100,000 gallons glycol and/or 100 tons of urea, the deicing season you identified is the timeframe during which you must obtain the four required benchmark monitoring event results for deicing-related parameters, i.e., BOD, COD, ammonia and pH.

E.S.4 Additional SWPCP Requirements

- E.S.4.1 *Drainage Area Site Map.* Document in the SWPCP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/stormwater: aircraft and runway deicing operations; fueling stations; aircraft, ground vehicle and equipment

maintenance/cleaning areas; storage areas for aircraft, ground vehicles and equipment awaiting maintenance.

- E.S.4.2 *Potential Pollutant Sources.* In your inventory of exposed materials, describe in your SWPCP the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: aircraft, runway, ground vehicle and equipment maintenance and cleaning; aircraft and runway deicing operations (including apron and centralized aircraft deicing stations, runways, taxiways and ramps). If you use deicing chemicals, you must maintain a record of the types (including the Safety Data Sheets [SDS]) used and the monthly quantities, either as measured or, in the absence of metering, as estimated to the best of your knowledge. This includes all deicing chemicals, not just glycols and urea (e.g., potassium acetate), because large quantities of these other chemicals can still have an adverse impact on receiving waters. Tenants or other fixed-based operations that conduct deicing operations must provide the above information to the airport authority for inclusion with any comprehensive airport SWPCPs.
- E.S.4.3 *Vehicle and Equipment Washwater Requirements.* Attach to or reference in your SWPCP, a copy of the NPDES permit issued for vehicle/equipment washwater, if applicable. If an industrial user permit is issued under a local pretreatment program, include a copy in your SWPCP. If washwater is handled in another manner (e.g., hauled offsite, retained onsite), describe the disposal method and attach all pertinent documentation/information (e.g., frequency, volume, destination, etc.) in your SWPCP.
- E.S.4.4 *Documentation of Control Measures Used for Management of Stormwater:* Document in your SWPCP the control measures used for collecting or containing contaminated melt water from collection areas used for disposal of contaminated snow.

E.S.5 Sector-Specific Benchmarks

At a minimum conduct facility inspections at least monthly during the deicing season (e.g., October through April for most mid-latitude airports). If your facility needs to deice before or after this period, expand the monthly inspections to include all months during which deicing chemicals may be used. DEQ may specifically require you to increase inspection frequencies.

E.S.6 Sector-Specific Benchmarks

Table E.S-1 identifies benchmarks that apply to the specific subsectors of Sector S. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, unless a facility has an Individual NPDES Permit for de-icing activities.

Table E.S-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
For airports where a single permittee, or a combination of permitted facilities, use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor these parameters at discharge points that collect stormwater from areas where deicing activities occur (SIC 4512-4581) and when deicing activities are occurring	Biochemical Oxygen Demand (BOD ₅)	30 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Ammonia	2.14 mg/L
	pH	Statewide benchmark

E.S.7 Effluent Limitations Based on Effluent Limitations Guidelines and New Source Performance Standards

- E.S.7.1 *Airfield Pavement Deicing*. For both existing and new “primary airports” (as defined at 40 CFR 449.2) with 1,000 or more annual non-propeller aircraft departures that discharge stormwater from airfield pavement deicing activities, there shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, such airports must do one of the following: (1) certify annually on the annual report that you do not use pavement deicers containing urea, or (2) meet the effluent limitation in Table E.S-2.
- E.S.7.2 *Aircraft Deicing*. Airports that are both “primary airports” (as defined at 40 CFR 449.2) and new sources (“new airports”) with 1,000 or more annual non-propeller aircraft departures must meet the applicable requirements for aircraft deicing at 40 CFR 449.11(a). Discharges of the collected aircraft deicing fluid directly to waters of the state are not eligible for coverage under this permit.
- E.S.7.3 *Monitoring, Reporting and Recordkeeping*. For new and existing airports subject to the effluent limitations in E.S.7.1 or E.S.7.2 of this permit, you must comply with the applicable monitoring, reporting and recordkeeping requirements outlined in 40 CFR 449.20.

Table E.S-2¹

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Effluent Limitation
Discharge containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Ammonia as Nitrogen	14.7 mg/L. daily maximum

¹Monitor semi-annually.

Schedule E – Sector-Specific Requirements for Industrial Activity

Sector T – Treatment Works

E.T.1 Additional Technology-Based Effluent Limits

- E.T.1.1 *Control Measures.* In addition to the other control measures, consider the following: routing stormwater to the treatment works; or covering exposed materials (i.e., from the following areas: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station).
- E.T.1.2 *Employee Training.* At a minimum, training must address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and controls; fueling procedures; general good housekeeping practices; and proper procedures for using fertilizer, herbicides, and pesticides.

E.T.2 Additional SWPCP Requirements

- E.T.2.1 *Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and storage areas for process chemicals, petroleum products, solvents, fertilizers, herbicides, and pesticides.
- E.T.2.2 *Potential Pollutant Sources.* Document in your SWPCP the following additional sources and activities that have potential pollutants associated with them, as applicable: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and access roads and rail lines.
- E.T.2.3 *Wastewater and Washwater Requirements.* If wastewater and/or vehicle and equipment washwater is not covered by another NPDES permit but is handled in another manner (e.g., hauled offsite, retained onsite), the disposal method must be described and all pertinent information (e.g., frequency, volume, destination) must be included in your SWPCP. Discharges of vehicle and equipment washwater, including tank cleaning operations, are not authorized by this permit for this sector.

E.T.3 Additional Inspection Requirements

Include the following areas in all inspections: access roads and rail lines; grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station.

E.T.4 Sector-Specific Benchmarks

Table E.T.1

Subsector (You may be subject to requirements for more than one Sector / Subsector)	Parameter	Benchmark Monitoring Concentration
Treatment Works	E. coli	406 organisms/100 mL

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector U – Food and Kindred Products

E.U.1 Additional Technology-Based Limitations

E.U.1.1 *Employee Training.* Address pest control in your employee training program.

E.U.2 Additional SWPCP Requirements

E.U.2.1 *Drainage Area Site Map.* Document in your SWPCP the locations of the following activities if they are exposed to stormwater: vents and stacks from cooking, drying, and similar operations; dry product vacuum transfer lines; animal holding pens; spoiled product; and broken product container storage areas.

E.U.2.2 *Potential Pollutant Sources.* Document in your SWPCP, in addition to food and kindred products processing-related industrial activities, application and storage of pest control chemicals (e.g., rodenticides, insecticides, fungicides) used on plant grounds.

E.U.3 Additional Inspection Requirements

Inspect on a monthly basis, at a minimum, the following areas where the potential for exposure to stormwater exists: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; vents and stacks emanating from industrial activities; spoiled product and broken product container holding areas; animal holding pens; staging areas; and air pollution control equipment.

E.U.4 Sector-Specific Benchmarks

Table E.U-1 identifies benchmarks that apply to the specific subsectors of Sector U. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.U-1

Subsector (You may be subject to requirements for more than one Sector / Subsector)	Parameter	Benchmark Monitoring Concentration
Grain Mill Products (SIC codes 2041-2048)	Total Suspended Solids (TSS)	Statewide benchmark
Fats and Oils Products (SIC 2074-2079)	Total Suspended Solids (TSS)	Statewide benchmark
	Biochemical Oxygen Demand (BOD ₅)	30 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Nitrate plus Nitrite Nitrogen	10 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector V – Textile Mills, Apparel, and Other Fabric Products

E.V.1 Additional Technology-Based Limitations

E.V.1.1 Good Housekeeping Measures.

E.V.1.1.1 *Material Storage Areas.* Plainly label and store all containerized materials (e.g., fuels, petroleum products, solvents, and dyes) in a protected area, away from drains. Minimize contamination of the stormwater from such storage areas. Also consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances. For storing empty chemical drums or containers, ensure that the drums and containers are clean (consider triple-rinsing) and that there is no contact of residuals with stormwater. Collect and dispose of washwater from these cleanings properly.

E.V.1.1.2 *Material Handling Areas.* Minimize contamination of stormwater from material handling operations and areas. Consider the following (or their equivalents): use of spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of material may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals, dyes, or wastewater.

E.V.1.1.3 *Fueling Areas.* Minimize contamination of stormwater from fueling areas. Consider the following (or their equivalents): covering the fueling area, using spill and overflow protection, minimizing run-on of stormwater to the fueling areas, using dry cleanup methods, and treating and/or recycling stormwater collected from the fueling area.

E.V.1.1.4 *Above-Ground Storage Tank Area.* Minimize contamination of the stormwater runoff from above-ground storage tank areas, including the associated piping and valves. Consider the following (or their equivalents): regular cleanup of these areas; including measures for tanks, piping and valves explicitly in your SPCC program; minimizing runoff of stormwater from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

E.V.1.2 *Employee Training.* As part of your employee training program, address, at a minimum, the following activities (as applicable): use of reused and recycled waters, solvents management, proper disposal of dyes, proper disposal of petroleum products and spent lubricants, spill prevention and control, fueling procedures, and general good housekeeping practices.

E.V.2 Additional SWPCP Requirements

E.V.2.1 *Potential Pollutant Sources.* Document in your SWPCP the following additional sources and activities that have potential pollutants associated with them: industry-specific significant materials and industrial activities (e.g., backwinding, beaming, bleaching, backing bonding, carbonizing, carding, cut and sew operations, desizing, drawing, dyeing locking, fulling, knitting, mercerizing, opening, packing, plying, scouring, slashing, spinning, synthetic-felt processing, textile waste processing, tufting, turning, weaving, web forming, winging, yarn spinning, and yarn texturing).

E.V.2.2 *Description of Good Housekeeping Measures for Material Storage Areas.* Document in the SWPCP your containment area or enclosure for materials stored outdoors.

E.V.3 Additional Inspection Requirements

Inspect, at least monthly, the following activities and areas (at a minimum): transfer and transmission lines, spill prevention, good housekeeping practices, management of process waste products, and all structural and nonstructural management practices.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector W – Furniture and Fixtures

E.W.1 Additional Technology-Based Limitations

E.W.1.1 *Drainage Area Site Map*. Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: material storage (including tanks or other vessels used for liquid or waste storage) areas; outdoor material processing areas; areas where wastes are treated, stored, or disposed of; access roads; and rail spurs.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector X – Printing and Publishing

E.X.1 Additional Technology-Based Effluent Limits

E.X.1.1 Good Housekeeping Measures.

- E.X.1.1.1 *Material Storage Areas.* Plainly label and store all containerized materials (e.g., skids, pallets, solvents, bulk inks, hazardous waste, empty drums, portable and mobile containers of plant debris, wood crates, steel racks, and fuel oil) in a protected area, away from drains. Minimize contamination of the stormwater from such storage areas. Also, consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances.
 - E.X.1.1.2 *Material Handling Area.* Minimize contamination of stormwater from material handling operations and areas (e.g., blanket wash, mixing solvents, loading and unloading materials). Consider the following (or their equivalents): using spill and overflow protection, covering fueling areas, and covering or enclosing areas where the transfer of materials may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals or wastewater.
 - E.X.1.1.3 *Fueling Areas.* Minimize contamination of stormwater runoff from fueling areas. Consider the following (or their equivalents): covering the fueling area, using spill and overflow protection, minimizing runoff of stormwater to the fueling areas, using dry cleanup methods, and treating and/or recycling stormwater collected from the fueling area.
 - E.X.1.1.4 *Above Ground Storage Tank Area.* Minimize contamination of the stormwater runoff from above-ground storage tank areas, including the associated piping and valves. Consider the following (or their equivalents): regularly cleaning these areas, explicitly addressing tanks, piping and valves in the SPCC program, minimizing stormwater runoff from adjacent areas, restricting access to the area, inserting filters in adjacent catch basins, providing absorbent booms in unbermed fueling areas, using dry cleanup methods, and permanently sealing drains within critical areas that may discharge to a storm drain.
- E.X.1.2 *Employee Training.* As part of your employee training program, address, at a minimum, the following activities (as applicable): spent solvent management, spill prevention and control, used oil management, fueling procedures, and general good housekeeping practices.

E.X.2 Additional SWPCP Requirements

- E.X.2.1 *Description of Good Housekeeping Measures for Material Storage Areas.* In connection with E.X.1.1.1, describe in the SWPCP the containment area or enclosure for materials stored outdoors.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries

E.Y.1 Additional Technology-Based Effluent Limits

- E.Y.1.1 *Controls for Rubber Manufacturers.* Minimize the discharge of zinc in your stormwater discharges. Following are some general control measure options to consider: using chemicals purchased in pre-weighed, sealed polyethylene bags; storing in-use materials in sealable containers, ensuring an airspace between the container and the cover to minimize “puffing” losses when the container is opened, and using automatic dispensing and weighing equipment.
- E.Y.1.1.1 *Zinc Bags.* Ensure proper handling and storage of zinc bags at your facility. Following are some control measure options: employee training on the handling and storage of zinc bags, indoor storage of zinc bags, cleanup of zinc spills without washing the zinc into the storm drain, and the use of 2,500-pound sacks of zinc rather than 50- to 100-pound sacks.
- E.Y.1.1.2 *Dumpsters.* Minimize discharges of zinc from dumpsters through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the dumpster; moving the dumpster indoors; and providing a lining for the dumpster.
- E.Y.1.1.3 *Dust Collectors and Baghouses.* Minimize contributions of zinc to stormwater from dust collectors and baghouses. Replace or repair, as appropriate, improperly operating dust collectors and baghouses.
- E.Y.1.1.4 *Grinding Operations.* Minimize contamination of stormwater as a result of dust generation from rubber grinding operations. Where determined to be feasible, install a dust collection system.
- E.Y.1.1.5 *Zinc Stearate Coating Operations.* Minimize the potential for stormwater contamination from drips and spills of zinc stearate slurry that may be released to the storm drain. Where determined to be feasible, use alternative compounds to zinc stearate.
- E.Y.1.2 *Controls for Plastic Products Manufacturers.* Minimize the discharge of plastic resin pellets in your stormwater discharges through implementation of control measures such as the following, where determined to be feasible (list not exclusive): minimizing spills; cleaning up of spills promptly and thoroughly; sweeping thoroughly; pellet capturing; employee education; and disposal precautions.

E.Y.2 Additional SWPCP Requirements

- E.Y.2.1 *Potential Pollutant Sources for Rubber Manufacturers.* Document in your SWPCP the use of zinc at your facility and the possible pathways through which zinc may be discharged in stormwater.

E.Y.3 Sector-Specific Benchmarks

Table E.Y-1 identifies benchmarks that apply to the specific subsectors of Sector Y. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.Y-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Rubber Products Manufacturing (SIC codes 3011, 3021, 3052, 3053, 3061, 3069)	Total zinc Freshwater	Statewide benchmark
	Total zinc Saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector Z – Leather Tanning and Finishing

E.Z.1 Additional Technology-Based Effluent Limits

E.Z.1.1 Good Housekeeping Measures.

- E.Z.1.1.1 *Storage Areas for Raw, Semiprocessed, or Finished Tannery By-products.* Minimize contamination of stormwater from pallets and bales of raw, semiprocessed, or finished tannery by-products (e.g., splits, trimmings, shavings). Store or protect indoors with polyethylene wrapping, tarpaulins, roofed storage, etc. where practicable. Place materials on an impermeable surface and enclose or put berms (or equivalent measures) around the area to prevent stormwater run-on and runoff where practicable.
- E.Z.1.1.2 *Material Storage Areas.* Label storage containers of all materials (e.g., specific chemicals, hazardous materials, spent solvents, waste materials) minimize contact of such materials with stormwater.
- E.Z.1.1.3 *Buffing and Shaving Areas.* Minimize contamination of stormwater discharge with leather dust from buffing and shaving areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): implementing dust collection enclosures; implementing preventive inspection and maintenance programs; or other appropriate preventive measures.
- E.Z.1.1.4 *Receiving, Unloading, and Storage Areas.* Minimize contamination of stormwater discharge from receiving, unloading, and storage areas. If these areas are exposed, implement control measures such as the following, where determined to be feasible (list not exclusive): covering all hides and chemical supplies; diverting drainage to the process sewer; or grade berming or curbing the area to prevent stormwater discharge.
- E.Z.1.1.5 *Outdoor Storage of Contaminated Equipment.* Minimize contact of stormwater with contaminated equipment through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering equipment, diverting drainage to the process sewer, and cleaning thoroughly prior to storage.
- E.Z.1.1.6 *Waste Management.* Minimize contamination of stormwater discharge from waste storage areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering dumpsters; moving waste management activities indoors; covering waste piles with temporary covering material such as tarpaulins or polyethylene; and minimizing stormwater discharge by enclosing the area or building berms around the area.

E.Z.2 Additional SWPCP Requirements

- E.Z.2.1 *Drainage Area Site Map.* Identify in your SWPCP where any of the following may be exposed to precipitation or stormwater: processing and storage areas of the beamhouse, tanyard, and retan wet finishing and dry finishing operations.
- E.Z.2.2 *Potential Pollutant Sources.* Document in your SWPCP the following sources and activities that have potential pollutants associated with them (as appropriate): temporary or permanent storage of fresh and brine-cured hides; extraneous hide substances and hair; leather dust, scraps, trimmings, and shavings.

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector AA – Fabricated Metal Products

E.AA.1 Additional Technology-Based Effluent Limits

E.AA.1.1 *Good Housekeeping Measures.*

E.AA.1.1.1 *Raw Steel Handling Storage.* Minimize the generation of and/or recover and properly manage scrap metals, fines, and iron dust. Include measures for containing materials within storage handling areas.

E.AA.1.1.2 *Paints and Painting Equipment.* Minimize exposure of paint and painting equipment to stormwater.

E.AA.1.2 *Spill Prevention and Response Procedures.* Ensure that the necessary equipment to implement a cleanup is available to personnel. The following areas should be addressed

E.AA.1.2.1 *Metal Fabricating Areas.* Maintain clean, dry, orderly conditions in these areas. Consider using dry clean-up techniques.

E.AA.1.2.2 *Storage Areas for Raw Metal.* Keep these areas free of conditions that could cause, or impede appropriate and timely response to, spills or leakage of materials through implementation of control measures such as the following, where determined to be feasible (list not exclusive): maintaining storage areas so that there is easy access in the event of a spill, and labeling stored materials to aid in identifying spill contents.

E.AA.2.2.3 *Metal Working Fluid Storage Areas.* Minimize the potential for stormwater contamination from storage areas for metal working fluids.

E.AA.1.2.4 *Cleaners and Rinse Water.* Control and clean up spills of solvents and other liquid cleaners, control sand buildup and disbursement from sand-blasting operations, and prevent exposure of recyclable wastes. Substitute environmentally benign cleaners when possible.

E.AA.1.2.5 *Lubricating Oil and Hydraulic Fluid Operations.* Minimize the potential for stormwater contamination from lubricating oil and hydraulic fluid operations. Use monitoring equipment or other devices to detect and control leaks and overflows where feasible. Install perimeter controls such as dikes, curbs, grass filter strips, or equivalent measures where feasible.

E.AA.1.2.6 *Chemical Storage Areas.* Minimize stormwater contamination and accidental spillage in chemical storage areas. Include a program to inspect containers and identify proper disposal methods.

E.AA.1.3 *Spills and Leaks.* In your spill prevention and response procedures, pay attention to the following materials (at a minimum): chromium, toluene, pickle liquor, sulfuric acid, zinc and other water priority chemicals, and hazardous chemicals and wastes.

E.AA.2 Additional SWPCP Requirements

E.AA.2.1 *Drainage Area Site Map.* Document in your SWPCP where any of the following may be exposed to precipitation or stormwater: raw metal storage areas; finished metal storage areas; scrap disposal collection sites; equipment storage areas; retention and detention basins; temporary and permanent diversion dikes or berms; right-of-way or perimeter diversion devices; sediment traps and barriers; processing areas, including outside painting areas; wood preparation; recycling; and raw material storage.

E.AA.2.2 *Potential Pollutant Sources*. Document in your SWPCP the following additional sources and activities that have potential pollutants associated with them: loading and unloading operations for paints, chemicals, and raw materials; outdoor storage activities for raw materials, paints, empty containers, corn cobs, chemicals, and scrap metals; outdoor manufacturing or processing activities such as grinding, cutting, degreasing, buffing, and brazing; onsite waste disposal practices for spent solvents, sludge, pickling baths, shavings, ingot pieces, and refuse and waste piles.

E.AA.3 Additional Inspection Requirements

E.AA.3.1 *Inspections*. At a minimum, include the following areas in all inspections: raw metal storage areas, finished product storage areas, material and chemical storage areas, recycling areas, loading and unloading areas, equipment storage areas, paint areas, and vehicle fueling and maintenance areas. Also, inspect areas associated with the storage of raw metals, spent solvents and chemicals storage areas, outdoor paint areas, and drainage from roof. Potential pollutants include chromium, zinc, lubricating oil, solvents, aluminum, oil and grease, methyl ethyl ketone, steel, and related materials.

E.AA.4 Sector-Specific Benchmarks

Table E.AA-1 identifies benchmarks that apply to the specific subsectors of Sector AA. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table E.AA-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Fabricated Metal Products, except Coating (SIC 3411-3499; 3911-3915)	Total Aluminum	1.10 mg/L
	Nitrate plus Nitrite Nitrogen	10 mg/L
	Total zinc Freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L
Fabricated Metal coating and Engraving (SIC 3479)	Nitrate plus Nitrite Nitrogen	10 mg/L
	Total zinc Freshwater	Statewide benchmark
	Total zinc saltwater	0.46 mg/L

Schedule E – Sector-Specific Requirements for Industrial Activity
Sector AB – Transportation Equipment, Industrial or Commercial Machinery

E.AB.1 Additional SWPCP Requirements

E.AB.1.1 *Drainage Area Site Map*. Identify in your SWPCP where any of the following may be exposed to precipitation or stormwater: vents and stacks from metal processing and similar operations.

SCHEDULE F NPDES GENERAL CONDITIONS

SECTION A. STANDARD CONDITIONS

A1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.

A2. Penalties for Water Pollution and Permit Condition Violations

The permit is enforceable by DEQ or EPA, and in some circumstances also by third-parties under the citizen suit provisions of 33 USC § 1365. DEQ enforcement is generally based on provisions of state statutes and Environmental Quality Commission (EQC) rules, and EPA enforcement is generally based on provisions of federal statutes and EPA regulations.

ORS 468.140 allows DEQ to impose civil penalties up to \$25,000 per day for violation of a term, condition, or requirement of a permit.

Under ORS 468.943, unlawful water pollution in the second degree, is a Class A misdemeanor and is punishable by a fine of up to \$25,000, imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, unlawful water pollution in the first degree is a Class B felony and is punishable by a fine of up to \$250,000, imprisonment for not more than 10 years, or both.

The Clean Water Act provides that any person who violates permit condition, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation.

The Clean Water Act provides that any person who *negligently* violates any condition, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both.

In the case of a second or subsequent conviction for a *negligent* violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both.

In the case of a second or subsequent conviction for a *knowing* violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

Any person who *knowingly* violates section any permit condition, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both.

In the case of a second or subsequent conviction for a *knowing* endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both.

An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

Any person may be assessed an administrative penalty by the Administrator for violating any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act.

Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000.

Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

A3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit. In addition, upon request of DEQ, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

DEQ may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

A5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute.
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts.
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

- d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a total maximum daily load (TMDL).
- e. New information or regulations.
- f. Modification of compliance schedules.
- g. Requirements of permit reopener conditions
- h. Correction of technical mistakes made in determining permit conditions.
- i. Determination that the permitted activity endangers human health or the environment.
- j. Other causes as specified in 40 CFR §§ 122.62, 122.64, and 124.5.
- k. For communities with combined sewer overflows (CSOs):
 - (1) To comply with any state or federal law regulation for CSOs that is adopted or promulgated subsequent to the effective date of this permit.
 - (2) If new information that was not available at the time of permit issuance indicates that CSO controls imposed under this permit have failed to ensure attainment of water quality standards, including protection of designated uses.
 - (3) Resulting from implementation of the permittee's long-term control plan and/or permit conditions related to CSOs.

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

A6. Toxic Pollutants

The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rule (OAR) 340-041-0033 and section 307(a) of the federal Clean Water Act for toxic pollutants, and with standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

A7. Property Rights and Other Legal Requirements

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

A8. Permit References

Except for effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act and OAR 340-041-0033 for toxic pollutants, and standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

A9. Permit Fees

The permittee must pay the fees required by OAR.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

B1. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve

compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B2. Need to Halt or Reduce Activity Not a Defense

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs b and c of this section.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources that 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.

b. Prohibition of bypass.

- (1) Bypass is prohibited and DEQ may take enforcement action against a permittee for bypass unless:
 - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the 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 backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
 - iii. The permittee submitted notices and requests as required under General Condition B3.c.
- (2) DEQ may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, if DEQ determines that it will meet the three conditions listed above in General Condition B3.b.(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to DEQ at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D5.

B4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation 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 such technology-based permit effluent limitations if the requirements of General Condition B4.c 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 must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in General Condition D5, hereof (24-hour notice); and
 - (4) The permittee complied with any remedial measures required under General Condition A3 hereof.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

B5. Treatment of Single Operational Upset

For purposes of this permit, a single operational upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one federal Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include federal Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

B6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

- a. Definition. "Overflow" means any spill, release or diversion of sewage including:
 - (1) An overflow that results in a discharge to waters of the state; and
 - (2) An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the state.
- b. Reporting required. All overflows must be reported orally to DEQ within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D5.

B7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (for example, public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B8.

Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

B8. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from overflows, bypasses, or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

- a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
- b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
- c. Ensure immediate notification to the public, health agencies, and other affected public entities (including public water systems). The overflow response plan must identify the public health and other officials who will receive immediate notification;
- d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
- e. Provide emergency operations; and
- f. Ensure that DEQ is notified of the public notification steps taken.

B9. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

C1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval of DEQ. Samples must be collected in accordance with requirements in 40 CFR part 122.21 and 40 CFR part 403 Appendix E.

C2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

C3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 unless other test procedures have been specified in this permit.

For monitoring of recycled water with no discharge to waters of the state, monitoring must be conducted according to test procedures approved under 40 CFR part 136 or as specified in the most

recent edition of Standard Methods for the Examination of Water and Wastewater unless other test procedures have been specified in this permit or approved in writing by DEQ.

C4. Penalties for Tampering

The federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.

C5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by DEQ. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

C6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503, or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (for example, total residual chlorine), only the average daily value must be recorded unless otherwise specified in this permit.

C7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which must be averaged as specified in this permit.

C8. Retention of Records

Records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities must be retained for a period of at least 5 years (or longer as required by 40 CFR part 503). Records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit must be retained for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of DEQ at any time.

C9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

C10. Inspection and Entry

The permittee must allow DEQ or EPA upon the presentation of credentials to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

C11. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

D1. Planned Changes

The permittee must comply with OAR 340-052, "Review of Plans and Specifications" and 40 CFR § 122.41(l)(1). Except where exempted under OAR 340-052, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by DEQ. The permittee must give notice to DEQ as soon as possible of any planned physical alternations or additions to the permitted facility.

D2. Anticipated Noncompliance

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

D3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and EQC rules. No permit may be transferred to a third party without prior written approval from DEQ. DEQ may require modification, revocation, and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under 40 CFR § 122.61. The permittee must notify DEQ when a transfer of property interest takes place.

D4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

D5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) to the DEQ regional office or Oregon Emergency Response System (1-800-452-0311) as specified below within 24 hours from the time the permittee becomes aware of the circumstances.

a. Overflows.

(1) Oral Reporting within 24 hours.

- i. For overflows other than basement backups, the following information must be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311. For basement backups, this information should be reported directly to the DEQ regional office.

- (a) The location of the overflow;
- (b) The receiving water (if there is one);
- (c) An estimate of the volume of the overflow;
- (d) A description of the sewer system component from which the release occurred (for example, manhole, constructed overflow pipe, crack in pipe); and
- (e) The estimated date and time when the overflow began and stopped or will be stopped.

- ii. The following information must be reported to the DEQ regional office within 24 hours, or during normal business hours, whichever is earlier:

- (a) The OERS incident number (if applicable); and
- (b) A brief description of the event.

(2) Written reporting postmarked within 5 days.

- i. The following information must be provided in writing to the DEQ regional office within 5 days of the time the permittee becomes aware of the overflow:

- (a) The OERS incident number (if applicable);
- (b) The cause or suspected cause of the overflow;
- (c) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
- (d) Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps; and
- (e) For storm-related overflows, the rainfall intensity (inches/hour) and duration of the storm associated with the overflow.

DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

b. Other instances of noncompliance.

(1) The following instances of noncompliance must be reported:

- i. Any unanticipated bypass that exceeds any effluent limitation in this permit;
- ii. Any upset that exceeds any effluent limitation in this permit;
- iii. Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
- iv. Any noncompliance that may endanger human health or the environment.

(2) During normal business hours, the DEQ regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

- (3) A written submission must be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:
 - i. A description of the noncompliance and its cause;
 - ii. The period of noncompliance, including exact dates and times;
 - iii. The estimated time noncompliance is expected to continue if it has not been corrected;
 - iv. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
 - v. Public notification steps taken, pursuant to General Condition B7.
- (4) DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

D6. Other Noncompliance

The permittee must report all instances of noncompliance not reported under General Condition D4 or D5 at the time monitoring reports are submitted. The reports must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D7. Duty to Provide Information

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

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to DEQ, it must promptly submit such facts or information.

D8. Signatory Requirements

All applications, reports or information submitted to DEQ must be signed and certified in accordance with 40 CFR § 122.22.

D9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed \$125,000 per violation and up to 5 years in prison per ORS chapter 161. Additionally, according to 40 CFR § 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance will, upon conviction, be punished by a federal civil penalty not to exceed \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

D10. Changes to Indirect Dischargers

The permittee must provide adequate notice to DEQ of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the federal Clean Water Act if it were directly discharging those pollutants and;
- b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice must include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

SECTION E. DEFINITIONS

- E1. *BOD* or *BOD₅* means five-day biochemical oxygen demand.
- E2. *CBOD* or *CBOD₅* means five-day carbonaceous biochemical oxygen demand.
- E3. *TSS* means total suspended solids.
- E4. *Bacteria* means but is not limited to fecal coliform bacteria, total coliform bacteria, *Escherichia coli* (*E. coli*) bacteria, and *Enterococcus* bacteria.
- E5. *FC* means fecal coliform bacteria.
- E6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
- E7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR § 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
- E8. *mg/l* means milligrams per liter.
- E9. *µg/l* means microgram per liter.
- E10. *kg* means kilograms.
- E11. *m³/d* means cubic meters per day.
- E12. *MGD* means million gallons per day.
- E13. *Average monthly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
- E14. *Average weekly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
- E15. *Daily discharge* as defined at 40 CFR § 122.2 means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
- E16. *24-hour composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
- E17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
- E18. *Quarter* means January through March, April through June, July through September, or October through December.
- E19. *Month* means calendar month.

E20. *Week* means a calendar week of Sunday through Saturday.
E21. *POTW* means a publicly-owned treatment works.

APPENDIX A: BASIN-SPECIFIC pH CONCENTRATIONS

pH Basin-Specific Criteria (OAR 340-041-0101 through 340-041-0350) Impairment Monitoring Concentrations and Water Quality-based Effluent Limit

Basin or Water Body	OAR	Water	Criteria Range
General	340-041-0021(1)(a)	Marine	7.0 to 8.5
General	340-041-0021(1)(b)	Estuarine and fresh waters	See basin-specific criteria
Columbia River	340-041-0104(1)	Main stem Columbia River (mouth to river mile 309):	7.0 to 8.5
SNAKE RIVER	340-041-0124(1)	Main stem Snake River (river miles 260 to 335)	7.0 to 9.0
Deschutes Basin	340-041-0135(1)(a)	All other basin streams (except Cascade lakes)	6.5 to 8.5
	340-041-0135(1)(b)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5
Goose and Summer Lakes Basin	340-041-0145(1)(a)	Goose Lake	7.5 to 9.5
	340-041-0145(1)(b)	All other basin waters	7.0 to 9.0
Grande Ronde Basin	340-041-0156(1)	All basin streams (other than main stem Snake River)	6.5 to 9.0
Hood Basin	340-041-0165(1)(a)	Hood River Basin streams (except main stem Columbia River and Cascade lakes)	6.5 to 8.5
	340-041-0165(1)(b)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5
John Day Basin	340-041-0175(1)	All basin streams (other than the main stem Columbia River)	6.5 to 9.0
Klamath Basin	340-041-0185(1)(a)	Fresh waters except Cascade lakes	6.5 to 9.0
	340-041-0185(1)(b)	Cascade lakes above 5,000 feet altitude	6.0 to 8.5
Malheur Lake Basin	340-041-0195(1)	All	7.0 to 9.0
Malheur River Basin	340-041-0207(1)	All	7.0 to 9.0
Mid Coast Basin	340-041-0225(1)(a)	Marine waters	7.0 to 8.5

Basin or Water Body	OAR	Water	Criteria Range
	340-041-0225(1)(b)	Estuarine and fresh waters	6.5 to 8.5
North Coast Basin	340-041-0235(1)(a)	Marine waters	7.0 to 8.5
	340-041-0235(1)(b)	Estuarine and fresh waters	6.5 to 8.5
Owyhee Basin	340-041-0256(1)	All	7.0 to 9.0
Powder/Burnt Basins	340-041-0265(1)	All basin streams (other than main stem Snake River)	6.5 to 9.0
Rogue Basin	340-041-0275(1)(a)	Marine waters	7.0 to 8.5
	340-041-0275(1)(b)	Estuarine and fresh waters (except Cascade lakes)	6.5 to 8.5
	340-041-0275(1)(c)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5
Sandy Basin	340-041-0290(1)(a)	All basin waters (except main stem Columbia River and Cascade lakes)	6.5 to 8.5
	340-041-0290(1)(b)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5
South Coast Basin	340-041-0305(1)(a)	Estuarine and fresh waters	6.5 to 8.5
	340-041-0305(1)(b)	Marine waters	7.0 to 8.5
Umatilla Basin	340-041-0315(1)	All basin streams (other than main stem Columbia River)	6.5 to 9.0
Umpqua Basin	340-041-0326(1)(a)	Marine waters	7.0 to 8.5
	340-041-0326(1)(b)	Estuarine and fresh waters (except Cascade lakes)	6.5 to 8.5
	340-041-0326(1)(c)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5
Walla Walla Basin	340-041-0336	All	6.5 to 9.0
Willamette Basin	340-041-0345(1)(a)	All basin waters (except main stem Columbia River and Cascade lakes)	6.5 to 8.5
	340-041-0345(1)(b)	Cascade lakes above 3,000 feet altitude	6.0 to 8.5

APPENDIX B

**ODEQ Stormwater Pollution Control Plan
Check List**



DEQ 2021 Industrial Stormwater Permit Stormwater Pollution Control Plan Check List

Instructions: Complete this form and submit with SWPCP. Fill in the appropriate page number(s) indicating the location of information in the SWPCP. At a minimum, the SWPCP must include the components below and describe how the permit registrants intends to comply with the narrative technology-based effluent limit to eliminate or reduce the potential to contaminate stormwater and prevent any exceedance of instream water quality standards.

Site Name:		File No.:	
-------------------	--	------------------	--

Permit Schedule		Requirement	Page #	Comments (For official use only)
New Discharger	Condition I.1.a or b	A new discharger to an impaired water without a TMDL must meet one of the conditions in this section of the permit to obtain coverage		
Signature	A.8.b	Signed and certified in accordance with 40 CFR 122.22		
Title Page	A.10.a	Plan date		
		Name of the site		
		Name of the site operator or owner		
		The name of the person(s) preparing the SWPCP		
		File No. and EPA permit No.		
		Primary SIC code and any co-located SIC codes		
		Contact person(s) name, telephone number and email		
		Physical address, including county		
		Mailing address if different		
General Location Map	A.10.b.i.1	General location of the site in relation to surrounding properties, transportation routes, surface waters and other relevant features		
Site Map (please identify clearly)	A.10.b.i (2-19)	Drainage patterns, with flow arrows		
		Conveyance and discharge structures, such as piping or ditches		
		Exact location of all monitoring points labelled with a unique three-digit identifying number starting with 001, 002, etc.		
		Outline of the drainage area for each discharge point		
		Paved areas and buildings within each drainage area		
		Locations of discharge points if different from monitoring points		
		Areas used for outdoor manufacturing, treatment, storage, or disposal of significant materials		
		Areas of known or discovered significant materials from previous operations		
		Existing structural control measures for minimizing pollutants in stormwater runoff		
		Structural features that reduce flow or minimize impervious areas		
		Material handling and access areas		
		Hazardous waste treatment, storage and disposal facilities		
		Location of wells including waste injection wells, seepage pits, drywells		
		Location of springs, wetlands and other surface waterbodies both on-site and adjacent to the site		
		Location of groundwater wells		
		Location and description of authorized non-stormwater discharges		

Permit Schedule		Requirement	Page #	Comments (For official use only)
		Location and description of spill prevention and cleanup materials		
		Locations of the following materials and activities if they are exposed to stormwater and applicable:		
		Fueling stations		
		Vehicle and equipment maintenance cleaning areas		
		Loading/unloading areas		
		Locations used for the treatment, storage, or disposal of wastes		
		Liquid storage tanks		
		Processing and storage areas		
		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;		
		Transfer areas for substances in bulk		
		Machinery		
		Locations and sources of run-on to your site from adjacent property		
Site Description	A.10.b.ii	A description of industrial activities conducted at the site and significant materials stored, used, treated or disposed of in a manner which exposes those activities or materials to stormwater. Include in the description the methods of storage, usage, treatment or disposal		
	A.10.b.iii	Location and description, with any available characterization data, of areas of known or discovered significant materials from previous operations		
	A.10.b.iv	Regular business hours of operation		
	A.10.b.v	For each area of the site where a reasonable potential exists for contributing pollutants to stormwater runoff, a description of the potential pollutant sources that could be present in stormwater discharges and if the source is associated with a co-located SIC code		
	A.10.b.viii	An estimate of the amount of impervious surface area (including paved areas and building roofs) and the total area drained by each stormwater discharge point to be reported in area units		
	A.1.k	Non-stormwater discharges		
Site Controls	A.10.b.vi	A description of control measures installed and implemented to meet the technology and water quality-based requirements and any applicable sector-specific requirements in Schedule E		
		A description of how the stormwater control measures address potential pollutant sources from industrial activities and significant materials on-site, spills and leaks and authorized non-stormwater discharges		
	A.1.a	Minimize Exposure		
	A.1.b	Oil and Grease		
	A.1.c	Waste chemicals and material disposal		
	A.1.d	Erosion and sediment control		
	A.1.e	Debris control		
	A.1.f	Dust generation and vehicle tracking		
	A.1.g	Housekeeping		
Procedures/ Schedules	A.10.b.vi	Include known maintenance schedules and frequency of housekeeping measures		

Permit Schedule		Requirement	Page #	Comments (For official use only)
	A.1.h and A.10.c	Spill prevention and response procedures:		
	A.10.c.i	Procedures for preventing and responding to spills and cleanup		
		Indicate who is responsible for on-site management of significant materials and include their contact information		
		Spills prevention plans required by other regulations may be substituted for this provision if the spill prevention plan addresses stormwater management concerns and the plan is included with the SWPCP		
	A.1.h.v	Develop procedures for expeditiously stopping, containing and cleaning up leaks, spills and other releases		
	A.1.h.vi	Documentation and notification, including OERS number		
	A.1.i and A.10.d	Preventative maintenance:		
		Procedures for conducting inspections, maintenance and repairs to prevent leaks, spills, and other releases from drums, tanks and containers exposed to stormwater		
		Schedules or frequency of maintaining all control measures		
		Schedules of waste collection		
	A.10.e	Operations and Maintenance:		
		Include an operation and maintenance plan for active treatment and passive treatment systems		
		Include system schematic, manufacturer's maintenance and operations specifications		
		Include routine maintenance standards and schedules		
	A.10.f and A.1.j	Employee Education:		
		Develop and maintain an employee orientation and education program to inform personnel of the pertinent components and goals of this permit and the SWPCP		
		Orientation no later than 30 calendar days of hire or change in duties, annually thereafter		
		Include a description of the training content and the required frequency		
Tier II Status	A.10.b.vii	Facility triggered Tier II under current permit term ☐ Yes A description of stormwater treatment controls or source controls, including low impact development, in response to corrective action requirements and operation and maintenance procedures		
		Include safety sheets for any stormwater treatment chemicals or substances used in stormwater treatment and stored on site		
Receiving Waters	A.10.ix	The name(s) of the receiving water(s), latitude and longitude of discharge points, and applicable SIC code, if facility has co-located operations		
		If discharge point is to a municipal storm sewer system, name(s) and latitude and longitude of the receiving water and municipality		
Monitoring Locations	A.10.x	The identification of each discharge point and the location(s) where stormwater monitoring will occur as required by Schedule B.6		

Permit Schedule		Requirement	Page #	Comments (For official use only)
		Existing discharge points excluded from monitoring must include a description of the discharge point(s) and data or analysis supporting that the discharge point(s) are substantially similar as described in Schedule B.7.c.ii		

For Official Use Only			
New applicant:	☐ Yes ☐ No		
New discharger:	☐ Yes ☐ No	New discharger to impaired waters condition met:	☐ Yes ☐ No
		Outstanding Resource Water discharger:	☐ Yes ☐ No
Existing facilities:	☐ Yes ☐ No	SWPCP update per renewal:	☐ Yes ☐ No
		SWPCP update per Schedule A.9:	☐ Yes ☐ No
		Facility triggered Tier II under previous permit term:	☐ Yes ☐ No
		Facility triggered Tier II under current permit term:	☐ Yes ☐ No
Schedule E Requirements:	☐ Yes ☐ No	Schedule E additional information in SWPCP and site plan	☐ Yes ☐ No
Date received:		Plan Accepted:	☐ Yes ☐ No

Reviewed by:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

APPENDIX C

Inspection, Cleaning, Maintenance, and Repair of Stormwater Components Records

STORMWATER SITE INSPECTION REPORT

General Information			
Project Name	Grassy Mountain Mine		
NPDES Tracking No.		Location	Malheur County, Oregon
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Contact Information			
Describe present phase of operations			
Type of Inspection: ☐ Regular ☐ Pre-storm event ☐ During storm event ☐ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ☐ Yes ☐ No If yes, provide: Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ☐ Clear ☐ Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snowing ☐ High Winds ☐ Other: Temperature:			
Have any discharges occurred since the last inspection? ☐ Yes ☐ No If yes, describe:			
Are there any discharges at the time of inspection? ☐ Yes ☐ No If yes, describe:			

Site-specific BMPs

- Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site. Update Site Map as new BMPs are added.
- Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Maint. Shop Spill Kit	☐ Yes ☐ No	☐ Yes ☐ No	
2	Process Facility Spill Kit	☐ Yes ☐ No	☐ Yes ☐ No	
3	Fuel Island Spill Kit	☐ Yes ☐ No	☐ Yes ☐ No	
4	Service Truck Spill Kit	☐ Yes ☐ No	☐ Yes ☐ No	
5	Culvert-001	☐ Yes ☐ No	☐ Yes ☐ No	
6	Culvert-002	☐ Yes ☐ No	☐ Yes ☐ No	
7	Culvert-003	☐ Yes ☐ No	☐ Yes ☐ No	
8	Culvert-004	☐ Yes ☐ No	☐ Yes ☐ No	
9	Culvert-005	☐ Yes ☐ No	☐ Yes ☐ No	
10	Containment Pond	☐ Yes ☐ No	☐ Yes ☐ No	
11	Non-Contact Conveyance Channels	☐ Yes ☐ No	☐ Yes ☐ No	
12	Quarry Stormwater Sump	☐ Yes ☐ No	☐ Yes ☐ No	
13	Sediment Basin 001	☐ Yes ☐ No	☐ Yes ☐ No	
14	Sediment Basin 002	☐ Yes ☐ No	☐ Yes ☐ No	

STORMWATER SITE INSPECTION REPORT

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
15	Sediment Basin 003	☐ Yes ☐ No	☐ Yes ☐ No	
16	Sediment Basin 004	☐ Yes ☐ No	☐ Yes ☐ No	
17		☐ Yes ☐ No	☐ Yes ☐ No	
18		☐ Yes ☐ No	☐ Yes ☐ No	
19		☐ Yes ☐ No	☐ Yes ☐ No	
20		☐ Yes ☐ No	☐ Yes ☐ No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	☐ Yes ☐ No	☐ Yes ☐ No	
2	Are natural resource areas (e.g., streams, drainages, etc.) protected with barriers or similar BMPs?	☐ Yes ☐ No	☐ Yes ☐ No	
3	Are perimeter controls and sediment barriers adequately installed and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
4	Are discharge points and receiving waters free of any sediment deposits?	☐ Yes ☐ No	☐ Yes ☐ No	
5	Are storm drain inlets properly protected?	☐ Yes ☐ No	☐ Yes ☐ No	
6	Is the construction exit preventing sediment from being tracked into the street?	☐ Yes ☐ No	☐ Yes ☐ No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	☐ Yes ☐ No	☐ Yes ☐ No	
8	Are washout facilities available, clearly marked, and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	☐ Yes ☐ No	☐ Yes ☐ No	

STORMWATER SITE INSPECTION REPORT

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
10	Are materials that are potential stormwater contaminants stored inside or under cover?	☐ Yes ☐ No	☐ Yes ☐ No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	☐ Yes ☐ No	☐ Yes ☐ No	
12	(Other)	☐ Yes ☐ No	☐ Yes ☐ No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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."

Print name and title: _____

Signature: _____ Date: _____

APPENDIX D

Construction Stormwater Best Management Practices Manual

Construction Stormwater Best Management Practices Manual

1200-C NPDES General Permit

March, 2013



State of Oregon
Department of
Environmental
Quality

**Water Quality Division
Surface Water Section**

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DEQ is a leader in
restoring, maintaining and
enhancing the quality of
Oregon's air, land and
water.

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Alternative formats (Braille, large type) of this document can be made available.
Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696.

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Chapter 1 Introduction

Regulatory Overview

The NPDES program was established by federal legislation as part of the Clean Water Act to improve the quality of stormwater from industries, or industrial type activities. Discharges to waters of the State may not contain pollutants or characteristics in levels that would cause the receiving water body to fail to meet water quality standards. The Oregon water quality standard for turbidity (Oregon Administrative Rule 340-041-0036) includes the requirement that “No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.”

All point source discharges of pollutants from non-point sources, including those from construction sites, to federal waters (such as lakes, rivers and wetlands) must be authorized by a permit. In Oregon, a permit is required for construction activities with one acre or more of disturbed soil or that are part of a larger common plan of development or sale and discharge to surface waters. Operators must obtain a National Pollutant Discharge Elimination System (NPDES) General Stormwater Discharge Permit 1200-C for construction unless they can be covered under a local code or permit from a limited number of local government agencies and are under five disturbed acres.

Best Management Practices (BMPs) are a key component of the Erosion Sediment Control Plans (ESCPs) required by the 1200-C permit. BMPs are measures or controls that reduce pollutants at the source to prevent the pollution of stormwater runoff discharged from the site. These practices can also be used to divert runoff away from areas of exposure to pollutants, or to treat stormwater runoff before discharge to receiving waters. BMPs are designed to address the quality of a site’s practices with respect to stormwater leaving the site, and to meet environmental water quality standards or benchmarks. BMPs are most effective when organized into a comprehensive Erosion and Sediment Control Plan.

Rather than delineate particular practices that all sites should adhere to, the NPDES sets standards for minimum allowed pollution benchmarks that allow the permittee to select technologies to meet those standards. The stormwater discharge permit does not generally require specific BMPs because the practices should be selected on a case-by-case basis depending on the particular conditions at the site, such as the quantity of rainfall reaching the site, the area of land available for constructing management practices, costs in implementing the practices, site slope and soil type.

The best way to use this guide is to assess your site and your stormwater discharge(s). Determine the best BMPs for the site conditions that will have the most impact on the discharge(s). Select BMPs that will be most effective in controlling pollution in the stormwater discharges for the resources and costs that will be required to implement those BMPs (Refer to DEQ’s *Construction Stormwater Erosion and Sediment Control Manual* for detailed information on selecting BMPs). Implement the BMPs selected and check the stormwater discharges to verify the anticipated results of the BMP implementation and determine if more BMPs will be required in order to meet the benchmarks or water quality standards for the various pollutants of concern.

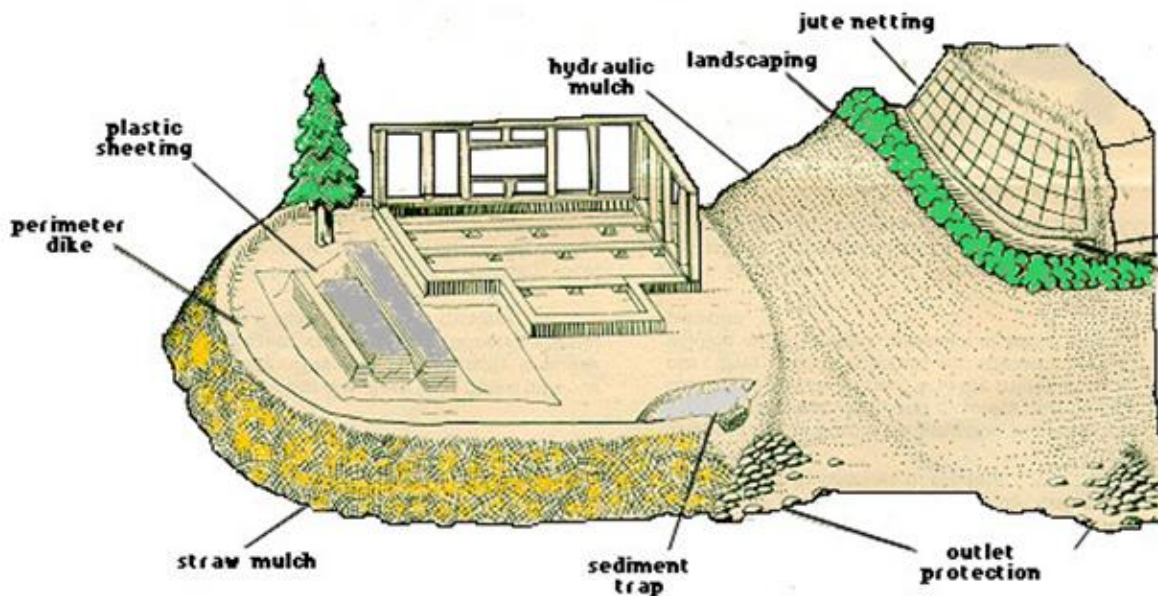
The BMPs included in this document are a work-in-progress and are by no means to be considered a complete list of appropriate erosion control measures. New technologies are continually being developed and refined. Additional BMPs will be added periodically to this

1200-C Construction Best Management Practices

document as they are found to be reliable and effective. Some BMPs may be removed from the document if field use shows that they are not reliable, effective, or cost effective.

Construction Stormwater BMPs

The BMPs included in this guidance document are related to source reduction and treatment methods for specific processes and activities at construction sites. In addition, the preventive measures mentioned may assist the facility in achieving stormwater discharge benchmarks and limitations or water quality standards through pollution prevention. All of the BMPs recommended in this guidance are intended to complement, not conflict with, existing state and federal regulations regarding the handling, containment, or treatment of any material or waste.



Flagging

Flagged poles or stakes can be used to mark storm drains, catch basins, curb inlets, and so on. This helps protect sediment controls from being hit by cars and street cleaners, buried under mounds of soil, or lost in fields of high grasses.



1200-C Construction Best Management Practices

BMP Removal

Temporary sediment and erosion control BMPs must be removed. At the conclusion of the construction project, after vegetation is reestablished, temporary erosion and sediment controls such as sediment fences, catch basin insert bags, and biobags should be removed from the construction site. Prior to their removal, the up-gradient sediment trapped by the erosion control should be removed by a vacuum truck, shovel, sweeping, or other method. Failure to remove the retained sediment will result in sediment being released to the receiving stream and negate the reason for installing the controls.

Chapter 2: Best Management Practices

2.1 Preserve Existing Vegetation

Description:



Preserving the existing vegetation on a construction site is frequently the best preventative measure for erosion - and the least expensive. Vegetation limits the capacity of flowing water to detach soil particles and transport sediment by decreasing the velocity of raindrops as they hit the ground and by decreasing runoff volume. Native or existing vegetation is adapted to local climate and soil conditions and typically has fewer pests, minimizing the amount of maintenance, and therefore is usually a better cover species than introduced species.

Basic Design and Construction:

- Do not remove existing vegetation unless absolutely necessary.
- Preserve existing vegetation on all steep, unstable slopes whenever possible.
- Preserve mature trees when at all possible. With their extensive root systems and large canopies, mature trees serve important erosion control functions.
- Avoid compaction and grading of soils close to trees. Compaction (for example, from parking or driving too close to the tree) restricts the movement of gases and water. Grading of soils close to trees often will damage roots and cause existing trees to decline and die.
- Do not pile soil on top of roots, because this cuts off the air supply and suffocates the tree.
- Establish "do not disturb" zones on your site by marking off areas with stakes and tape or fencing. Extend do not disturb zones at least to the dripline of preserved trees.
- When lowering the grade of the site, terrace around the tree and support the soil with a retaining wall so that tree roots are not exposed.
- Where trenches may cut through the root system, minimize damage by tunneling under the roots rather than trenching through them.

Maintenance:

- Minimize the impact of construction activities on existing vegetation.
- Irrigate in dry months.
- Monitor for the presence of pests or disease that will weaken the plant population.
- Inspect and repair boundary tape or fencing.

2.2 Vegetated Filter Strip

Description:

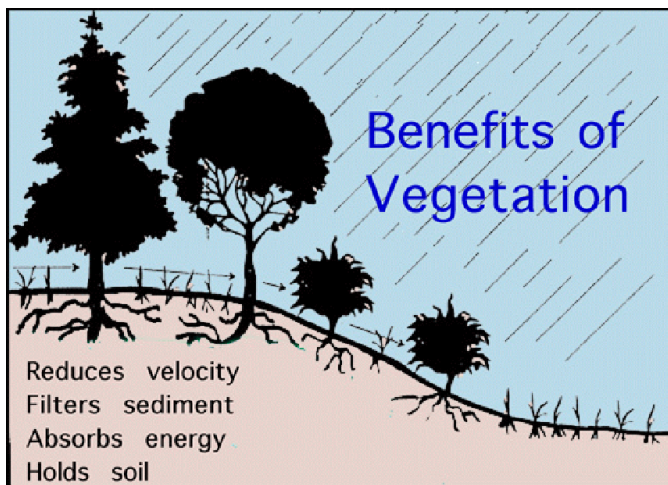
Vegetated filter strips are land areas of either indigenous or planted vegetation, adjacent to a disturbed area. They reduce flow and remove sediment and other pollutants from runoff and wastewater by infiltration, deposition, absorption, adsorption, and decomposition. The longer the flow path of stormwater through vegetation, the better the pollutant removal.

Design Considerations:

- Vegetated filter strips are designed to be used under conditions in which runoff passes over the vegetation in a uniform sheet flow. Such a flow is critical to the success of the filter strip. If runoff is allowed to concentrate, vegetation will be easily inundated and will not perform to its fullest capability.
- A filter strip is an edge-of-the-site BMP. Therefore, other BMPs that are designed to reduce soil loss are usually needed in conjunction with vegetated strips.
- Quality of vegetation in the filter strip is an important factor in determining effectiveness. Poor quality vegetation may result in increased amounts of sediment leaving the filter.
- If pollutants other than soil are to be targeted, then select the vegetation for the pollutant of concern.

Design and Construction Specifications:

- Limit the contributing area to 10 acres.
- The appropriate size and shape of the filter strip is dependent on a number of factors, including the type and quantity of pollutants, soil characteristics, infiltration rate, permeability, and slope.
- Keep slopes moderate to prevent channelized flow from forming. Length and width should be at least 50 feet and 20 feet (EPA, 1996) but width (flow direction) may be as little as 5 feet, depending on slope and loading.
- Regrading may be necessary to ensure a gentle slope of no more than 5 percent for short width strips or to roughen the soil.
- Remove trees, brush, stumps, rocks and similar materials that could interfere with installing the filter strip.
- For planted filter strips, a roughened surface (cat tracked) is preferred to slow surface runoff and thus increase infiltration.
- When constructing a filter strip, use a device such as a level spreader to ensure that runoff passes through as sheet flow.
- Select plants that have dense top-growth and provide good, uniform soil cover, and a fibrous root system for stability. Use vegetation adapted to local soil and climatic conditions and that has good regrowth following dormancy and cutting.
- Grasses are more effective than broadleaf plants for erosion control since they form a dense sod, have a fibrous root system and a more complete ground cover.
- Mark filter strips with stakes and tape or fencing.



(Image courtesy of Clean Water Services; adapted)

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Maintenance:

- Frequent inspections are necessary the first few years until vegetation is well established.
- Periodic regrading and sediment removal may be necessary.
- Encourage high plant density by fertilizing and weeding periodically. Reseeding may also be necessary.
- Minimize the development of erosion channels within the filter. Even small channels may allow runoff to bypass the filter.
- Inspect and repair boundary tape or fencing.

2.3 Reestablish Vegetative Cover

Description:

Vegetative cover acts as either a permanent cover or as a temporary measure prior to permanently stabilizing an area. Vegetation shields the soil from the direct impact of rainfall or runoff, increases soil porosity and water storage capacity of the soil, reduces the energy of the runoff, and physically holds the soil in place with the root system of the vegetation. The most effective practice is to establish vegetation on an area as work as completed on that area, rather than waiting until all project work is complete. Reestablishing vegetation can be accomplished by seeding, seeding and mulching, seeding and matting, or sodding. Maintenance may be required to successfully replant an area. This practice is not suited for areas that carry heavy traffic.

Design Considerations:

Apply mulch to areas which cannot be seeded due to the season or other issues, or to exposed soils that need immediate cover and protection. Mulch can also be applied to newly seeded areas to provide protection and cover until seed is established. Suitable mulch materials include tackified or blown straw, corn stalks, compost, and bonded fiber mix mulch. Use material that is dry and free of weeds and seeds (except that compost and bonded fiber mix mulch are applied moist). In dry weather the mulch may need to be anchored with netting or a fiber and tackifier to prevent it from blowing away. Check all mulched areas should be checked for spots where mulch has blown away or been pushed together.

Design and Construction Specifications:

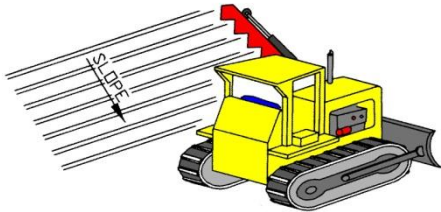
- Spread 4-6" of topsoil or compost over the site before seeding or planting.
- Fertilize according to soil test recommendations. Use a time release fertilizer.
- Use seed mix recommendations from local suppliers. Base seed mixes upon the time of year seeding is taking place. Use low maintenance, native grasses.
- Plant shrubs 2'-5' apart; trees 6'-10' for wooded areas.
- Mulch with tackified loose straw, or blown straw, or provide close knit matting.
- Water as needed to keep soil moist.
- If planting is done in July through September, irrigation may be necessary.

Maintenance:

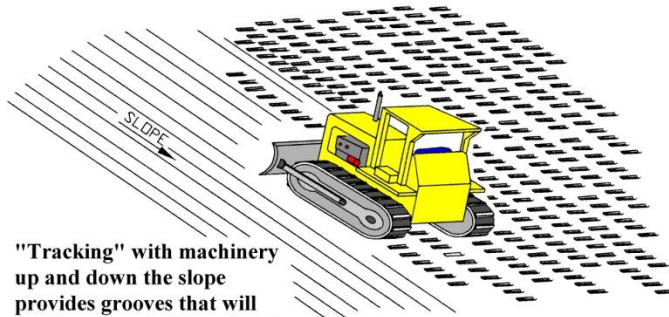
- Fertilize and water as recommended by supplier.
- Re-seed areas where adequate cover has not been established.

2.4 Hydroseeding, Mulching and Tackifiers

Hydroseeding:



Note:
Groove by cutting serrations along the contour. Irregularities in the soil surface catch rainwater, seed, mulch and fertilizer.



"Tracking" with machinery up and down the slope provides grooves that will catch seed, rainfall, and reduce runoff.

Hydroseeding is the application of a mulch, seed and fertilizer slurry to establish vegetation and prevent erosion. This is a very economical option that can stabilize slopes until grasses and plants are able to sprout. Most hydroseeding using just the blue green mulch will not provide sufficient vegetation to stabilize the site. A second or third hydroseeding may be necessary in order to establish at least a 90% coverage level. A wide variety of seed mixes are commercially available to suit each site's needs. Mulch provides water retention, soil retention, and protection for germinating seeds away from direct sun and wind. The mulch can reduce the tendency of the seeds to wash away and depending on the type of mulch can retain up to 10 times its weight in water to keep the seeds moist. Mulch can also add a carbon source and adds nutrients to the soil as it decomposes. This is especially true if compost or bonded wood fiber is used with the seed mix. A carbon source and long term nutrients are necessary for long term vegetation establishment.

Grading and minimal compaction of slopes should occur prior to hydroseeding. Ensure that the caterpillar tracks on slopes run perpendicular to the slope in order to provide a damming or mini-terracing effect rather than a channeling of the runoff (see Surface Roughening).



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Mulching:

Mulching is the application of plant material such as compost or straw to the soil surface, and can be used alone, or as part of a hydroseeding mixture as discussed above. It provides immediate temporary protection from erosion. Mulching also improves seed growth by conserving moisture; holding fertilizer, seed and topsoil in place; and moderating soil temperatures. Apply straw and mulch at a rate of at least 1½ -2 tons per acre, until the soil surface is not visible through the mulch. Mulch may need to be held in place by sprayed-on tackifiers or netting.

Straw mulch will need a tackifier if it is spread loose from bales. Use straw that is sterile or contains no straw seeds, wheat, rye, grass seed, etc. other than what is being grown on purpose. If it is blown, shorter straw strands do not appear to be as affected by wind as the longer loose straw, and usually will not require a tackifier.

Tackifiers:

A tackifier is a biodegradable adhesive that can be applied directly to the soil, or over a layer of mulch. It acts as a glue to hold the soil in place or increase the holding power of the mulch. One tackifier used by a local company is a vegetable based adhesive made of guar gum which they import from India. Coagulants and flocculants (polymers) can be used. An interesting product call DriWater^{tm(1)} actually releases water as it biodegrades which may be an advantage when hydroseeding in late summer. Tackifiers or netting are necessary in high or frequent wind areas to hold down straw.

Maintenance:

- As with reestablishing vegetation, regular watering of the seed in the first two weeks is critical for healthy growth. Less watering is needed with use of a compost blanket cover and to some extent a complete straw cover.
- Monitor for the presence of pests or disease that will weaken the plant population.
- Reapply if necessary.

2.5 Compost Cover

Description:

The use of compost cover over newly graded soil can greatly reduce erosion and minimize sediment loss and turbid discharges of stormwater from a construction site. The added benefit of having an excellent vegetative growth media in place when landscape vegetation is installed will greatly enhance the construction site.

Properly installed, the use of a compost cover can eliminate turbid runoff from construction sites for all but the most intense storms. When grading and compacting of a site occurs during construction, the infiltration rate of the resulting soil is greatly reduced (depending on the soil type by as much as twenty percent or more). By tilling in the compost towards the end of the construction just prior to landscaping, the infiltration rate of the soil immediately is enhanced and quickly approaches that of native undisturbed soil. Without some type of soil enhancement such as compost, it may be many years before the infiltration rate for vegetated areas of the site approaches that of the site's natural infiltration rate.

¹ Use of trade names is for illustrative purposes only and should not be construed as a DEQ endorsement of a particular product.

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Design and Construction Specifications:

Prepare underlain soil by grading it smooth; ensure that the finished grades and slopes minimize the potential concentrating of any water runoff. Use of at least three inches of less than 50% moisture content three quarter minus compost on 50 % or less slopes has been shown to greatly reduce turbid runoff and enhance vegetation growth. Extend the compost at least 6 feet up onto the flat portion of a site or into the vegetated undisturbed area.

2.6 Erosion Control Blankets & Geotextiles

Description:

Erosion control blankets are mats of organic fibers or inorganic materials held by synthetic or biodegradable netting. Most blankets are rolled products, but some may be sprayed onto exposed soils. Rolled erosion control products (such as netting, meshes, erosion control blankets, and turf reinforcement mats) come in a variety of materials, including jute, coconut fiber, straw, synthetic materials, plastics or combinations thereof. Geotextiles are permeable fabrics used to separate, filter, reinforce, protect or drain. Because of the versatility of the product, this technology has developed to include geogrids, meshes and cells with a wide range of applications. Geotextiles are commonly made from polypropylene, polyester or from natural material like coir, jute or straw. Depending on the desired use, they can be purchased with increasing degrees of porosity and permeability.

This is a short term measure designed to provide immediate protection until a more permanent stabilization measure can be implemented. Heavy traffic areas are not well suited to this type of protection. Some types of products are manufactured with seed incorporated into the matting, providing protection and moisture to the germinating seeds. This option requires close attention to installation procedures, and may be expensive in large scale applications. It can be very effective, however, if an appropriate medium is selected for the site. Erosion from rain impact is generally prevented if the underlying soil cannot be observed through the matting. With proper installation and maintenance this practice can stabilize the slope and greatly reduce if not eliminate the potential erosion and associated soil in the runoff.



Straw Matting (photo courtesy of Clean Water Services)



Coconut Matting

Design Considerations:

Where water infiltration is not desirable, for example on extremely unstable or steep slopes, an impermeable erosion blanket such as visqueen or other plastic material may be appropriate. In this situation, provide a place where the energy the water has gained can dissipate, such as a slash windrow, brush sediment barrier, or rock blanket at the base of the slope; and provide a means to convey this clean water off the site without contacting

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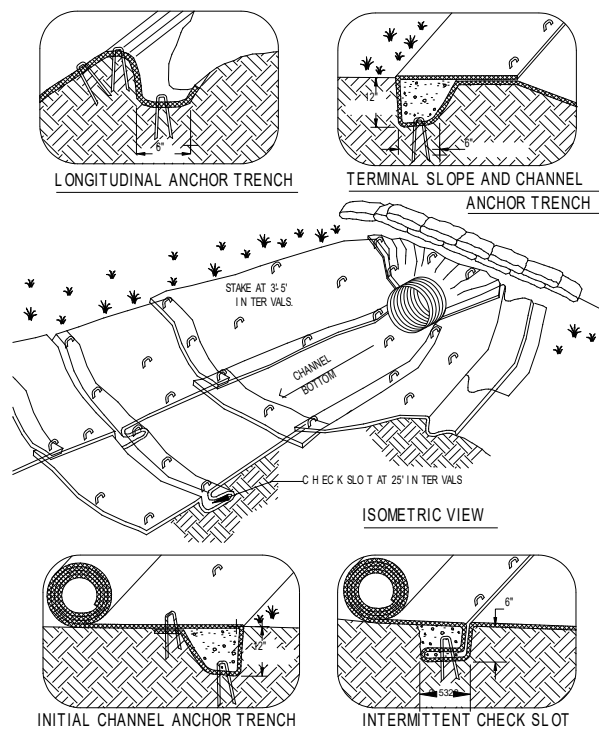
the disturbed soil of the construction site (see the Plastic Sheeting BMP for further details).

Design and Construction Specifications:

- Prepare the soil by grading or raking the soil free of clods and large stones.
- Consider cat tracking (see Surface Roughening BMP).
- If seeding or using fertilizer, add to the soil before installing the mats.
- Overlap blankets at both edges, and at the top and bottom.
- Stake mats with 12 inches minimum staples or stakes to prevent water from seeping under or around the matting. Toe matting in at the top of the slope to keep water from running between the matting and the soil. Jute fabric is reportedly better than coconut due to coconut fiber's tendency to expand and cause the mat to pull up from the soil surface.
- Apply matting by rolling down the slope or in the direction of the water flow.
- Failure to provide good contact of the matting with the slope may allow erosion and slope slippage under the mat and eventually cause failure of the system.

Maintenance:

- Check regularly for rips or locations where the matting is no longer held in place.
- Verify after storms that runoff has not seeped under the matting.

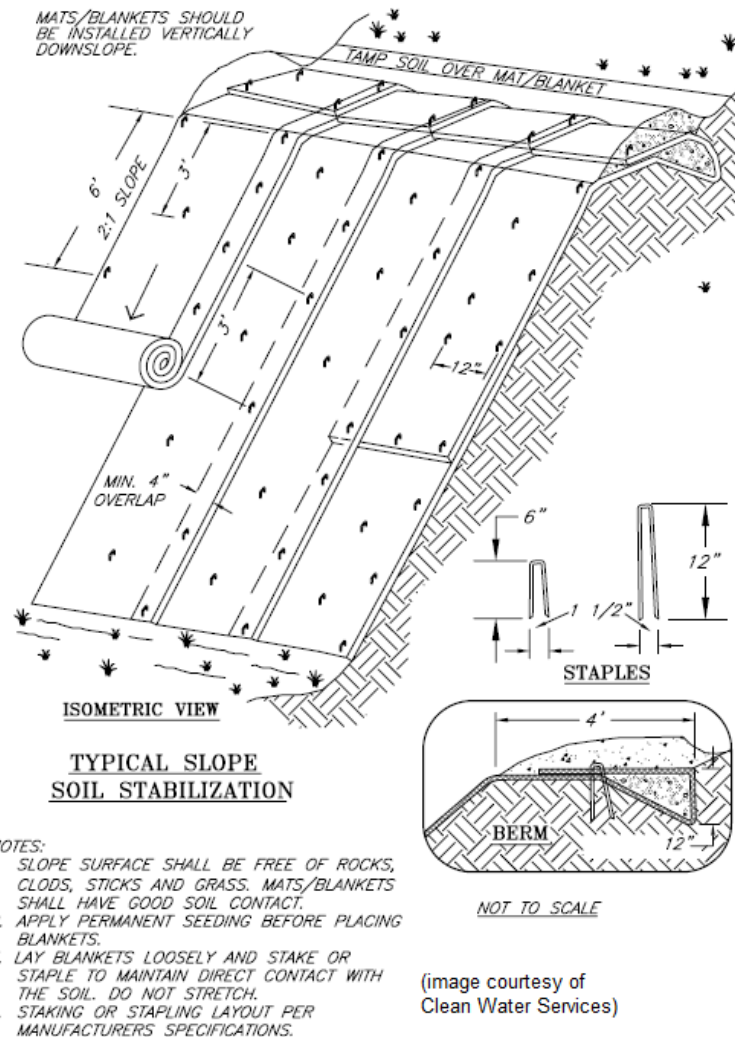


NOTES
1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURER'S SPECIFICATIONS.
2. STAKING OR STAPLING LAYOUT PER MANUFACTURER'S SPECIFICATIONS.
3. STAPLES SHALL BE 12" LONG (MINIMUM).

CHANNEL MATTING
NTS

(figure courtesy of Clean Water Services)

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2.7 Plastic Sheetting

Description:

Plastic sheets (such as black UV resistant visqueen) may be used to temporarily cover soil stockpiles or bare slopes until a more permanent stabilization can occur or until the stockpile is removed. For sites that develop erosion problem areas in the middle of the wet season and it is not possible to make a permanent repair or placement of other BMPs (for example, equipment can't access the area due to the soft soil conditions), consider a temporary placement of plastic sheetting to protect the area and divert runoff away from the area of concern until a more permanent solution can be applied.

Design Considerations:

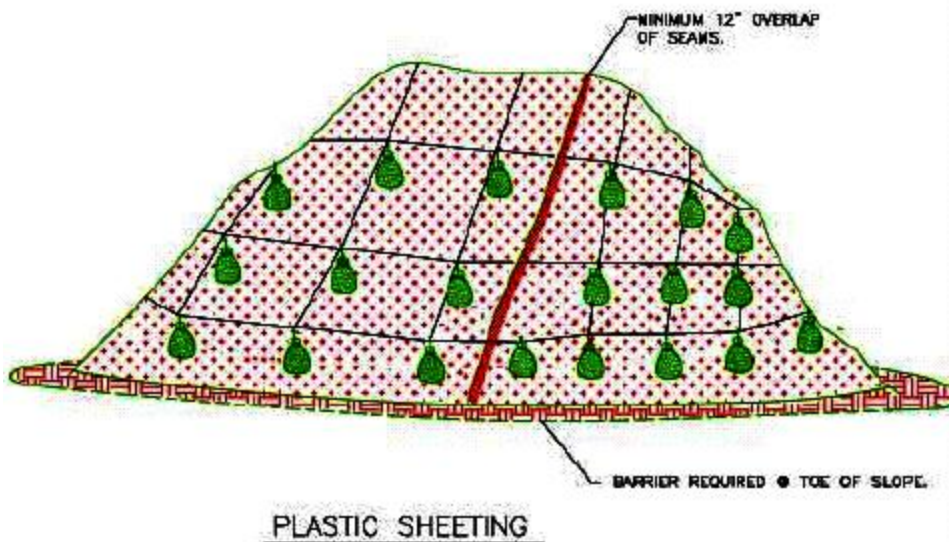
Some method such as a lined ditch should be used to collect and divert the runoff to a pipe slope drain or other device to convey the clean water off of the site. Ensure that roped together sand bags, concrete blocks, tires or other weighted objects are used to hold the plastic in place. Plastic sheetting will sterilize soils in warm weather, killing vegetation and soil biota. Consider using another method (such as mulch or blankets) if preservation of topsoil biota is desirable.

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Maintenance:

- Replace torn sheets and repair open seams.
- Completely remove and replace plastic when it begins to deteriorate.
- Check anchoring system and repair or add anchors.
- Check for erosion; address and repair damage if found.
- Completely remove all plastic once it is no longer needed.



NOTES:

1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

(image courtesy of Clean Water Services; adapted)

2.8 Dust Control



Description:

In dry weather, soil is particularly prone to displacement by wind erosion on unpaved roads and construction sites. Use administrative controls and prevention. Dust may be controlled by reducing vehicular speeds, using street sweepers fitted with filters and vacuums, or planting vegetation cover. Irrigation is a temporary measure involving a light application of water to moisten the soil surface. Apply the correct amount of water because excess water could lead to further erosion and tracking of soil off site. When other methods are not adequate or appropriate, use controls such as palliatives (chemical soil treatments) that are applied as spray-on adhesives. The chemicals act to bind soil particles together and form a more durable, resilient ground surface. Common palliatives include calcium chloride, anionic asphalt emulsion, latex emulsion, and resin-water emulsions.

Sandy sites may be able to control erosion of soil by the use of sand (beach erosion) fences, adding a layer of top soil, amended top soil, or compost and planting vegetation. Providing any of these BMPs would also hold water better than watering alone, particularly in sandy areas.



Design Considerations:

- Do not drive vehicles over the treated area to prevent the tracking of the chemicals to other areas on or off the site and to prevent the breaking of the bond holding the fine soils in place.
- Watering is the most common method of dust control, but is also the most temporary. The use of chemicals to treat exposed surfaces generally provides longer dust suppression.
- Dust may also be minimized by limiting the speed of vehicles on the construction site.
- Since certain chemicals may be inappropriate for some soil types or application areas,

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and may be detrimental to the environment, verify application of chemical treatments with DEQ or the local government prior to application.

- Minimize soil exposure by temporary or permanent soil stabilization controls, such as mulching, seeding, applying topsoil, spreading coarse gravel or crushed stone (relatively flat sites only), or planting trees. If existing vegetation on the site can be maintained, this will help in controlling dust.
- Install temporary or permanent windbreaks or barriers that reduce airborne particles by slowing wind velocities and causing the particles to drop out of the air after suspension. Large trees and shrubs left in place can provide wind barriers, while temporary measures include solid board fences, tarp curtains, sediment walls, crate walls, and sand dune fencing.
- Polymers can be used in tackifying and hydroseeding applications, either in temporary erosion control applications or as a part of a final revegetation project. Natural tackifiers such as guar gum are best as some of the polymers may be detrimental to the environment under some conditions.
- In arid regions, use tillage or deep plowing of soil to provide dust control. Large clumps of soil are deposited on top of the finer soil particles, preventing their movement by wind or water.
- Use phased construction to expose only the minimum amount of soil necessary to wind and water.

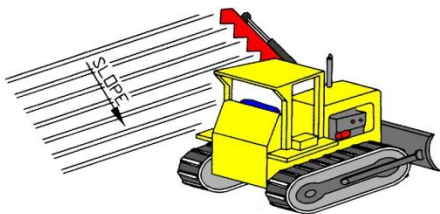
Maintenance:

- Inspect areas requiring dust controls frequently and reapply materials or controls as needed.

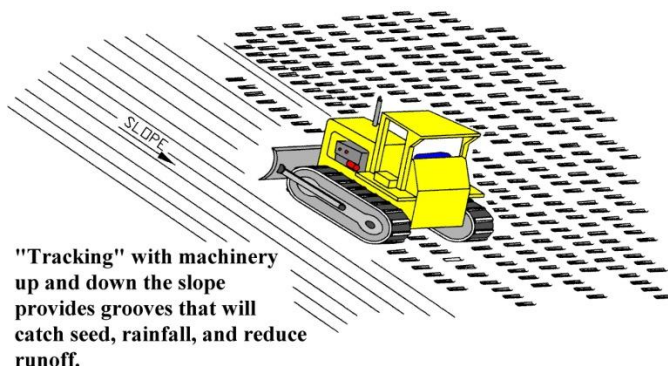
2.9 Surface Roughening

Description:

Surface roughening includes a variety of methods to create ridges or furrows in the soil surface. Leaving slopes in a roughened condition after clearing or creating a rough soil surface with horizontal depressions or grooves will trap seed and reduce runoff velocity. Roughening can be accomplished by 'track walking' slopes with tracked equipment, by using a serrated wing blade attached to the side of a bulldozer, or by other agricultural equipment.



Note:
Groove by cutting serrations along the contour. Irregularities in the soil surface catch rainwater, seed, mulch and fertilizer.



Design Considerations:

- Do not rely on roughening as a sole means of erosion control.
- Immediately seed and mulch roughened areas.
- Tracking by driving equipment up and down slope to create horizontal depressions and grooves.

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Maintenance:

Check slopes for erosion rills and washes. Fill these areas slightly above the original grade, then re-seed, mulch, or mat as soon as possible.

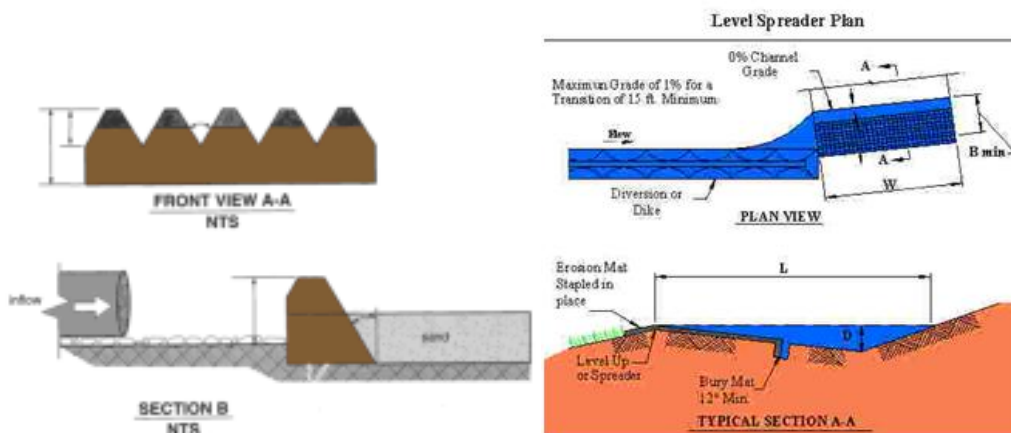
02.10 Level Spreaders

Description:

Level spreaders or velocity dissipaters are used at outfalls or discharge pipes or along swales to reduce erosion of channelized water. They reduce runoff velocity and convert channelized flow to sheet flow or spread the flow from concentrated to sheet flow at conveyance outlets. Level spreaders provide a moderate amount of infiltration by providing temporary storage of discharges and spreading runoff over a larger area for potential infiltration into the soil.

Design and Construction Specifications:

- The spreader should be level across the top to prevent channelized flow leaving the spreader.
- Create a slope leading into the spreader that is less than or equal to 1%. Leaving the spreader, create slopes less than 6%.
- Construct spreaders at least 6 feet wide and least 6 inches high.
- Material can be washed rock, concrete curb, stabilized level earthen bank, or wooden boards.



Maintenance:

- Check spreaders after every rainfall event to make sure they are level and functioning as intended (See 1200-C permit for detailed inspection requirements).

2.11 Check Dams

Description:

A check dam is a small dam constructed in a drainage way to reduce channel erosion by restricting the flow velocity. Check dams are appropriate for use in small drainage areas. Dams can be built from rock, logs, gravel filled bags, or staked bio bags; and can be temporary measures or permanent installations. They not dams in the traditional sense, and should not function like dams – they are velocity dissipaters only. They should leak a lot; that is, flow should pass through as well as over them. These structures also tend to act as sediment control structures, so it is important that they be inspected and maintained

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regularly to ensure adequate performance. Never use check dams in natural streams unless appropriate state and federal permits are first obtained.



Check dams are useful:

- In temporary swales and ditches where lining with non-erodible materials is not practical, but erosion protection is necessary.
- When construction delays or weather conditions prevent timely installation of non-erodible lining.
- In either temporary or permanent ditches or swales which need protection during the establishment of grass linings.
- In permanent swales and ditches that have a slope of 5 % or more where permanent energy reduction (velocity) is needed.

Design Considerations:

- Check dams are designed for velocity reduction and erosion control and are not intended to trap sediment, although sediment buildup will often occur. Sedimentation can clog the dam causing ponding. Lengthy submergence or excessive sedimentation can kill the vegetative lining of the ditch or swale. This is especially likely to occur if the rock is minus 2 inches due to smaller void spaces.
- If the overflow area immediately downstream of the check dam is not stabilized, downstream erosion may result. Stabilize the streambed and bank with riprap or equivalent. Extension of downstream embankments to stable grades is also effective.
- When overflow occurs at the abutments, the spillway will need to be lowered or enlarged in order to ensure that the banks do not erode. Inspect the check dam for plugging of the spaces between the rock before modifying the check dam.
- Check dams may be removed when their useful life has been completed. Remove all stones from grass channels that require mowing. When removing check dams, use caution so as not to damage channels that are permanent.

Design and Construction Specifications:

- Check dams are usually constructed of 3"-6" riprap, logs, or sandbags.
- For a check dam that is 6 feet or less in width, construct the center of the check dam at least 6 inches lower than the ends to act as a spillway for runoff and prevent water from flowing around the check dam or eroding the bank.
- For check dams wider than 6 feet, construct the center of the check dam more than 6 inches lower than the edges, up to a maximum of 2 feet lower than the edge of the check dam.
- Maximum check dam height is 2 feet, unless it is an engineered structure, due to the

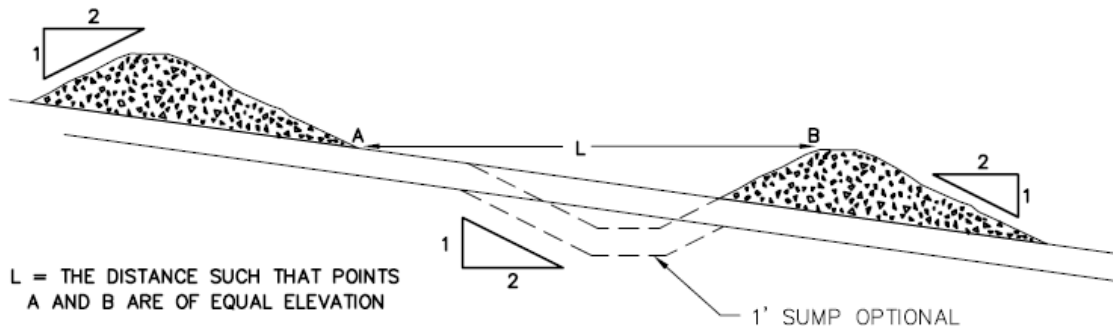
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possible water pressure behind the dam.

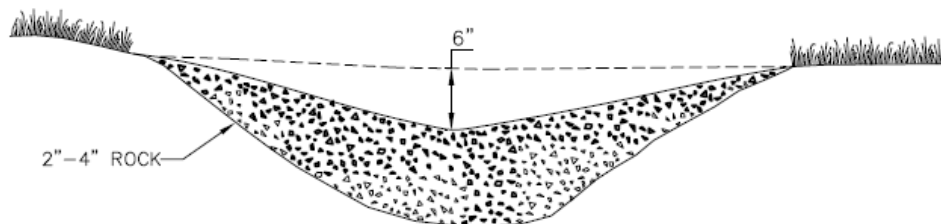
- Space multiple check dams so that the bottom elevation of the upper dam is the same as the top center elevation of the next dam downstream. That is, space dams so that the toe of the upstream dam is at the same elevation as the top of the center of the downstream dam.
- Stabilize overflow areas to resist erosion.
- Construct log check dams with 4 to 6 inch diameter logs. Embed logs a minimum of 2 feet. A spillway is needed in the log check dam. Do not exceed a drainage area of 5 acres for a log check dam. Note that removal of a log check dam can result in more soil disturbance than removal of other types of check dam.

Maintenance:

- Regularly inspect a check dam to ensure the dam has not been breached or otherwise damaged.
- Check the center elevation of the dam to ensure it is lower than the ends of the dam.
- Remove sediment accumulation behind the dam as needed to prevent damage to channel vegetation and to allow the channel to drain through the dam. Remove sediment when it reaches half the dam's height.
- Repair a damaged check dam promptly so the check dam will be fully functional for the next runoff event.
- If the spaces between the rock in a check dam become filled, removal and replacement of the check dam may be necessary.

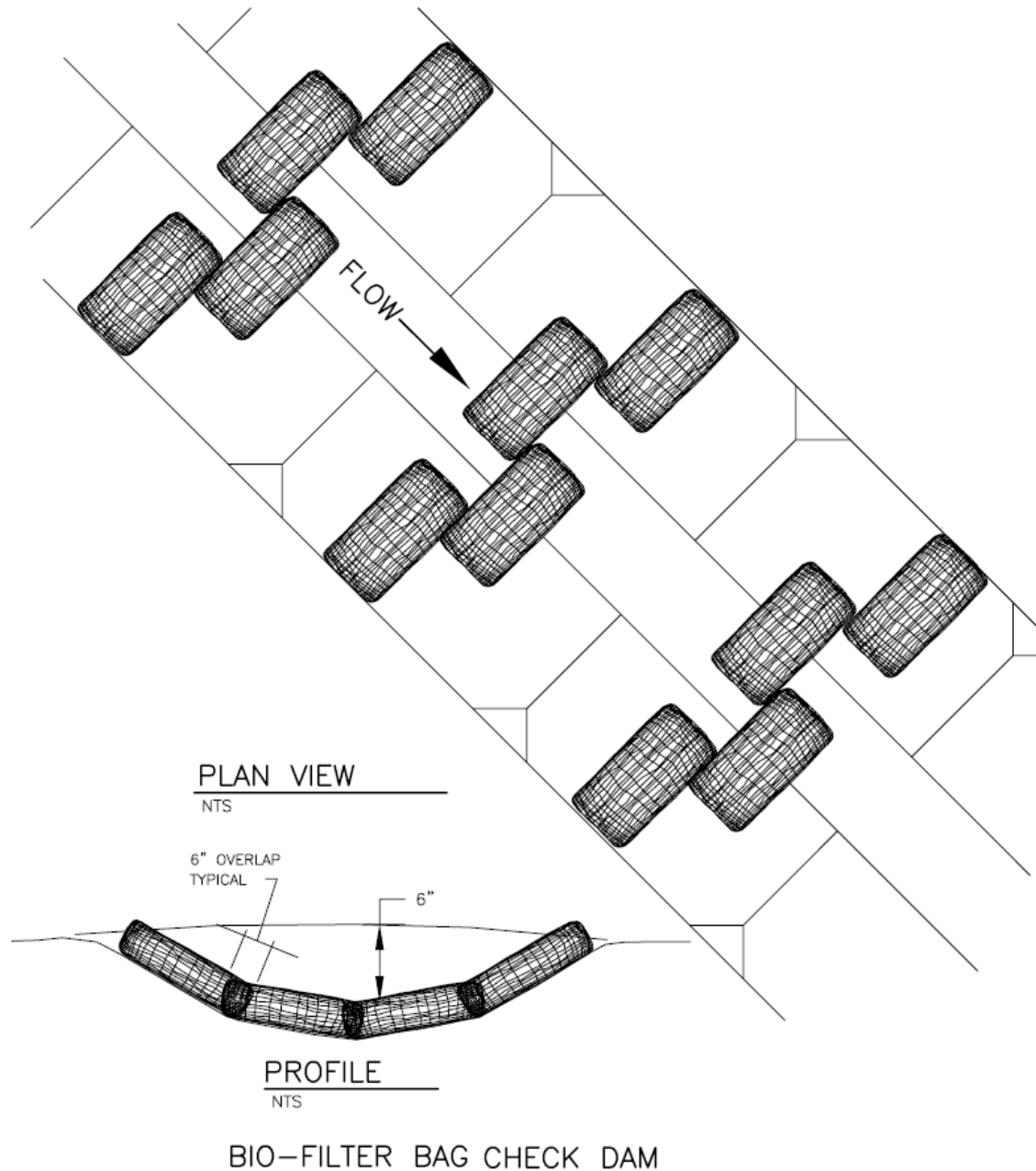


SPACING BETWEEN CHECK DAMS



ROCK CHECK DAM

(figure courtesy of Clean Water Services; adapted)



(figure courtesy of Clean Water Services; adapted)

2.12 Diversions

Description:

A diversion can be a berm (dike or ridge), a swale, an excavated channel, or a ditch used to prevent sediment-laden waters from leaving a site or to prevent off-site or upstream waters from entering a site. Diversion structures guide water around unstable areas to prevent both erosion and saturation with water. Typical diversions are combination berm/swale and may be temporary or permanent structures. Diversions are used:

- At the toe of cuts or fills to direct sediment-laden runoff to sediment traps.

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- At the top of cuts or around disturbed areas to divert clean runoff until the disturbed areas are permanently stabilized.
- At the top of steep slopes where excess runoff would cause erosion problems.
- At selected intervals on long, sloping routes to prevent erosion.
- Around a site to prevent entry of off-site runoff and to reduce flooding.
- If clean water flows from above or across the site and picks up sediment from the site, consider piping the water across the site or using diversion ditches lined with geotextile fabric. The ditch to the right is lined with geotextile fabric to prevent erosion and limit soil contact with stormwater.



Design Considerations:

- If the berm is not properly compacted and stabilized, it could fail in a heavy storm.
- A steep grade requires a protective liner or realignment to reduce grade.
- Sedimentation where channel grade decreases or changes course may cause overtopping. Realign or deepen channel to maintain grade.
- At a low point in berm where diversion crosses a natural depression, the berm will need to be built up.
- At vehicle crossing points, maintain berm height, flatten side slopes, and protect ridge with geotextile fabric and gravel at the crossing point.

Design and Construction Specifications:

- Do not use diversions on drainage areas exceeding 5 acres, though stream diversions may exceed this.
- Design diversions to handle the peak runoff from a 10-year storm or the runoff a typical local peak annual three or four hour storm event if the information is available.
- Construct berms from compacted soil, with a minimum top width of 2 feet, and a minimum height of 1 foot (with or without a swale). Allow for 10% settling. Berms may also be constructed from staked straw bales tightly packed end to end.
- When equipment crossing is necessary, diversions may be wider with flatter side slopes and lined with gravel to minimize erosion with a geotextile fabric under the gravel.
- When practical, minimize temporary diversions needed by constructing embankment ridges to slope to one side.
- Stabilize outlets to prevent erosion and convey runoff to a point where it will not cause damage.
- Vegetate diversion immediately after construction unless the diversion will be in place fewer than 30 working days and then provide a close knit jute, burlap, or similar liner in order to minimize erosion of the diversion structure.

Maintenance:

Permanent diversions should be checked following each rainfall until disturbed areas are stabilized. Inspect temporary diversions daily when runoff is occurring and at least once every two weeks (See 1200-C permit for detailed inspection requirements). Remove accumulated sediment from the channel. Check the dike, swale, and outlets and make

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necessary repairs immediately. Reseed areas that fail to establish a vegetative cover. Temporary diversions may be removed and blended with the natural topography when the area protected is permanently stabilized.

2.13 Bioswales

Description:

Bioswales are shallow, trapezoid-shaped ditches lined with grass or other vegetation that act as filters for runoff. Bioswales do well with first flush runoff, are economically feasible, improve aesthetics and have minimum environmental impacts. The organic topsoil layer is good for degrading petroleum solvents, heavy metals, nutrients and hydrocarbons. They can be placed anywhere with careful site design, but are best when located where water can pond and settle out sediments, such as at a stormwater outfall, commercial development or roadside.

Design Considerations:

- The bioswale needs to be of sufficient width that vegetation does not die off when submerged, and so that flow is slow enough to provide efficient treatment and to not cause erosion of the swale.
- Grade the bioswale to create sheet flow rather than a concentrated stream in the bottom of the swale. Sheet flow decreases the chance of producing gully erosion and distributes contaminants over a wider area. Level spreaders (such as slotted curbs) can be used to facilitate sheet flow.
- Bioswales work best when used for treatment and conveyance of stormwater after rather than before a settling pond.
- Do not use bioswales on steep, unstable slopes or landslides.

Design and Construction Specifications:

- Design swales to deal with the peak runoff for a 2-year, 24-hour storm event.
- Critical design elements include: size of drainage area to be treated, location of bioretention areas, sizing guidelines, and water budget.
- Biofiltration is suitable for smaller sites 10 or less acres per biofilter.
- Bioswales work best when they are at 200 feet in length. In tight spaces obtain more length by using a curved path.
- Construct bioswales with a maximum bottom width of 8 feet. A low height divider can be used in wider swales to split the low flows to one side of the swale.
- Install level spreaders periodically starting no more than 10 feet downstream from the inflow point, at the inflow to any curves, in the curve, and at the outfall of a curve, in order to maintain sheet flow at low intensity rain events. For sharp curves it may be necessary to armor the outside bank to prevent erosion.

Maintenance:

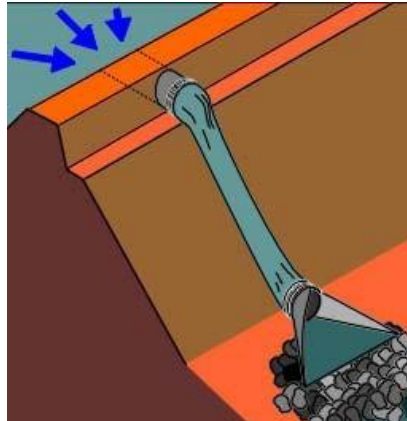
- Trim vegetation in the bioswale every year if the vegetation can grow to heights over 12 inches. Remove woody species periodically. Dispose of plant clippings properly as they may have absorbed hazardous materials which may be released upon decomposition.
- Regrading may be necessary to reshape the shallow-broad shape as sediments collect and form pools. As with plant waste, remove sediments dispose of properly.

For additional information on Bioswales see the Biofilters document at:
<http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>

2.14 Pipe Slope Drains

Description:

A temporary pipe slope drain is a structure used to convey clean water down the face of a cut or fill without causing erosion. Temporary slope drains are used in conjunction with berms along the edges of newly constructed slopes to prevent erosion. They are used along cut and fill slopes until permanent stormwater drainage structures are installed. They can also be used to conduct water across a site without contamination. Design the inlets and outlets for adequate stabilization. The outlet area is particularly important, as the higher velocity water at the end of pipe can be extremely erosive. Outlet design and correct installation are the keys to the success of this type of control.



(figure courtesy of Clean Water Services)

Design and Construction Specifications:

- Do not exceed 5 acres of drainage area for each slope drain.
- Install pipe slope drains at frequent intervals along continuous unprotected slopes and at low points in the roadway profile grade.
- Plastic lining; fiber matting; wooden flumes; metal, rigid, or flexible plastic pipe; and half round pipe are commonly used. When plastic lining is used, provide a smooth, uniform ditch to prevent water from overflowing the sides. Do not use fiber matting and plastic sheeting on slopes steeper than 4:1 except for short distances of 20 feet or less.
- Ensure that pipe connections are watertight and secure so joints will not separate.
- Pipe diameters should be calculated by a qualified engineer.
- Construct inlets to channel water into the drain.
- If the water entering the pipe slope drain contains sediment, then staked bio bags, rice straw wattles, or some other inlet protection should be used.
- Anchor drains to withstand the force of the water. Anchoring can be accomplished by staking at approximately 10 foot intervals or by weighing down the drains with items such as riprap, sandbags, or compacted soil.
- Compact the base for temporary slope in a concave form to channel the water or to hold the slope drain in place.



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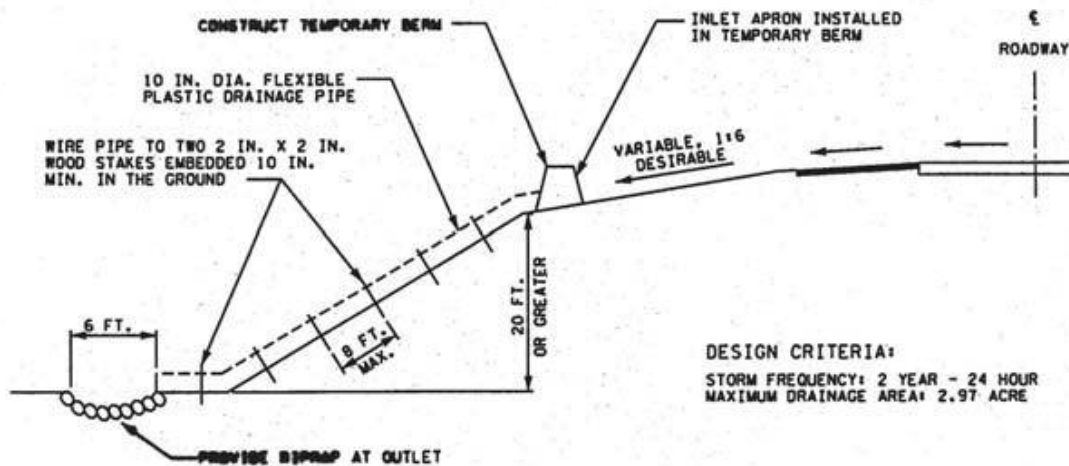
- Construct outlets to reduce erosion downstream with items such as dumped rock, small sediment basins, or other approved devices.
- Remove all temporary slope drains when no longer necessary and restore the site to match the surroundings.

Common Problems:

- Washout along the pipe/matting/flume due to seepage, piping, and/or overflow. A washout may occur because of inadequate compaction, insufficient fill, installation of drain too close to edge of slope, too steep a slope (open drains), too large a drainage area, or undersized conveyance channel.
- Overtopping of diversion. This can be caused by undersized pipe (drainage area too large) or a blocked pipe, or by improper grade of channel and ridge.
- Erosion at outlet. This can occur when the pipe does not extend to stable grade or outlet. A stabilization structure may be needed.
- Displacement or separation of slope drain. The drain has inaccurate or insufficient anchorage.

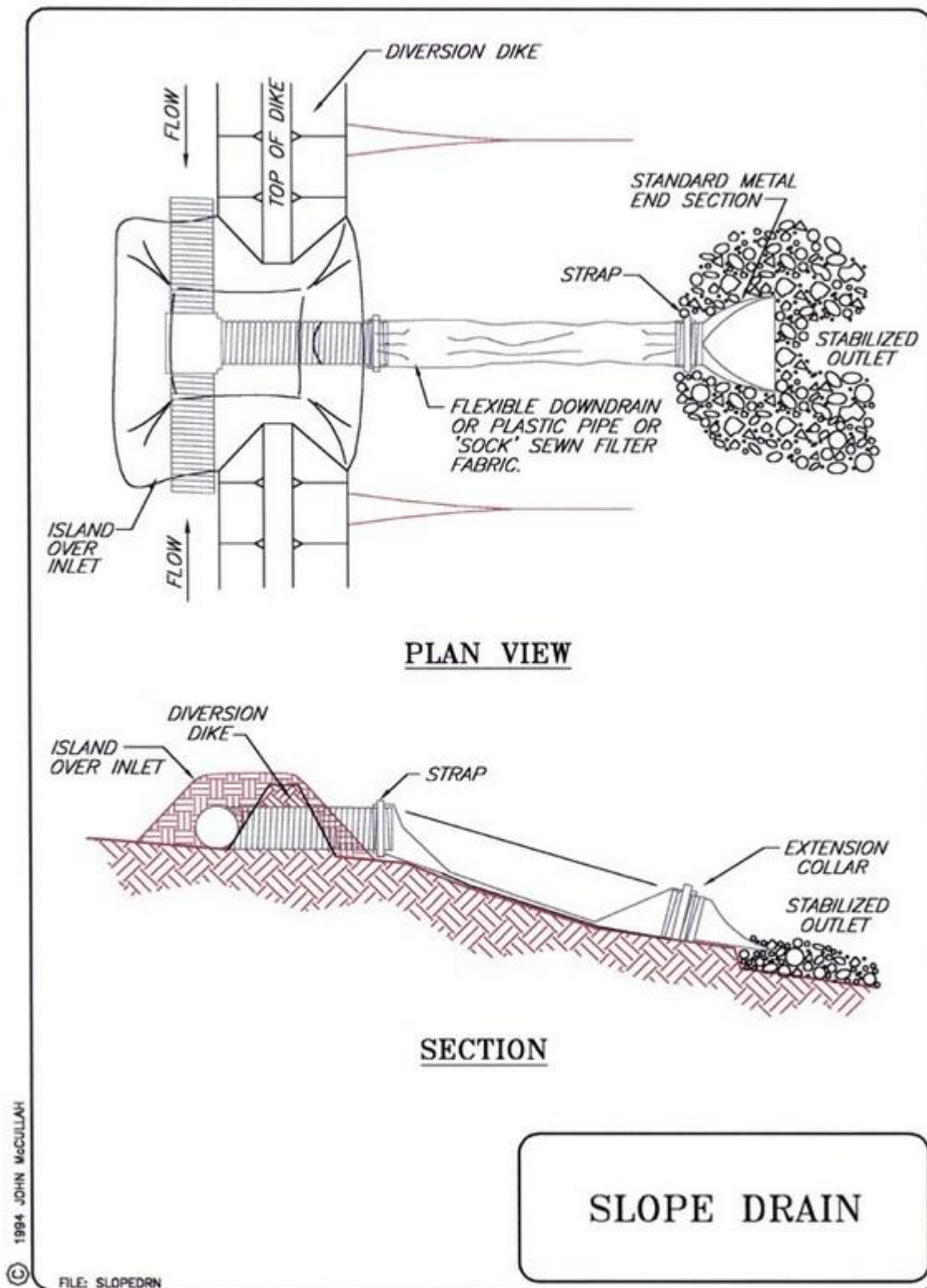
Maintenance:

- Inspect temporary slope drains daily when runoff is occurring and at least once every two weeks (See 1200-C permit for detailed inspection requirements). Some critical points that should be checked at each inspection are as follows.
 - Check inlet and outlet for sediment or trash accumulation; clear and restore to proper condition.
 - Check the fill over the pipe for settlement, cracking, or piping holes (seepage holes where pipe emerges from dike); repair problems promptly.
 - Check conduits for leaks or inadequate lateral support; repair problems promptly.



Pipe Slope Drain Example

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(Figure courtesy of Clean Water Services)

2.15 Outlet Protection

Description:

Outlet protection involves the use of an energy-dissipating device at the outlet of a pipe or conduit to prevent excessive erosion (scour) from the discharge of runoff. Outlet protection structures can be manufactured from a number of different materials.

Design and Construction Specifications:

Concrete/Paved Outlet Protection:

Concrete or paved outlet protection is a permanent structure and therefore should be designed by a qualified engineer. The design and installation of such a structure should follow plan specifications.

Riprap Outlet Protection:

Excavate subgrade below design elevation to allow for thickness of filter and riprap. Compact any fill used in the subgrade to the density of the surrounding undisturbed material. When applicable, smooth the subgrade to prevent tears of the filter fabric. Even if not shown on plans, place filter stone, fabric, or a blanket prior to placing the riprap to help prevent subgrade erosion. Use extra-strength quality filter fabrics, installed in continuous sections, placing the upstream section of fabric a minimum of 1 foot over the downstream section of fabric. Completely replace any fabric that is torn during riprap installation.

Install riprap of the size and thickness as shown on plans to ensure a minimum thickness of 1.5 times the maximum stone diameter. Maintain final structure to the lines and elevations as shown in plans, taking care not to place stones above the finished grade.



(Photo courtesy of Clean Water Services)

Apron Installation:

Undefined Channel: Construct apron on a zero grade, aligned straight, and long enough to adequately dissipate energy. Construct so that there are no restrictions or overfall from the apron end to the receiving grade.

Well-Defined Channel: Construct apron straight and properly aligned with the receiving stream. Extend the apron to the top of the bank and long enough to adequately dissipate energy. Construct so that there are no restrictions or overfall from the apron end to the receiving channel.

For outlet piping of relative small diameter (generally 18 inches or less), completely burying the outfall side of the pipe in rip rap generally provides the velocity diffusing feature without concern for the length of protection needed.

Design Considerations:

- If the foundation is not excavated deep enough or wide enough, riprap will restrict flow across sections, resulting in erosion around apron and scour holes at outlet.
- If the riprap apron is not on a zero grade, erosion will result downstream.
- If the stones are too small or not properly graded, stones will move, resulting in downstream erosion.
- If riprap not extended far enough to reach a stable section of channel or adequately dissipate energy, there will be downstream erosion.
- If an appropriate geotextile fabric is not installed under riprap, this may result in stone displacement and erosion of the foundation.

Maintenance:

- Riprap outlet structures do not require much maintenance when properly installed. Check periodically (particularly after heavy rains) for erosion at sides and ends of the apron and for stone displacement. Repair damage immediately using appropriate stone sizes.
- Modify size and depth as needed to prevent erosion and scouring.
- Check outsides of pad to verify that pad is wide and long enough to prevent erosion along the edges.

2.15 Terracing

Description:

Terraces are constructed across slopes and form a series of channels and earthen embankments that reduce erosion by breaking the long slope into several shorter sections. The speed of the runoff is thereby reduced as is the amount of sediment loss. Runoff is collected in the terrace channel and can be stored for infiltration into the soil or diverted through some kind of erosion resistant outlet.



2.16 Straw Wattles

Description:

Straw wattles are manufactured tubular plastic netting filled with rice straw. They are approximately 9 inches in diameter, 7 to 25 feet long, weigh about 35 pounds, and are easy to install. They can be installed on steep slopes and must be staked in position. Straw wattles act to disperse runoff laterally and trap sediments on the upslope side. If the soils are poor with respect to nutrients and need to be fertilized, the mini-terraces formed by the wattles encourage the nutrients to stay on the slope.

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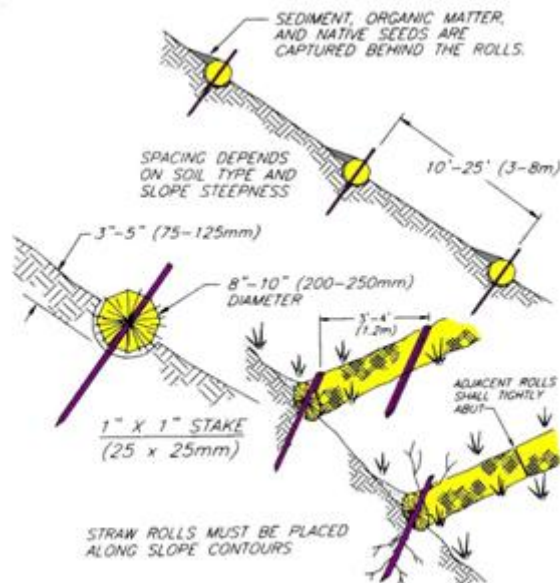
(Image courtesy of Clean Water Services)

Basic Design and Construction:

- Excavate a trench in which to lay the wattles, ensuring that water does not seep underneath the wattles. If the soil is loose enough, you can walk the straw wattle enough to create the required depression.
- Wattles are placed along the contour of the slope to reduce water flow velocities and trap sediments mainly through settling.
- Make sure the wattle fits snugly against the adjoining wattle, without gaps or cracks.

Maintenance:

Regularly remove sediment behind the wattles. Replace the wattles every three years or when they appear to become plugged (that is, water will not pass through).



2.17 Compost Berm

Description

A compost berm is an efficient way of preventing sediment and turbidity discharges from a construction site. Yard debris compost is used to build a dike which filters the stormwater runoff. Most sediment and colloidal soil particles are negatively charged. Compost is positively charged which tends to attract and hold the soil particles. In addition, the biota in the compost consume oil and grease and can convert some soluble

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pollutants into insoluble forms. Compost berms can benefit vegetation when the compost is spread out or if the berm is seeded for the vegetation growth on the berm itself.

For further information on Compost for Erosion Control see the Biofilters document at:

<http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>.

Design and Construction Specifications:

The basic compost berm consists of at least a 2 feet wide by 1 foot high continuous pile of compost. Use compost made up of yard debris, leaf, or composted biosolids from a sewage treatment plant. The compost grade can be either two-inch minus, one inch minus, or half-inch minus, depending on the slope of the area behind the berm. Steeper slopes generally require larger-sized compost. Sheet flow of runoff is a must upgradient of the berm. This may be established by the application of a 2 inch thick compost layer on the slope, a silt fence installation, or some other method for dispersing or preventing concentrated flows from occurring. The downstream side of the berm should not be bare soil or the runoff will pick up sediment and turbidity after the berm.

Maintenance:

Regularly inspect the berm to ensure that it does not blow out from concentrated flows and to ensure that the compost does not become saturated, plugged, or rendered ineffective for some other reason. Inspect during stormwater runoff, so that turbidity breakthrough will be evident by muddy water flowing through the berm.

2.18 Compost Sock

Description:

Compost Socks are close weave sock either of synthetic or cotton fiber filled with mixed yard debris compost, available in sizes that generally range from 8 to 24 inches in diameter. They tend to be heavy, but can be moved. Because socks deform (flatten), they make a good seal between the sock and concrete or asphalt surfaces. Socks are available in preset lengths or can be blown on site to the desired length. Synthetic socks deteriorate in a couple of years and cotton socks deteriorate in about a year. Seed can be incorporated with the compost fill. Socks are very ineffective in removing turbidity and suspended solids. For this purpose, it may be necessary to use more than one sock, side-



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by-side.

Compost socks can be staked and used as check dams, but exercise caution when using in this way, because very little flow can go through socks, and thus will usually overflow when used as check dams. For this reason, special sock tubes are available that have a downstream skirt to protect the stream bed from any damage that may be caused from water overflowing the sock and undercutting the stream bed. When used as a check dam stake the sock to prevent the water pressure from moving it.



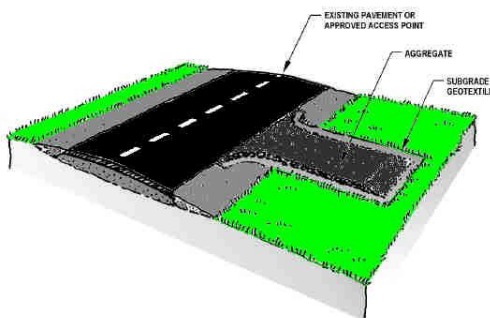
2.19 Gravel Construction Entrance and Wheel Wash

Description:

A gravel construction entrance is a stabilized rock pad, placed at construction site ingress/egress locations. Constructing paved or rocked roads or entrances can reduce the amount of mud and sediment that is tracked onto areas where the material could be washed into the storm drainage system. Construction entrances also typically include a curb ramp.

Design Considerations:

- Vehicle traffic leaving the site should be restricted to only those locations fitted with a gravel exit or wheel wash.
- Locate the entrance to provide for maximum utility by all construction vehicles.

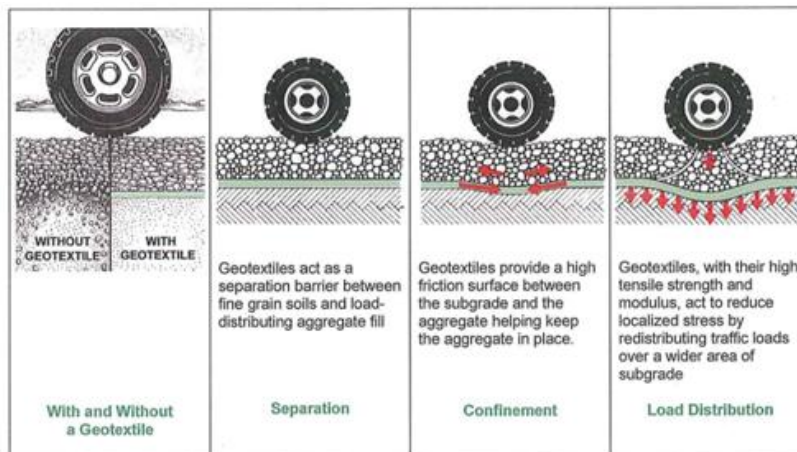


(graphic courtesy of Clean Water Services)

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Design and Construction Specifications:

Construct the gravel pad to extend to the structure (minimum of 50 feet), at least 10 inches deep and 20 feet wide. Use geotextile fabric as a barrier between the rock and the native soil to prevent migration of the soil fines through the rock to the surface and thus back to being tracked offsite. Use a large size rock aggregate; 6 – 4 inch quarry spalls are best with little or no fines. Aggregate of this size will deform tires of vehicles thus reducing or eliminating the need for a wheel wash. If the pad is to be located in a future driveway, the existing ground can be excavated deep enough before installation so that the final rock and pavement can be applied over the top. Ensure that the turning radius of the entrance is sufficient to accommodate larger trucks.



A product which shows some promise on paved areas is the Rumble Track. The Rumble Track is a reusable matting for paved entrances that will deform the tires thus knocking off a large amount of any clinging sediment. If there is a lot of sediment being tracked, frequent cleaning of the mat will be needed.



A reusable grate could also be used for some entrances as shown below.

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Shaker Rack

Wheel washes can also be installed at site exits to remove dirt and rocks from truck tires. A series of railroad rails spaced 2 to 8 inches apart can be used to shake dirt and rocks loose while the vehicle is driving through the wheel wash. Large rock (6 – 4 inches) can also serve this purpose. Water used to wash trucks must be treated to remove solids and turbidity before being discharged from the site.

The installation of a pressure washer is a relatively quick and low cost method of washing wheels and can be used on a construction entrance that uses the large aggregate. It can be added if the large aggregate in itself was insufficient to prevent tracking of sediments off site. It just takes a couple of minutes to clean the wheels.

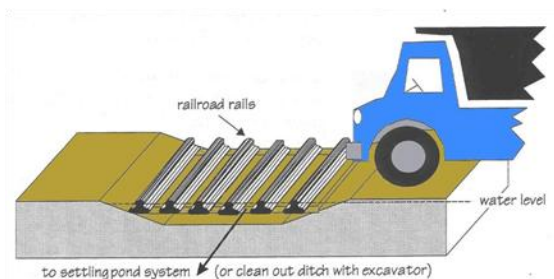
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(Photo courtesy of Clean Water Services)



If water is not yet available on the site, a water truck can be used on the construction entrance (However, this should not be done on a paved street, as shown below). This will typically release larger amounts of water for short time intervals and some method for capturing this excess water and ensuring that it does not cause erosion and sediment control problems will have to be provided. Some portable wheel washers also use water from trucks (shown above).



Maintenance:

- Any material that reaches the road must be cleaned up immediately by vacuum sweeping and not washed off with water.
- Additional rock may be needed periodically to maintain a clean surface.

2.20 Road Sweeping

Description:

When roads through a construction site are paved, they can quickly become coated with sediments. A common, but harmful, practice is to wash down the surface with water. The sediment laden runoff then drains to the stormwater system, polluting the receiving water. Operations involving heavy vehicle traffic also produce elevated metal levels in stormwater from vehicle brake shoes or clutches (copper) and tire particles (zinc).

Basic Design and Construction:

Sweeping of paved roads, parking lots, and storage areas with a vacuum sweeper that incorporates HEPA filtration or other high efficiency method of filtration of the exhaust air from the sweeper to trap the very fine metallic particles found in road or parking lot dust can reduce these discharges to stormwater. If the filter is not fine enough and well contained, materials that the vacuum picks up will be dispersed into the air.

Information from some manufacturer's reports indicate that some sweepers will retain particles 10 microns (0.01 mm) or larger. The smaller size of the model and four-wheel steering makes it easy to maneuver in small spaces that traditional sweepers would not fit.

Ensure that good control measures are implemented when dumping the contents of the sweeper and practice proper disposal methods for the emptied contents to ensure that there is no adverse environmental impact

2.21 Catch Basin Inlet Protection

Description:

Inlet protection involves using a temporary barrier to prevent the flow of sediment and debris into a storm drain or other form of conduit. Inlet protection is used to prevent sediment from entering and clogging the storm drainage system prior to permanent stabilization of a construction area. This practice helps to keep the conveyance channel free from debris or sedimentation that could reduce the capacity of the channel.

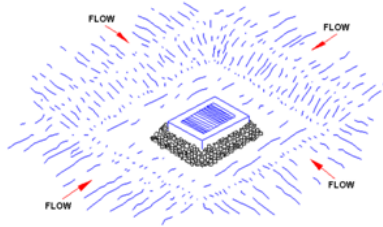
Basic Design and Construction:

There are several techniques for inlet protection. Some of the methods actually filter out larger particulates, while others may require excavation and/or the use of a dike or berm to establish a drop area. Drop areas are used to promote ponding or slowing of the runoff flow that allows sediment to settle. Some inlet protection devices are designed for use on sites that have not been paved, while others are effective when used on paved surfaces or bare soil areas. Basic design and installation procedures for some of the most commonly applied processes are described below, although other innovative techniques exist for accomplishing the same purpose.

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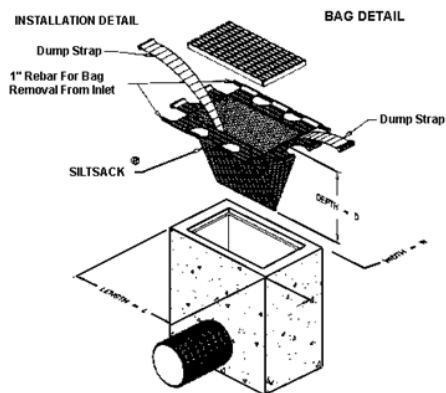
Excavated Drop Inlet Protection

This process is limited to maximum drainage areas of 1 acre. The area is excavated 1 to 2 feet deep, as shown in the diagram on the right, and wide enough to create a total storage volume of at least 35 cubic yards per acre. Construct slopes to be 2:1 or flatter. When possible, shape the basin to orient the longest dimension toward the largest inflow.



Catch Basin Insert Bag Inlet Protection

An insert bag is a woven fabric bag that has a fairly large filtering area so that it reduces, under normal circumstances, water back up and has relatively little to no maintenance depending on loading. Some manufactures use a non-woven material that has been punched with micro holes. Select bags based on filter surface area and normal rather than high flow characteristics. Initial water flow rate is generally around 40 gallons per minute. Bags are installed below the grate to minimize damage that can occur due to vehicles and machinery. Experience has shown that the material will last from between three months and one year without replacement, depending on traffic. Cleaning may be required (depending on loading), and the bag can be reused after cleaning as long as it has not deteriorated. A bag will generally capture 0.0117 inch (297 micron) particle size and above, but as it traps sediment it will become more efficient and capture finer particles. Along with the finer particle capture will be a reduction in the flow capacity, and this may eventually result in localized standing water or flooding. This type of inlet protection is highly recommended for areas where vehicle traffic occurs as it will result in significantly less maintenance compared to most other inlet protection methods



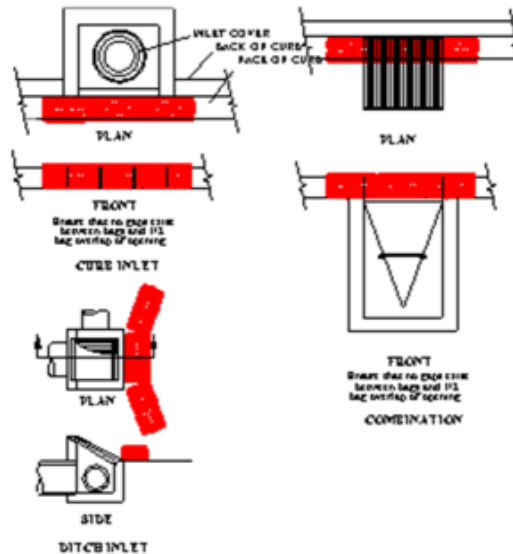
Catch Basin Insert Bag
No overflow and normal flow only

Bio-Filter Bags

Bio-filter bags (Biobags) are woven 12" by 9" by 40" nylon mesh bags containing bark and/or wood chips. There are at least two sizes of biobags. The most common size of biobag is approximately eighteen inches long. They are commonly used to remove energy from concentrated flows or for protection around some types of catch basins. Stake biobags to keep them in place in concentrated flow areas.

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Biobags can be used in a number of locations and in a variety of arrangements around the storm-drains. Position biobags so that there are no gaps between the bags that could allow runoff to reach the storm drains unfiltered. Due to their high maintenance and potential for damage or displacement on paved areas, biobags are not recommended for paved areas. . If biobags are used in high-traffic areas, use additional measures to help prevent them from being run over (for example, flagging several feet high).



Biobags slow water sufficiently to trap sand, silt and clay in and upstream of the bag. They fit the contours of the land. They hold together well unless damaged by traffic, and can therefore be removed easily when saturated. Wildlife won't tear them apart to eat them and they will not introduce grass and weed seeds to the site.

Biobags have the least retention of any of the erosion controls but can serve a valuable purpose in retaining larger particulate sizes when properly maintained. Unfortunately, they are seldom maintained and are quite frequently damaged by traffic shortly after installation. Also, at the time of removal, very few are removed properly. If the sediment that has dropped out behind the bags is not cleaned up, then the purpose of the inlet protection is lost as the next rain event will wash this sediment into the storm drain age system.

Maintenance:

- Remove accumulated sediment from behind biobags to ensure efficient sediment removal.
- Replace biobags whenever they become plugged with sediments or damaged, such as when vehicles run over or dislodge them. With their much more open voids and their ability to retain larger particle sizes of sediment, it is very important to replace the biobag when water can no longer pass through them.

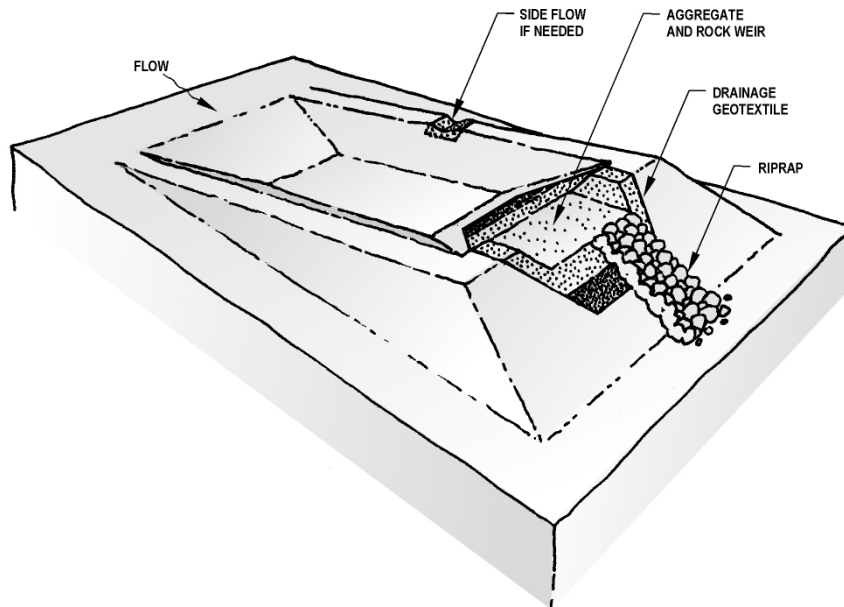
Maintenance - Essential to all Inlet Protection:

The effectiveness of the inlet protection is dependent on follow-up maintenance. Inspect inlets following each storm event and daily when runoff is occurring (See 1200-C permit for detailed inspection requirements). Remove accumulated sediment and debris. Make any needed repairs immediately.

2.22 Excavated Sediment Trap

Description:

A sediment trap is a small, temporary ponding area, designed to remove sediment from runoff by holding a volume of water for a length of time, allowing larger (sand-sized) particles to settle out. They are placed on the downslope side of the exposed areas in the temporary drainage channel on the site and not in the receiving stream. Periodic sediment removal is necessary to maintain the effectiveness of the trap in capturing sediment from upland sources. Sediment traps are very small pits designed to only remove the heaviest of the sediment, because the retention times are extremely short.



(Image courtesy of Clean Water Services)

Design Considerations:

- Sediment trap design is based on the amount of unstabilized area, anticipated runoff rate, the amount of heavy sediment to be removed from the runoff, and particle size (See “Settling Velocities of Sediment Particles in Water” table).
- When choosing a location for a trap, make sure that the site will be low enough to accommodate any diversion berms, dikes or pipes.
- Design the storage capacity of the basin based on the anticipated rate of sediment accumulation and frequency of maintenance. Balance the capacity of the sediment trap should with the need to conform the sediment trap to the surrounding topography.
- Ensure that excavated side slopes are stable from erosion under ponded conditions.
- Ensure that the drainage channel above and below the proposed excavation is generally stable and vegetated or lined so that additional erosion of the channel does not occur.
- Discharge runoff from the trap onto a stabilized area or to the outfall from the site.
- Ensure that the sediment trap inlet and outlet are stable. The necessary stability can be achieved with the aid of channel stabilization measures including grade control structures and channel lining.

Maintenance:

- Repair grade structures or channel lining as needed.
- Remove obstructions which may divert stream flow.
- Remove sediment when it reaches half the depth of the sediment storage area.

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- Check after all significant rainfall, and daily when runoff is occurring, for effectiveness in trapping sediments and to determine if repairs are needed (See 1200-C permit for detailed inspection requirements).

2.23 Sediment Basin

Description:

A sediment basin is a temporary pond built to capture eroded or disturbed soil that is washed off during rain storms. Sediment basins are usually earthen embankments, but may be constructed aboveground with straw bales, and may also be constructed of concrete movable barriers with a plastic liner to enable water retention. The outfall from a sediment basin may be a stand pipe (perforated or not) or some other floating or elevated discharge such that a wet settling area is created upstream of the outfall. Sometimes a wet or dry water quality detention pond is temporarily modified to create a sediment basin during the construction activities of the site.

Design Considerations:

- The potential impacts of dam failure need to be considered, if this is a bermed ravine or depression.
- Once the sediment basin is constructed, ensure that equipment and vehicles can access the pond to remove accumulated sediment.
- Consider availability of suitable spoil (dredged sediment from the basin) locations on-site and feasibility of off-site spoil locations.
- Do not construct sediment basins in natural streams or waterways.

Design and Construction Specifications:

- Locate basins in low gradient reaches of the site. Elevated portions of the site can be used if the runoff is pumped into it.
- Build the basin large enough to control the expected volume of water runoff and with enough retention time to settle out the expected particulate size in the runoff.
- Keep inlet and outlets a maximum distance apart in order to obtain the maximum settling volume and retention time.
- Avoid channelizing the water flow in the basin as the resulting velocity may resuspend the soil particles.

Maintenance:

- Excavate accumulated sediment regularly based upon observed loading rate and periodic depth measurements.
- Remove obstructions which may plug outlet.

2.24 Sediment Fence

Description:

Sediment fencing consists of a geotextile fabric, usually 36 inches wide, with regular spaced pockets for supporting posts. Sediment fencing causes heavy soil particles to be retained both through a filtering operation and through the creation of a small settling basin upslope of the fence through restriction and retardation of the runoff flow velocity. The main benefit of sediment fencing is slowing the runoff, which causes the heavier particles in the runoff to settle out. The weave of the fabric determines the size of the soil particle retained by the sediment fence to a great extent. Filtering is generally in the 297 micron (0.0117 inch) and above particle size. As heavy, large-sized particles are retained,

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they create a build up effect, which will retain smaller-sized particulate similar to the way an air filter becomes more effective as it retains dust. At some point the material behind a sediment fence becomes too efficient, causing the material to rise higher behind the fence and start the retention cycle all over again.



(Photo courtesy of Clean Water Services)

Design Considerations:

Sediment fences are effective only in sheet flow conditions; do not install sediment fences across streams or other concentrated flows. Do not use sediment fences in gravel, as the sediment-laden runoff will likely flow under the sediment fence. Turbidity reduction generally does not occur, and data indicate that a sediment fence may in fact be detrimental in controlling turbidity. At best, a sediment fence can be used to retain the heavy, settleable solids, while other erosion controls are necessary to reduce turbidity.

Design and Construction Specifications:

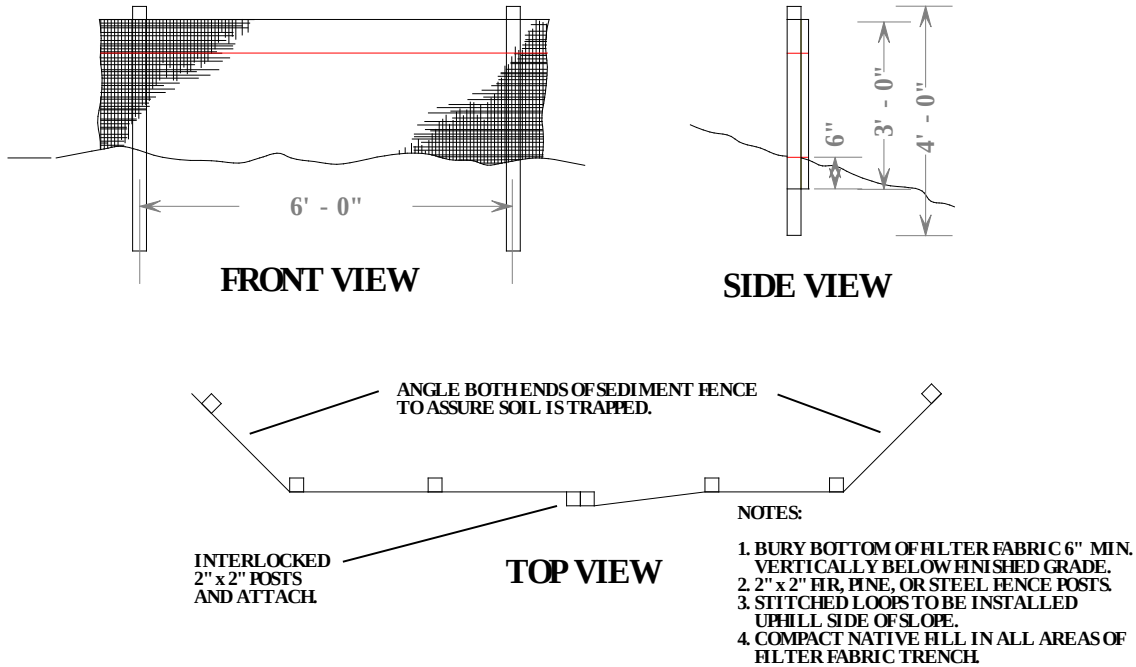
- Trench the sediment fence at least 6" into the ground. The use of a "ditch witch" or other mechanical means is helpful.
- Stretch the sediment fence stretched tightly between the posts. Do not allow the fence to sag or break away from the fence posts. Caution: Do not over stretch or the fence will be damaged.
- More than one row of sediment fences may be required.
- Sediment fence spacing on slopes should be at no greater distance than:

Slope	Spacing
<10%	300 ft.
<15%	150 ft.
<20%	100 ft.
<30%	50 ft.
<50%	25 ft.
Stock Pile Slope >50%	25 ft.

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Maintenance:

Remove accumulated sediment frequently, and replace fabric at least every six months when exposed to fine clay sediment runoff. A more proactive approach would be to replace the sediment fence every 30 days when exposed to clay-silt-loam runoff. Do not allow sediment to accumulate behind the sediment fence any higher than 1/3 the above-ground height.

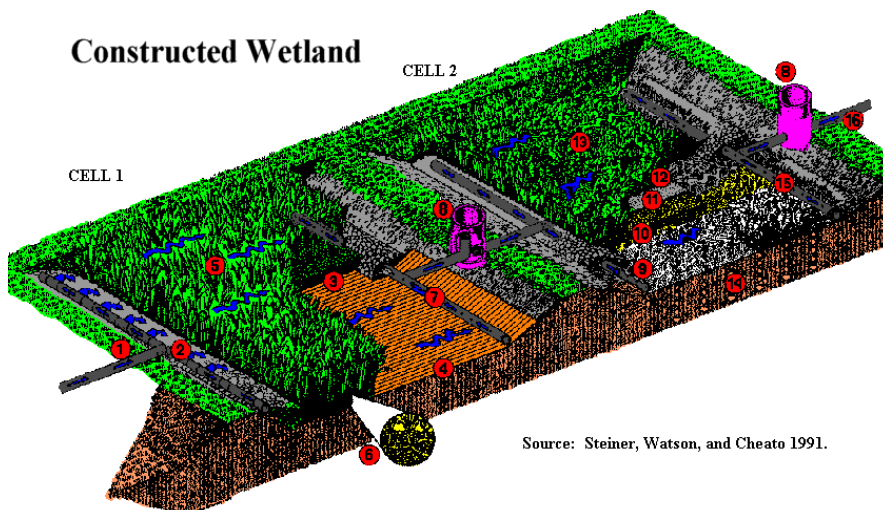


Sediment Fence

NTS

2.25 Constructed Wetlands

For further information on Wetlands see the Biofilters document at:
<http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>.



Source: Steiner, Watson, and Cheato 1991.

Description:

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Constructed wetlands are man-made, engineered wetland areas created through a combination of excavation and/or berming. The basic types of constructed wetlands are shallow marsh, 2- or 3-celled pond/marsh, extended-detention wetland, and pocket wetland. Extended-detention and pocket wetlands are less effective in removal of some types of pollution than other types of wetlands. Wetlands are particularly effective for the removal of nutrients and conventional pollutants such as oil and grease and some heavy metals.

Design Considerations:

- Constructed wetlands are suitable for larger sites, up to 100 acres where there is insufficient length to construct a settling pond with bioswale.
- Constructed wetlands cannot be used in areas with shallow depth to bedrock or unstable slopes.
- Constructed wetlands have larger land requirements for equivalent service compared to wet ponds.
- Hydrologic factors (flow) are very important in siting and designing wetlands, because constructed wetlands are complex, have a substantial amount of vegetation, and are relatively shallow with a large surface area. There must be enough flow to provide an adequate, ongoing water supply for wetland plants. However, flows must not be so high that they overwhelm wetland processes.
- Constructed wetlands need to have a shallow marsh system to deal with nutrients.
- Utilize a wetland specialist for selection of vegetation.
- There is a delayed efficiency until plants are well established (1 to 2 seasons).
- Water level fluctuations can kill plants.
- Constructed wetlands have relatively high construction costs.
- Constructed wetlands have relatively low maintenance costs.

Design and Construction Specifications:

- Design wetlands as a flow through facility, with a flat bottom to facilitate sedimentation.
- Include a method of quickly getting the concentrated inflow to full wetland width and to then collect the flow back to the concentrated outflow. This ensures that short circuiting does not occur and maximizes the retention time - qualities needed for the wetland to be effective.
- Construct the permanent pool depth between 3 to 6 feet, plus one foot of dead storage for sediment. Six feet is the maximum depth or the pond will stratify in summer and create low oxygen conditions which result in the re-release of phosphorus and other pollutants. In addition, if the pond is deeper than 6 feet wetland plant selection is more difficult.
- The best wetlands design is multi-celled, preferably three cells of equal sizes. Make the first cell 3 feet deep to trap coarse sediments and slow turbulence.
- Include an overflow system/emergency spillway to deal with a 100 year 24 hour flood, and a gravity drain.
- Pond embankments over 6 feet high should be designed by a registered engineer.
- Construct berm tops be 15 feet wide for maintenance access.
- Constructed wetlands need a buffer width of 25 to 50 feet.

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- Test soils to determine suitability, particularly when located in clay loams, silty clay loams, sandy clays, silty clays and clays. This is to ensure that enough water retention occurs to maintain wetland plants.
- For mosquito control, either stock the pond with fish or allow it to be drained for short periods of time (do not kill the marsh vegetation).
- Fence off for safety and to protect plants and wildlife.

Maintenance:

Maintenance is of primary importance. The person responsible for site operations must be the responsible party for maintaining the wetland. Develop a maintenance plan that addresses removal of dead vegetation (that release nutrients) prior to the winter wet season, debris removal from trash racks, and sediment monitoring in forebays and in the basin. Because sediments are likely to contain significant amounts of heavy metals and organics, regular testing is advised.

2.26 Flocculants and Coagulants

Description:

Turbidity may be caused by particulates which require an extended period of time to settle out due to their very small size, often much less than 0.001 mm in diameter. Removal of these small particles by settling alone is not practical. Polymers and inorganic chemicals speed the process of clarification.

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Cationic polymers can be used as primary coagulants to reduce turbidity in stormwater. Inorganic chemicals such as aluminum or ferric sulfate and aluminum or ferric chloride can also be used. The added chemical destabilizes the suspension and causes the smaller particles to agglomerate into larger particles referred to as “floc” which settle more rapidly. The process consists of three steps: coagulation, flocculation, and settling or clarification.



Treatment systems typically require constant adjustment in order to not under or over flocculate the runoff. Under-flocculation can result in carryover of the particulate through the discharge of the treatment system and thus to the receiving waters. Over-flocculation may discharge the flocculant, with adverse effects on aquatic life, including death of organisms.

The following textbooks contain detailed presentations on this subject:

- Fair, G., J. Geyer and D. Okun, Water and Wastewater Engineering, Wiley and Sons, NY, 1968.
- American Water Works Association, Water Quality and Treatment, McGraw-Hill, NY, 1990.
- Weber, W.J, Physiochemical Processes for Water Quality Control, Wiley and Sons, NY, 1972.

FLOCCULATION SYSTEMS MUST BE DESIGNED BY KNOWLEDGEABLE PERSONNEL. A CONSULTANT SHOULD BE CONTRACTED TO DEVELOP AND IMPLEMENT A SYSTEM. OPERATING PERSONNEL MUST BE SPECIFICALLY TRAINED TO OPERATE THESE SYSTEMS.

Direct Soil Application of Flocculant:

As an alternative to an extensive flocculation system, a polyacrylamide (PAM) can be applied to the bare soil surface to bind the soil particles together and minimize erosion, and promote infiltration. PAMs are long chains of polymers synthesized from natural gas. Until recently, PAM has been used most frequently on agricultural land as a soil conditioner, but its use has expanded to include construction sites and industrial water treatment. Since it is a flocculant, it may cause silt deposition when it comes in contact with sediment laden waters downstream from the site. For this reason, runoff should be collected and treated to remove the chemical before releasing it from the site.

The City of Redmond, Washington successfully tested this method on at least two construction sites of 3,000 square feet of clay soils. The PAM was applied at a rate of three pounds per acre, a level that was determined to be environmentally non-toxic, and spread dry with a hand held fertilizer spreader. The City of Redmond recommends that

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periodic bioassays be performed to confirm the absence of toxicity.

Design Considerations:

It may not be possible to fully incorporate all of the design considerations at a particular location because of practical limitations at construction sites. Nonetheless it is important to recognize the following:

- Use the right polymer at the right dosage. A dosage that is either too low or too high will not produce the lowest turbidity. There is an optimum dosage rate, and more is not always better.
- Rapidly mix the coagulant into the water to ensure proper dispersion.
- A distinct flocculation step is important to increase the rate of settling, to produce the lowest turbidity and to keep the dosage rate as low as possible.
- Too little energy input into the water during the flocculation stage results in floc that is too small and/or insufficiently dense. Too much energy can rapidly destroy floc as it is formed.
- Since the volume of the basin is a determinant in the amount of energy per unit volume, a basin can be too big relative to the size of the energy input system.
- Care must be taken in the design of the withdrawal system to minimize outflow velocities.

In practice, the only way to determine whether a polymer is effective for a specific application is to perform preliminary or on-site testing. Polymer effectiveness can degrade with time and also from other influences. Thus, manufacturers' recommendations for storage must be followed.

Application of coagulants and flocculant-aids at the appropriate concentration or dosage rate for optimum turbidity removal is important for management of chemical cost, as well as for effective performance. The optimum dose in a given application depends on several site-specific features. The turbidity of untreated water is a primary determinant. The surface charge of particles to be removed is also important. Environmental factors that can influence dosage rate are water temperature, pH, and the presence of constituents that consume or otherwise affect polymer effectiveness (for example, color, oils). Preparation of working solutions and thorough dispersal of polymers in water to be treated is also important to establish the appropriate dosage rate. A well-managed treatment system is extremely important.

Number of treatment cells:

It is far better to have two treatment cells rather than one. With two cells, if something goes wrong with the treatment of a particular batch, treatment can continue in the second cell while addressing the problem in the first cell. In addition, because it takes time to empty the cell after treatment, while one cell is being emptied, the other can be filled and treated. Finally, there is always uncertainty over the time required to achieve satisfactory clarification. If one had confidence that satisfactory settling could be achieved consistently within 30 to 60 minutes, it might be reasonable to conclude that only one cell is needed, since turnover could occur rapidly. Using two treatment cells thus helps ensure that there is always storage available for incoming flow.

Volume of treatment cells:

When determining the volume per cell, there are two opposing considerations. A large cell is desirable to treat a large volume of water each time a batch is processed. However, the larger the cell the longer the time required to empty the cell. It is also possible that in

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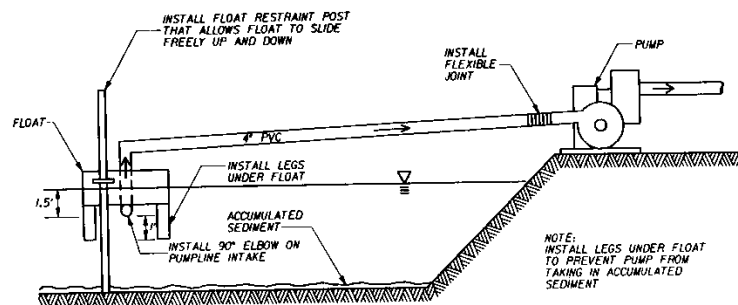
a larger the cell the flocculation process will be less effective, resulting in longer settling times. The simplest approach to sizing the treatment cell is to multiply the allowable discharge rate by the desired draw-down time. A good rule of thumb is to allow about four hours for draw-down.

A four-hour draw-down time allows one batch to be processed in each cell during an eight-hour work period. A batch can be prepared in the morning, including an hour or so of flocculation, about two hours of settling, and then discharge (although discharge could occur after hours). Or a batch can be prepared in the afternoon, followed by settling overnight, with discharge the following morning. Whatever timing is used, a logical approach is to size the cell to fit the desired draw-down time, constrained by the allowable release rate.

Flow control, inlets and outlets:

Currents in the treatment cell can reduce settling efficiency. Currents can be produced by wind, by differences between the temperature of the incoming water and the water in the settling pond or tank, by differences in the temperature in the upper and lower portions of the settling containment (in low flow conditions), and by flow conditions near the inlets and outlets. Calm water such as that which occurs during batch clarification provides a good environment for effective performance, as many of these factors become less important in comparison to flow-through settling basins. The use of four rather than one inlet pipe reduces the inlet velocity. Reduced inlet velocity reduces the possibility that sediments will be picked up and discharged. Flow leaving the settling unit is an important source of currents in batch systems. Because flocs are relatively small and light, the exit velocity of the water must be as low as possible. Sediment on the bottom of the basin can be resuspended and removed by fairly modest velocities.

Design the withdrawal device used for removing the liquid from the settling pond to avoid pulling settled sediments from the bottom of the treatment cell. One approach is to place the discharge outlet near the area where treated water enters the cell. At this location there will be relatively little accumulation of solids because of the turbulence created by the incoming water. A second approach is to use the float configuration as shown in the diagram below.



FLOATING PUMPLINE INTAKE (TYP.)

A third approach is to modify the float to include a square or circular weir that the water enters before reaching the outlet pipe. Weirs reduce the exit velocity of the water leaving the clarification area of the cell. For example, a weir with 10 feet of circumference would significantly reduce the flow rates (velocity) over the weir. Another example is used in

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water and wastewater clarifiers that include what is known as effluent launders. These are long troughs, placed at the outlet end the clarifier or around the outside circumference in the case of circular clarifiers, into which the water flows.

The weir may provide at least one and possibly two benefits with the treatment of stormwater. First, by reducing the carry-out of floc that is still settling while the cell is being drawn down, it could result in lower effluent turbidities and/or allow a reduction in the settling time to achieve the same effluent turbidity. Secondly, the weir could reduce if not eliminate the tendency for the withdrawal pipe to discharge previously settled sediment.

Flocculant Example

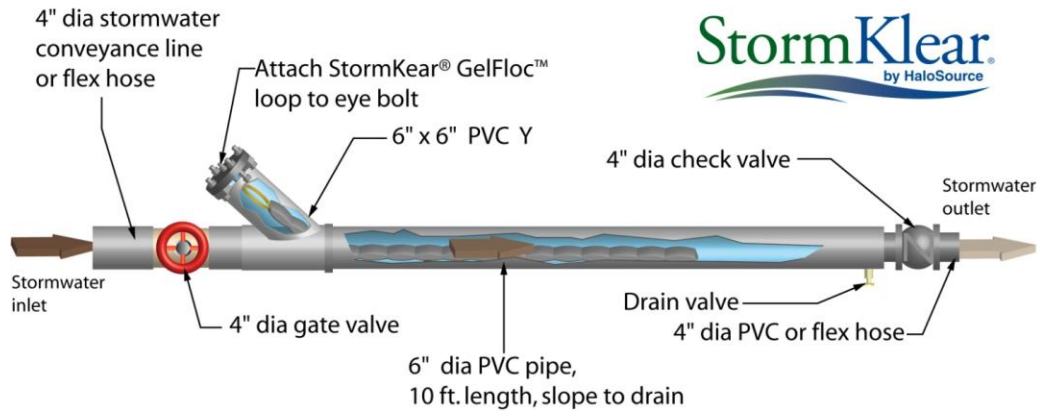
The following example illustrates treatment considerations common to most flocculant systems. There is a flocculant made from crab and shrimp shells call Chitosan¹, available as a liquid or a solid. The solid form is packaged in a multi-chambered sock for placement inside of a pipe where the stormwater runoff will flow around it, dissolving the amount of flocculant needed to settle out sediments and turbidity. Settling is readily apparent after five minutes of retention time.



Chitosan Sock (Left) and Treated high turbidity sample after five minutes (Right)

¹ Use of trade names is for illustrative purposes only and should not be construed as a DEQ endorsement of a particular product.

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© 2007 HaloSource, Inc. StormKlear is a registered trademark of HaloSource, Inc. GelFloc is a trademark of HaloSource, Inc.

The diagram below depicts a single pipe system for use of the Chitosan GelFloc® Sock before a tank. If the turbidity is very high a parallel pipe splitting half of the flow may be needed in order to provide sufficient Chitosan for the loading.



Chitosan Treatment System with Sand Filter

The system in the photo above adds a sand filter to remove the suspended solids when the retention time is less than the minimum to obtain full settling. The larger particles formed which have not settled out will be trapped by the sand filters.

2.27 ElectroFloc

Description:

Experiments with a process tentatively called ElectroFloc indicate that it may be possible to use electricity to floc dissolved metals, TSS, and turbidity from stormwater runoff. Charging aluminum plates with about 40 volts DC in a batch process has been shown to create an approximately equal number of positively and negatively charged particles in suspension. These dissimilarly charged particles attract each other and due to aluminum ions present remain in contact with each other in as little as five minutes per liter. This works for TSS and turbidity in the lab and should work for dissolved metals as the metals usually are not really dissolved but submicron in size. Dissolved oxygen is increased in the water due to the splitting of the water molecule into hydrogen and oxygen.



Laboratory Test Cell

Flocculated turbidity can be seen forming between the plates.

2.28 Concrete and Asphalt Production

Description:

Asphalt application can contribute high levels of toxic hydrocarbons, oils and greases, and heavy metal to runoff. Concrete pouring can contribute suspended solids and heavy metals to stormwater runoff and cause pH increases in receiving waters.

Design Considerations:

- Use drip pans, ground cloths and perhaps even heavy cardboard or plywood wherever concrete, asphalt and asphalt emulsion chunks and drips are likely to fall, such as beneath extraction points from mixing equipment.
- Place storm drain covers over all nearby drains at the beginning of the workday. Catch basin inserts or other suitable protection may also be used.
- Collect all accumulations with a shovel for proper disposal at the end of the workday.
- Contain and collect the slurry from exposed aggregate washing, where the top layer of unhardened concrete is hosed or scraped off to leave a rough finish. Use a cover to

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protect storm drains.

- Designate a washout area on-site where cleaning of concrete trucks, troughs, and pumps can take place and where the rinse water is controlled in an infiltration sump on-site.
- If possible, cover portable asphalt mixing equipment with an awning to avoid contact with rainfall.

Maintenance:

- Sweep the pouring area, if it is paved, at the end of each day to collect loose aggregate particles. Do not hose down the area to a storm drain.
- If the concrete truck washout area (pit) is full, then either relocate it to an area that infiltrates better or remove the excess liquid and properly dispose of it.

2.29 Concrete Truck Washout and Cleanup



Description:

Cleanup from the chute and other equipment from a concrete truck after emptying can cause high pH in stormwater runoff and can fill catch basins and storm sewer piping with fine particles. BMPs are needed to remove this material.

Concrete Washout Area

This approach uses an infiltration pit or collects the washout material in a tank. Select an area of the site for the washdown activities from concrete truck. Size the pit based on the infiltration rate of the soil and the anticipated usage rate (an estimated two gallons of water is needed per concrete truck chute washout), in which the residual concrete, aggregate, and water would settle and infiltrate. The area should also be on rock so that the truck does not become stuck. The washout will occur from directly behind the truck. It is a good idea to use a graveled road or parking area that may or may not become paved later. With care to prevent or minimize loss from carryover or splash-over, the use of a pit can neutralize the high pH with the low pH soil contact and virtually eliminate this particulate runoff issue.

Recycling System:

A recycling system, similar to that shown in the photograph on the right above, can be added to the concrete truck to catch the wash-down materials and pump them back into the truck for transport back to the concrete batch plant for recycling. Benefits of using a truck mounted recycling system include that the concrete trucks do not have to relocate from the pouring area to perform clean-up, and that the material washed off is recycled.

2.30 Above-ground Storage Tanks

Description:

Tanks used on construction sites to refuel construction vehicles need to have secondary containment. The tank shown on the left is held in place by earthen berms and is a single walled tank. Notice the darker stained soil in front of the tank. Keep the hose inside of a contained area when not in use so that any residual fuel in the hose does not leak out into the soil and thus to stormwater runoff.



A containment pallet similar to the one shown on the right could provide the secondary containment needed. The amount of rainfall on the small surface area involved with the tank and pallet would not accumulate significant amounts of stormwater to be of concern. A plastic sheeting roof over the containment area can be erected to reduce even this amount of stormwater contact.



Maintenance:

- Check containers daily for leaks and spills. Replace containers that are leaking, corroded, or otherwise deteriorating.
- Collect all spilled liquids and properly dispose of them.
- Sweep and clean the storage area monthly if it is paved; never hose down the area to a storm drain.

2.31 Container and Waste Storage

Description:

This BMP refers to containers located outdoors and used to temporarily store materials, such as accumulated food wastes, paints, oils, vegetable or animal grease, solvents, and waste materials. If the construction site has container storage of materials in an outdoor location, consider using a portable building. These storage buildings have secondary containment, can be sprinklered, and can be heated or cooled to control the temperature of the materials. The doors typically can be locked for secure storage. The fuel tank from the previous BMP could be placed in one of these buildings.

Design Considerations:

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Segregate and securely store incompatible or reactive materials in separate containment areas in order to prevent the mixing of chemicals should spills occur.

Maintenance:

Sweep the area regularly, if paved, to collect dirt and debris; never use water to hose down the area into a storm drain.

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<http://www.universalsystemsinc.net/electrocoagulation.html>
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APPENDIX E

Land Use Compatibility Statement



Land Use Compatibility Statement

What is a Land Use Compatibility Statement?

A LUCS is a form developed by DEQ to determine whether a DEQ permit or approval will be consistent with local government comprehensive plans and land use regulations.

Why is a LUCS required?

DEQ and other state agencies with permitting or approval activities that affect land use are required by Oregon law to be consistent with local comprehensive plans and have a process for determining consistency. DEQ activities affecting land use and the requirement for a LUCS may be found in Oregon Administrative Rules (OAR) Chapter 340, Division 18.

When is a LUCS required?

A LUCS is required for nearly all DEQ permits and certain approvals of plans or related activities that affect land use prior to issuance of a DEQ permit or approval. These permits and activities are listed in section 1.D on p. 2 of this form. A single LUCS can be used if more than one DEQ permit or approval is being applied for concurrently.

Permit modifications or renewals also require a LUCS when any of the following applies:

1. Physical expansion on the property or proposed use of additional land;
2. Alterations, expansions, improvements or changes in method or type of disposal at a solid waste disposal site as described in OAR 340-093-0070(4)(b);
3. A significant increase in discharges to water;
4. A relocation of an outfall outside of the source property; or
5. Any physical change or change of operation of an air pollutant source that results in a net significant emission rate increase as defined in OAR 340-200-0020.

How to complete a LUCS:

Step	Who does it?	What happens?
1.	Applicant	Applicant completes Section 1 of the LUCS and submits it to the appropriate city or county planning office.
2.	City or County Planning Office	City or county planning office completes Section 2 of the LUCS to indicate whether the activity or use is compatible with the acknowledged comprehensive plan and land use regulations, attaches written findings supporting the decision of compatibility, and returns the signed and dated LUCS to the applicant.
3.	Applicant	Applicant submits the completed LUCS and any supporting information provided by the city or county to DEQ along with the DEQ permit application or approval request.

Where to get help:

For questions about the LUCS process, contact the DEQ staff responsible for processing the permit or approval. DEQ staff may be reached at 1-800-452-4011 (toll-free, inside Oregon) or 503-229-5630. For general questions, please contact DEQ land use staff listed on our [Land Use Compatibility Statement page](#) online.

Cultural resources protection laws:

Applicants involved in ground-disturbing activities should be aware of federal and state cultural resources protection laws. ORS 358.920 prohibits the excavation, injury, destruction, or alteration of an archeological site or object or removal of archeological objects from public and private lands without an archeological permit issued by the State Historic Preservation Office. 16 USC 470, Section 106, National Historic Preservation Act of 1966 requires a federal agency, prior to any undertaking, to take into account the effect of the undertaking that is included on or eligible for inclusion in the National Register. For further information, contact the State Historic Preservation Office at 503-378-4168, ext. 232.

Land Use Compatibility Statement

Section 1 – To be completed by the applicant

1A. Applicant Name: Glen van Treek	1B. Project Name: Grassy Mountain Gold Mine
Contact Name: Garrett Stephenson	Physical Address: N/A
Mailing Address: 1211 SW Fifth Avenue, Ste 1900	City, State, Zip: Vale, OR 97918
City, State, Zip: Portland, OR 97204	Tax Lot #: 100, 101
Telephone: 503-796-2893	Township: 22S Range: 44E Section:
Tax Account #:	Latitude:
	Longitude:

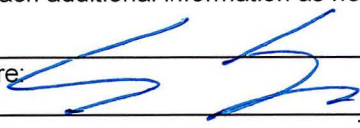
1C. Describe the project, include the type of development, business, or facility and services or products provided (attach additional information if necessary):

Gold and silver mine (to be located on tax lot 101); Mineral processing facility, tailings storage facility, waste rock facility, and accessory roadway improvements, and other facilities (located on tax lot 100) to support gold and silver mine.

1D. Check the type of DEQ permit(s) or approval(s) being applied for at this time.

☐ Air Quality Notice of Construction	☐ Clean Water State Revolving Fund Loan Request
☒ Air Contaminant Discharge Permit	☐ Wastewater/Sewer Construction Plan/ Specifications (includes review of plan changes that require use of new land)
☐ Air Quality Title V Permit	☐ Water Quality NPDES Individual Permit
☐ Air Quality Indirect Source Permit	☒ Water Quality WPCF Individual Permit (for onsite construction-installation permits use the DEQ Onsite LUCS form)
☐ Parking/Traffic Circulation Plan	☒ Water Quality NPDES Stormwater General Permit (1200-A, 1200-C, 1200-CA, 1200-COLS, and 1200-Z)
☐ Solid Waste Land Disposal Site Permit	☐ Water Quality General Permit (all general permits, except 600, 700-PM, 1700-A, and 1700-B when they are mobile)
☐ Solid Waste Treatment Facility Permit	☐ Water Quality 401 Certification for federal permit or license
☐ Solid Waste Composting Facility Permit (includes Anaerobic Digester)	
☐ Conversion Technology Facility Permit	
☐ Solid Waste Letter Authorization Permit	
☐ Solid Waste Material Recovery Facility Permit	
☐ Solid Waste Energy Recovery Facility Permit	
☐ Solid Waste Transfer Station Permit	
☐ Waste Tire Storage Site Permit	
☐ Pollution Control Bond Request	
☐ Hazardous Waste Treatment, Storage or Disposal Permit	

This application is for: ☐ Permit Renewal ☒ New Permit ☐ Permit Modification ☐ Other:

Section 2 – To be completed by city or county planning official		
Applicant name: Glen van Treek	Project name: Grassy Mountain Gold Mine	
Instructions: Written findings of fact for all local decisions are required; written findings from previous actions are acceptable. For uses allowed outright by the acknowledged comprehensive plan, DEQ will accept written findings in the form of a reference to the specific plan policies, criteria, or standards that were relied upon in rendering the decision with an indication of why the decision is justified based on the plan policies, criteria, or standards.		
2A. The project proposal is located: ☐ Inside city limits ☐ Inside UGB ☒ Outside UGB		
2B. Name of the city or county that has land use jurisdiction (the legal entity responsible for land use decisions for the subject property or land use):		
2C. ☐ This project is not within the jurisdiction of any other land use, zoning, or planning entity US Bureau of Land Management ☒ This project is also within the jurisdiction of the following land use, zoning, or planning entity		
2D. Is the activity allowed under Measure 49 (2007)? ☒ No, Measure 49 is not applicable ☐ Yes, if yes, then check one:		
☐ Express; approved by DLCD order #:		
☐ Conditional; approved by DLCD order #:		
☐ Vested; approved by local government decision or court judgment docket or order #:		
2E. Is the activity a composting facility? ☒ No ☐ Yes; Senate Bill 462 (2013) notification requirements have been met.		
2F. Is the activity or use compatible with your acknowledged comprehensive plan as required by OAR 660-031? Please complete this form to address the activity or use for which the applicant is seeking approval (see 1.C on the previous page). If the activity or use is to occur in multiple phases, please ensure that your approval addresses the phases described in 1C. For example, if the applicant's project is described in 1C. as a subdivision and the LUCS indicates that only clearing and grading are allowed outright but does not indicate whether the subdivision is approved, DEQ will delay permit issuance until approval for the subdivision is obtained from the local planning official.		
☐ The activity or use is specifically exempt by the acknowledged comprehensive plan; explain:		
☐ Yes, the activity or use is pre-existing nonconforming use allowed outright by (provide reference for local ordinance):		
☐ Yes, the activity or use is allowed outright by (provide reference for local ordinance):		
☐ Yes, the activity or use received preliminary approval that includes requirements to fully comply with local requirements; findings are attached.		
☒ Yes, the activity or use is allowed; findings are attached.		
☐ No, see 2D. above, activity or use allowed under Measure 49; findings are attached.		
☐ No, (complete below or attach findings for noncompliance and identify requirements the applicant must comply with before compatibility can be determined): Relevant specific plan policies, criteria, or standards:		
Provide the reasons for the decision:		
Additional comments (attach additional information as needed):		
Planning Official Signature: 		Title: Planning Director
Print Name: Eric Evans	Telephone #: 541-473-5185	Date: 2/27/2023
If necessary, depending upon city/county agreement on jurisdiction outside city limits but within UGB:		
Planning Official Signature:		Title:
Print Name:	Telephone #:	Date:

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.



MALHEUR COUNTY PLANNING DEPARTMENT

251 B Street West, #12 Vale, Oregon 97918

Phone (541)473-5185

To Whom it may Concern:

The County approved the Grassy Mountain Mine project on May 23, 2019. This decision granted a conditional use permit for a mine on tax lot 101 of Malheur County Assessor's Map no. 22S 44E. The County issued a land use compatibility statement for this permit on July 30, 2019. The County took the position that, because the surrounding land is owned and managed by the U.S. Bureau of Land Management (BLM), it did not have the regulatory authority to grant or withhold land use authorizations on the lands surrounding the mine's patent parcel. However, the application included complete descriptions of the mine facilities on surrounding lands and the decision considered whether or not the mine project as a whole satisfied the applicable criteria on both federal and private lands.

Calico Resources USA Corp has requested a second land use compatibility statement (LUCS) in order to support its application for a DOGAMI Consolidated Permit, which would address land uses related to the mine facilities on BLM lands, identified as tax lot 100 of Assessor's Map No. 22S 44E. The attached materials include findings from the Planning Commission explaining why the mine project as a whole meets all applicable criteria. These findings adopted by reference the application and staff report, among other documents, which addressed the entire project area, including the processing facilities on federal land. See, for example, the Commission's discussion on page 10 of the final findings and decision (attached).

Therefore, while the County has issued a conditional use permit for activities on tax lot 101 only, it has found that the mine site as a whole, including the BLM land components, satisfy the applicable criteria in the Malheur County Code, which implements the County's acknowledged comprehensive plan.

Please let me know if you have any questions.

Sincerely,

Eric Evans, REHS
Planning Director,
Malheur County Planning and Zoning
251 B Street W #12
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Planning Department File No. 2019-01-001

**THE PLANNING COMMISSION'S RECOMMENDATION ON THE SAGE GROUSE
RULE PERMIT WILL BE CONSIDERED BY THE MALHEUR COUNTY COURT IN A
HEARING SCHEDULED FOR JUNE 26, 2019 AT 9:00 AM IN ROOM 106 AT THE
MALHEUR COUNTY COURTHOUSE, 251 B STREET W, VALE, OREGON**

- c. Applicable criteria for a Sage Grouse Rule Permit are set forth in OAR 660-023-0115(10).

7. **APPEAL OF CONDITIONAL USE PERMIT:**

- a. Appeals of the approved Conditional Use Permit will be heard by the Malheur County Court. **APPEALS MUST INCLUDE A COMPLETED APPEAL FORM** (available at www.malheurco.org/planning-department) **AND A \$200.00 FEE, AND MUST BE SUBMITTED IN HARD COPY TO THE PLANNING DEPARTMENT BY 5:00PM ON THE TENTH (10TH) CALENDAR DAY FOLLOWING THE DATE OF MAILING OF THIS NOTICE.** The Planning Department is located at 251 B St. W. Vale, OR 97918.
- b. Appeals may not be received by fax or email. The appeal notice must explain all issues relied upon for the appeal with sufficient specificity to afford the County Court an adequate opportunity to respond to each issue. Appeals shall be based on the Planning Commission decision record. Appellant must pay and submit a transcript of the Planning Commission hearing(s) to the Planning Department within ten days after the date of notice of appeal is filed or ten days after the hearing tape is provided to appellant, whichever is later.
- c. NOTE: The Sage Grouse Rule Permit is not subject to appeal until after a final decision on this matter is made by the Malheur County Court on June 26, 2019.



Eric Evans
Planning Director
Malheur County
251 B Street W #12
Vale, OR 97918
541-473-5185

5/24/19
Date of Mailing

BEFORE THE PLANNING COMMISSION

FOR MALHEUR COUNTY, OREGON

In the Matter of Applications for Conditional Use Permit pursuant to the Malheur County Code (“MCC”) and Sage Grouse Rule Permit pursuant to OAR 660-023-0115, to establish an underground gold mine on property identified as tax lot 101 of Malheur County Assessor’s Map 22S 44E.

FINAL FINDINGS OF FACT AND CONCLUSIONS OF LAW

I. INTRODUCTION

Calico Resources USA Corp. (“Calico”) proposes an underground gold and silver mine on private land zoned for Exclusive Range Use (“ERU”), and is known as the “Grassy Mountain Gold Project” (the “Project”). Conditional Use Permit (“CUP”) and Sage Grouse Permit (“SGP”) applications (together, the “Applications”) were submitted on January 14, 2019. The project is proposed on an approximately 62-acre parcel (the “Patent Parcel”) located roughly 22 miles south of Vale, which is surrounded by federal land administered by the Bureau of Land Management (“BLM”). The Patent Parcel is identified as tax lot 101 of Malheur County Assessor’s Map 22S 44E. The Patent Parcel is coterminous with Calico’s patented mining claims and is the subject of the Application. The Patent Parcel is accessed via Russel Road, Cow Hollow Road, and Twin Springs Road.

The Project is described in the Application as follows:

“The Project will involve several elements: the mine site itself and its entry portal, which are located on the Patent Parcel; a processing facility; a tailings storage facility; a waste rock storage facility; borrow pits for production of backfill rock; and various support and administrative buildings. The entire Project Area will be fenced. Of these facilities, only the mine portal and related elements will be located on the Patent Parcel surface (the mine itself will be located beneath the Patent Parcel).

[***]

“[D]evelopment on the Patent Parcel will primarily involve construction of a mine portal near the northwest corner, improved gravel surface roadways that will allow access to the mine portal/decline, ventilation shafts, and laydown/storage areas.” App. at 2-3.

The Applicant submitted a site plan showing the Project and proposed facilities on the Patent Parcel. App. Ex. 2.

The Planning Commission (the “Commission”) held a duly-noticed public hearing on March 28, 2019, which was continued to April 25, 2019. At the conclusion of the hearing, the Commission voted unanimously to approve the Applications.

II. PROCEDURAL HISTORY

The Applications were submitted on January 14, 2019 and deemed complete on February 13, 2019. Public Notice of the March 28 hearing was sent to the BLM, project opponents, and state and local agencies on March 4, 2019. Public notice of the March 28 hearing and its April 25 continuation were also posted on the County’s website, and published in the Ontario Argus Observer on April 5th. All application materials were made available in hard copy at the Planning Department offices and published on the County’s website.

A letter clarifying the positions of the Oregon Department of Fish and Wildlife and Department of Land Conservation and Development (together, the “State Agencies”) was received on March 25, 2019. On March 27, a 21-page letter and 563 pages of exhibits were submitted by the Oregon Natural Desert Association and 1000 Friends of Oregon (together, the “Opponents”). Opponents requested that the Commission deny the Applications, or, in the alternative, continue the hearing and/or hold the record open for fourteen days.

On March 28, the Planning Commission declared a quorum, opened the public hearing on the Applications, and read the disclosures required by ORS 197.763. No commissioner declared any ex parte contacts, biases, or conflicts of interest. No person challenged the qualifications of any commissioner to consider the Applications. Three individuals offered oral testimony in favor of the Application and one person testified in opposition. At the conclusion of the Applicant’s rebuttal testimony, the Applicant requested that the hearing be continued to the next scheduled Planning Commission. The Commission closed public testimony, deliberated on the continuance request, and announced that the hearing would be continued to April 25, 2019.

On April 22, the Applicant submitted a 26-page letter and approximately 300 pages of exhibits in response to Opponent's submittal. On April 23, the Applicant submitted bios and curricula vitae for its consultants. The same day, the County Road Master submitted a letter revising his recommendations for county road improvement. The Snake River Economic Development Alliance submitted a letter in support of the Application on April 24. The Commission received no other written testimony on the Applications.

At the continued hearing on April 25, 2019, the required declarations were re-read and the Commission re-affirmed its qualifications to consider the Applications. No person challenged a commissioner's qualifications to consider the Applications. The Commission accepted oral testimony from the Applicant and one individual who testified in favor of the Application. The Commission then closed the public hearing and asked further questions of staff. The Commission then deliberated on the Applications and unanimously voted to adopt staff's recommendation for approval, with conditions recommended by Staff.

III. DECISION

A. The requested Conditional Use Permit is APPROVED, subject to the following conditions:

- 1. The Applicant will subscribe to the Vale Rangeland Fire Protection Association.*
- 2. The Applicant shall collaborate with the Malheur County Sheriff's Office in regards to a security plan as well as law enforcement and emergency response plans.*
- 3. Any road improvements necessary to serve the Project must be constructed according to County design standards to the satisfaction of the County Road Master.*
- 4. The Applicant shall obtain approval for its reclamation plan from Oregon Department of Geology and Mineral Industries (DOGAMI) prior to beginning mining operations. Unless otherwise prohibited by DOGAMI, the Applicant may conduct pre-construction and construction activities prior to obtaining approval of its reclamation plan.*

B. The Commission hereby recommends that the County Court APPROVE the Sage Grouse Permit, subject to the following condition:

1. *The applicant shall comply with OAR Chapter 660, Division 023 and OAR Chapter 635, Division 140. The applicant must coordinate with ODFW and apply the mitigation hierarchy of avoidance, minimization and compensatory mitigation to address direct and indirect impacts of the development to low-density habitat for sage grouse. A compensatory mitigation plan shall be developed by the applicant and approved by the ODFW through DOGAMI's consolidated permit process (OAR Chapter 632, Division 37) and other applicable rules, including OAR Chapter 635, Division 420 and OAR Chapter 635, Division 415, prior to any construction or ground disturbing activities.*

IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW

A. Compliance with Applicable Criteria

The Commission hereby adopts and incorporates as part of its findings the Staff Report (**Exhibit 1**) and Application Narrative (**Exhibit 2**), and finds that these sufficiently explain how the Applications satisfy all applicable criteria. The Commission also hereby adopts and incorporates the Applicant's April 22 letter in response to Opponent's March 27 letter and oral testimony. **Exhibit 3.**

B. Response to Public Testimony

1. State Agency Testimony.

The State Agencies' March 25 letter raised the following concerns. Each concern is identified below and followed by the Commission's responsive finding(s).

- a. "Compensatory mitigation requirements consistent OAR Chapter 635, Division 140 must be attached to the County Decision as a condition of approval."

FINDING: The Commission finds that it need not accept or reject the above assertion because the Applicant voluntarily accepted the State Agencies' proposed condition, as follows:

"The applicant shall comply with OAR Chapter 660, Division 023 and OAR Chapter 635, Division 140. The applicant must coordinate with ODFW and apply the mitigation hierarchy of avoidance, minimization and compensatory mitigation to address direct and indirect impacts of

the development to low-density habitat for sage grouse. A compensatory mitigation plan shall be developed by the applicant and approved by the ODFW through DOGAMI's consolidated permit process (OAR Chapter 632, Division 37) and other applicable rules, including OAR Chapter 635, Division 420 and OAR Chapter 635, Division 415, prior to any construction or ground disturbing activities.”

The Commission observes that there appears to be insufficient evidence in the record to support a finding that sage grouse mitigation is necessary on the Patent Parcel for the reasons explained on page 22 of Applicant’s April 22 letter. However, to the extent ODFW determines that mitigation is required on the Patent Parcel, the Commission finds that such a requirements will be adequately enforced by the above condition.

- b. “The CUP application [...] does not sufficiently demonstrate how OAR 660-023-0115(10) and OAR 635-140-0025(2) and -0025(3) are satisfied.”

FINDING: The Commission finds that all applicable criteria in OAR 660-023-115(10) are satisfied as explained in the Staff Report. In addition, the Commission makes the following summary findings:

- There are no reasonable alternatives to locating the mine on the Patent Parcel because the resources sought to be mined are located beneath the Patent Parcel.
- The Project cannot avoid some limited impacts to the identified low-density habitat for the same reason.
- The proposed mine is dependent on geographic features found on the Patent Parcel – in this case, the resource geology of the Patent Parcel – and these features are not common at other locations. The Applicant has demonstrated based on substantial evidence, that the Patent Parcel contains the highest concentrations of valuable mineral resources within the Project Area and indeed, within all nearby mining claims, as explained on pages 41–55 of Application Exhibit 1. Furthermore, there is no evidence in the record of mineral resources of comparable value located entirely outside of mapped sage grouse habitat.
- The Proposed Mine and its related improvements (mine portal, ventilation shafts, circulation areas, backfill stockpile, backfill plant, and utilities) cannot be relocated to minimize impacts on low-density sage grouse habitat

because those locations are necessary to facilitate use of the mine design presented in the Application at Exhibit 1, pages 71–78. In this instance, relocating proposed facilities could involve changing the location of the mine portal and related backfill areas, existing and proposed circulation routes, and mine ventilation portals. The Commission observes that the mine’s proposed drift and fill dimensions “were defined to ensure underground stability” (Application Ex. 1, p. 71) and that the location of the above-mentioned facilities is related to the planned underground layout of the mine. The Commission finds that, in light of the obvious need to ensure the stability of the mine for safety reasons and, given the lack of evidence in the record demonstrating that a different mine design is feasible or appropriate, it is not feasible to further relocate proposed facilities on the Patent Parcel to minimize direct or indirect impacts on Sage Grouse.

In addition, the Commission adopts the following statement from the Applicant’s March 26 letter:

“For purposes of this Application, the County must apply the sage grouse rule to the Patent Parcel only. The patent parcel contains only a small sliver of “low-density” sage grouse habitat along its western edge. The Applicant’s Wildlife Report found no evidence of any sage grouse habitat within two miles of the boundary of the larger Project Area. The Application explains that [the] mine site may not be relocated to avoid the small low density habitat area, nor can it be developed differently to minimize impacts on that area. This is because the mineral resources are located only within the Patent Parcel.

The primary structure on the patent parcel, the mine portal, cannot be relocated because it must face the area where processing is proposed to be conducted. Therefore, there is no basis for a finding that the underground mine can be redesigned to “minimize” impact on sage grouse habitat. Moreover, the substantial evidence in the record demonstrates that the small portion of “low density” habitat on the Patent Parcel is not actually occupied by any sage grouse.”

In conclusion, the Commission finds that the SGP application satisfies OAR 660-023-0115(10) for the above reasons.

The Commission finds that ODFW regulations set forth in OAR 635-140-0025(2) and -0025(3) are not directly applicable to land use applications in the

County because OAR chapter 635 is not part of the rules implementing the Statewide Planning Goals, set forth in OAR chapter 660, and is not incorporated into the County's land use regulations. The Commission also finds that any project design or approval criteria that OAR chapter 635 might impose were not expressly incorporated into the County's land use regulations or OAR 660-023-0115(10). Indeed, the only provision in the Sage Grouse Rules that references chapter 635 is related to mitigation, which according to those rules, is imposed at the discretion of ODFW. OAR 660-023-0115(9)(b)(B).

- c. "The Applicant did not conduct a pre-application conference."

FINDING: The Commission finds that OAR 660-023-0115(8) provides only that an Applicant "should" conduct a pre-application conference, it does not *require* such a conference. The Commission further finds that the Applicant effectively conducted such a conference as explained in the Applicant's March 26 letter.

- d. "The access road bisects ODFW designated "big game winter range" for approximately five miles on the north end."

"ODFW recommends a condition of approval that requires bussing from Vale."

FINDING: The Commission adopts as its finding the following excerpt from the Applicant's March 26 letter:

"All roads leading to the Patent Parcel are already in place and a proposal for reconstruction of that road is not currently before the Commission. While Calico does intend to provide shuttles, potential changes to the processing area may make this more or less difficult. The Applicant's trip generation estimate is conservatively based on a "worst case scenario" in which each employee drives his or her own vehicle. Even under this scenario, trip generation is anticipated to be no more than 250 average daily trips, which is far below the County's 400 trip threshold for requiring a full transportation impact analysis. The state agencies have not identified any County criterion that the Application fails to meet that could only be met with this condition; therefore, the Commission can find that such condition is unnecessary."

The Commission does not recommend ODFW's requested condition for the above reasons.

- e. "ODFW and DLCD recommend the County include a condition of approval that Calico reapply to the County if there are inconsistencies identified or significant modifications."

FINDING: The Commission does not recommend such a condition of approval for the reasons stated in the Applicant's March 26 letter, excerpted below:

"[T]he agencies have not identified any basis in the County's Plan or land use regulations to require "reapplication." Similarly, they have not identified any provisions of the County's Plan or land use regulations that would require such a condition. [...].

Moreover, the condition is unnecessary: if the activity on the Patent Parcel changes with respect to any of the applicable County land use regulations, the County can review and approve a modification of the conditional use permit, provided that the permit is still valid."

The Commission also finds that such a condition would inappropriately delegate County authority to the State Agencies, which may or may not have the authority to unilaterally require changes to the Project during its review. The CUP application is subject to County land use standards. Unless project changes are of such magnitude so as to significantly change or diminish how the Application satisfies the County's applicable land use regulations, mitigation or other design modifications required by State Agencies should not serve to automatically invalidate permits issued by the County.

- f. "It is important to note that the [the Applicant's] Wildlife Resources Baseline Report is a draft report and has not yet been accepted [...] as part of the DOGAMI consolidated permitting process."

FINDING: The Commission finds that the Applicant's Wildlife Report is the best and indeed only site-specific evidence in the record demonstrating the nature and extent of wildlife and wildlife habitat on the Patent Parcel and the larger Project Area. The Commission finds that, because the Wildlife Report is site

specific and was updated a number of times based on field surveys conducted in 2013, 2014, 2017, and 2018 (Application Ex. 7 at 22), it is a more reliable depiction of onsite habitat than the GIS data upon which ODFW's habitat mapping is based. The fact that the State Agencies have not yet accepted the Wildlife Report is irrelevant to the criteria and does not reflect on the Report's value as substantial evidence supporting a conditional use approval. The Commission also observes that the State Agencies offered no evidence to rebut the Report's findings.

- g. "The CUP application includes narratives or statements that propose compliance or findings of fact to support County approval. DCLD and ODFW believe that the proposed actions are not sufficient, and recommend that the county adopt specific standards and conditions."

FINDING: The Commission rejects this argument for several reasons. First, it fails to identify any CUP criteria which the Application fails to meet. Second, it fails to identify which "proposed actions are not sufficient," and why. Third, it fails to explain which specific standards the County should adopt to ensure the Application meets the CUP criteria.

2. Opponent Testimony.

The Opponents' (Oregon Natural Desert Association and 1000 Friends of Oregon) March 27 letter raised a number of concerns. Each concern is identified below and followed by the Commission's responsive finding(s). In addition to those findings, the Commission adopts the Applicant's April 22, 2019 letter to the Commission as part of these findings. **Exhibit 3.**

a. Scope of the Application

Opponents argue that Applicant improperly constrains its responses to application criteria to activities on the Patent Parcel, and does not address the remainder of the Project Area. "ONDA and 1000 Friends suggest that the Planning Commission must consider the likely range of environmental and social impacts from all aspects of the proposed mining operation." In so arguing, Opponents cite the purpose of the MCC as including "promotion of a high quality environment and promotion of public health, safety and welfare." Opponents also argue that MCC 6-6-7-E and F require the Commission to evaluate the "effect of the proposed use on the stability of the community's social and economic characteristics and that a proposed use not interfere with traditional fish and wildlife use of habitats determined critical or sensitive in the fish and wildlife

protection plan for Malheur County,” and that “the applicant must provide additional and more detailed information about the entire project for the planning commission to adequately consider the suitability of the proposed use.”

FINDING: The Commission finds that the uses proposed in the Applications are on the Patent Parcel. The County does not have land use planning jurisdiction over federal lands, which are managed by the Bureau of Land Management (“BLM”) under the Federal Land Policy and Management Act (FLPMA), which imposes its own mandate for land use planning for BLM lands. 43 USC §1712. As the County does not have land use permitting jurisdiction on federal lands, the Applications’ approval would neither authorize nor prohibit processing and support activities on surrounding federal land.

Nonetheless, the Commission finds that the processing facilities shown on Application Exhibit 2 and discussed in the Application would likely satisfy the applicable criteria for several reasons, not the least of which is the sheer geographic isolation from any nearby occupied parcel. Indeed, evidence in the record demonstrates that the nearest private structure is over five miles away and separated from the site by substantial intervening geography, including Grassy Mountain itself. See App. at 30, Applicant’s April 22 letter at 15.

And, the Project as a whole would satisfy most if not all applicable CUP criteria as explained in the Application. Virtually every one of the Applicant’s responses apply to the Project generally. For example, responses to the Specific Criteria to Evaluate Suitability set forth in MCC 6-6-8 were based on the project as a whole. App. 30–35. So too were the Applicant’s responses to applicable Comprehensive Plan goals and policies (particularly those related to Goals 9, 11, and 12), with the possible exception of certain discussions of soil type and other Goal 5 resources, which are necessarily site-specific. App. 15–28. However, based on the Applicant’s Wildlife Report (App. Ex. 7) and Applicant’s April 22 letter at pages 19–22, the Commission finds that the Project as a whole satisfies 6-6-7-F and the County’s Goal 5 policies. Finally, the Commission finds that the project as a whole would satisfy all remaining General Criteria to Evaluate Suitability set forth in MCC 6-6-7 for the reasons stated in **Exhibits 1, 2, and 3**.

The Commission finds that the purpose statement of MCC 6-1-2 is not an applicable criterion.

As noted above, the Commission finds that the Application satisfies MCC 6-6-7-E and F as explained in the Staff Report (**Exhibit 1**), Application (**Exhibit 2**), and Applicant’s April 22 letter (**Exhibit 3**).

b. Application Completeness

The Commission finds that it has sufficient information upon which to find that the applicable criteria are met, including:

- A site plan (App. Ex. 2);
- A Wildlife Report (App. Ex. 7);
- Supporting GIS maps that identify the nearest apparently occupied dwellings and intervening topography;
- A water rights certificate;
- Excerpts of the Applicant's Preliminary Feasibility Study, which addresses geology, mining methods, Project design, utilities, water quality, and fire risk management (App. Ex. 1);
- A summary of the Applicant's operation, closure, and reclamation plans (App. Ex. 3);
- A TSF summary and study (Applicant's April 22 letter, Ex. 9 and 10);
- A geochemistry Summary and Report (Applicant's April 22 letter, Exs. 6 and 7);
- Information on the affected livestock allotment (Applicant's April 22 letter, Exs. 3 and 4);
- Detailed information on chemical processing, chemical waste management, and acid mine drainage prevention (Applicant's April 22 letter, Exs. 7, 8, 14, 15, and 16);
- Data on the potential social and economic effects of the Project (App. at 21-22, Applicant's April 22 letter at 15-18, Ex. 12);
- Written communications from the Vale Rangeland Fire Protection Association, County Environmental Health Department, Sheriff's Office, Road Master and Engineer, and Vector Control District.

c. Comprehensive Plan Goals and Policies

FINDING: the Commission adopts the Applicant's response to Opponents' arguments concerning Comprehensive Plan Goals and Policies stated on pages 9-

14. As explained therein, the Commission finds that the Application is consistent with the following Goals and Policies raised by Opponents, or that such Goals and Policies do not apply:

- Goal 3, Policies 1 and 2 are legislative mandates for County planning and do not apply to a quasi-judicial land use application.
- Goal 3, Policy 8 is satisfied for several reasons. First, there are no farming activities on or around the Project Area, and there is no evidence the record that any of the soils on the Patent Parcel or Project Area are suitable for farming. Second, the County finds that Opponents have not identified any legal basis upon which the County must consider either impacts to grazing uses on the Patent Parcel, which is owned by the Applicant, or the surrounding federal lands, which under FLPMA are managed for multiple uses (not just farm and grazing uses).

Even if the County must consider impacts of the project on surrounding grazing uses on federal land, it finds that the Project will neither force a significant change nor significantly increase the costs of such grazing operations. The project as a whole could potentially displace, at most, 0.7 percent of the maximum cattle and 0.75 maximum sheep Animal Unit Months (“AUMs”) in the Nyssa Grazing Allotment. Applicant’s April 22 letter at 10–11, Ex. 4. The Commission finds that such a worst-case scenario would have an insignificant effect on allowable grazing activities throughout the Nyssa Allotment.

The Commission also finds that the proposed fencing and water quality management methods will ensure that sheep and cattle do not stray into the Project Area and that their water sources will not be contaminated by the Project. This latter point is supported by the Applicant’s geochemical studies, water quality information discussed on pages 12–14 of the Applicant’s April 22 letter, and the Applicant’s oral testimony at the continued hearing on April 25, in which the Applicant clarified that the water table directly below the mine is below the lowest level of proposed mining.

Finally, to the extent that Policy 8 could be read to prohibit use of BLM open range for mining processing uses, it would likely be preempted by federal law.

- Goal 5, Policy 3, requires the County to “cooperate with other government agencies in the enforcement of mining regulations.” The County finds that approval of this Application does not affect how other government agencies will enforce their mining regulations and that DOGAMI did not submit any written or oral testimony claiming otherwise.
- Goal 5, Policy 1, which provides that “the county will continue to cooperate with local, state and federal agencies to identify the location, quality and quantity of fish and wildlife habitat” is a general land use planning policy and does not require any specific action or finding with respect to a conditional use permit application.
- Goal 5, Policy 4 provides that “the County will notify and consult with appropriate state agencies during review of development proposals that might affect surface or groundwater quality.” The Commission finds that the Application satisfies this Policy for the reasons stated in Applicant’s April 22 letter and observes that no state agency complained of a lack of notice of the Application.
- Goal 11, Policy 1 provides that the “County, in considering land use proposals, will ensure that the physical characteristics of land that affect sewage disposal, water supply, and water quality are carefully considered.” The Commission finds that the Application contains more than enough information for it to carefully consider the issues listed above, and it did so.

d. Specific Plan Applicability

FINDING: The Commission finds that there are no specific County plans applicable to the Patent Parcel and observes that Opponents did not identify any.

e. Viewpoints

FINDING: MCC 6-6-7-C requires the Commission to consider “existing development and viewpoints of property owners in the surrounding area.” The Commission finds that the project will not have any adverse impacts to views from existing development and property owners in the surrounding area for the reasons stated in the Application at page 25 and Applicant’s April 22 letter at 15.

f. Services and Utilities

FINDING: MCC 6-6-7-D requires the Commission to consider the “availability of services and utilities.” The Commission finds that the Applicant has sufficient water rights to provide adequate process water, based on the water rights certificate in the record. The Commission finds that Idaho Power has committed to providing service to the Patent Parcel based on a power purchase agreement referenced in the Staff Report. The Commission finds that testimony from the County Public Health Division indicates that the Applicant will be required to provide a septic system to treat any wastewater generated on the Project. The Commission finds that there is sufficient information in the record to demonstrate that the Project will be served by the Vale Rangeland Fire Protection Association and that the Project will have an on-site fire suppression system which includes fire hydrants, standpipes, and sprinkler systems. App. Ex. 1 at 91. Finally, the Commission finds that road access to the Patent Parcel is already in place, and that to the extent that the Project will require upgrading of County Roads, Condition 3 ensures that those improvements will be constructed to the satisfaction of the County Road Master. In so finding, the Commission relies on the written comments of the Road Master dated February 4 and April 23.

The Commission rejects Opponents’ assertions that the new power line extension will “entail significant impacts to wildlife and other resources” and that if “new right-of-way permits are sought and/or considered they must evaluate impacts to wildlife species and habitat along their length.” There is nothing in MCC 6-6-7-D which requires consideration of habitat areas, and certainly not habitat areas that are not designated in the County’s plan. And, Opponents make no attempt to identify a basis in the MCC or Comprehensive Plan supporting the premise that MCC 6-6-7-D requires a conditional use application to analyze the habitat impacts of linear infrastructure to be extended to serve the Project.

The Commission also rejects Opponents’ comments that joining the fire protection association may not be sufficient to address fires that might release cyanide because such comments do not appear to acknowledge the Applicant’s proposed onsite fire suppression system or explain how that system may be insufficient.

g. Social and Economic Effects

FINDING: The Commission finds that the Project is likely to have positive social and economic effects on Malheur County because it is anticipated to create approximately 110 mining jobs for the duration of the mine (14 years) and approximately 150 construction jobs. App. 27. The Commission also finds that these jobs are likely to lead to indirect job creation and other economic multipliers.

Applicant's April 22 letter at 16, Ex. 12. The Commission further finds that the Project is likely to have beneficial social and economic effects because of the jobs created and the relatively high wages of these jobs indicated by the Applicant.¹

These positive effects are necessarily balanced against any harmful environmental externalities potentially caused by the Project. However, the Commission finds that the environmental risks are relatively low given the closed-circuit chemical process proposed to be utilized, the water capture and treatment techniques proposed to be used, the methods required to prevent acid mine drainage (April 22 letter at 24–25), the proposed reclamation measures, and the sheer geographical separation of the Project from any population centers. See Applicant's April 22 letter, Exs. 7–10, 14–16.

Stated simply, the Commission finds nothing in the record which gives it a reason to believe that the Project will have negative health impacts on the County's populated areas. For these reasons, the Commission finds that on balance, the Project will have positive social and economic effects.

The Commission rejects Opponents' contrary arguments regarding MCC 6-6-7-E, which concern the "effect of the proposed use on the stability of the community's social and economic characteristics" for the reasons stated on pages 15–18 of the Applicant's April 22 letter. In so doing, the Commission finds that evidence offered by Opponents concerning the "boom and bust" impacts of mining dependent communities is not persuasive because there is no evidence that Malheur County is a "mining dependent community." In fact, evidence offered by Applicant indicates the opposite: as of 2016, Malheur County had only 24 employees in the mining industry. Applicant's April 22 letter at 16. The Commission specifically finds that the Freudenburg and Wilson article has little or no applicability in Malheur County for these reasons. Further, the Commission finds no evidence that the increase in these jobs by the 100 plus jobs potentially created by the Project will turn the County into a mining dependent community. And, the Commission finds that a positive economic impact is beneficial to the community even if it exists for a discrete amount of time (in this case, approximately 14 years). On the other hand, Opponents have not explained how the absence of the mine's positive economic effects will be more beneficial to the community.

¹ The Commission does not find Opponent's arguments that average wages anticipated by the Applicant cannot be relied upon because they are higher than the average wages for mining jobs; the Commission finds that the Applicant is the best source for information concerning the wages it intends to pay.

The Commission does not agree that the Project will cause affordable housing displacement for three reasons. First, there is no evidence that the Project will require all employees to be imported to the County—indeed, the Applicant’s stated intention is to establish workforce training in the County to provide opportunities for County residents. Although Opponents argued that the lack of mining jobs in Malheur County indicates the need to import employees from other markets, the County finds that workforce training would likely mitigate this.

Second, even if all employees come from outside of the County, the Commission finds no evidence that 110 new jobs will exacerbate a shortage of affordable housing and indeed, the average wage that the Applicant proposes to pay is unlikely to create an increased demand for subsidized housing because it exceeds the median household income of the County by more than \$40,000. Applicant’s April 22 letter at 18.

Third, the Commission finds that increased housing demand is not necessarily a negative socioeconomic impact to the extent that increased housing production constitutes a positive economic multiplier.

h. Fish and Wildlife Impacts

FINDING: MCC 6-6-7.F provides that conditional uses may not “interfere with traditional fish and wildlife use of habitats determined to be critical or sensitive in the fish and wildlife habitat protection plan for Malheur County.” ONDA argues that Calico has not “met its burden of showing that the proposal will not have a significant permanent adverse impact on fish or wildlife habitat.”

As an initial matter, the Commission agrees with the Applicant that “the question is not whether the Application will have a significant impact on fish and wildlife, it is whether it will affect habitats determined by the County to be critical or sensitive in its fish and wildlife protection plan.” Applicant April 22 letter at 19.

The Commission also finds that the County does not have a “fish and wildlife habitat protection plan” and that the Comprehensive Plan does not designate any critical or sensitive habitats on the Patent Parcel or Project Area. Therefore, the Commission finds that the above criterion does not apply.

Even if the Criterion did apply, the Commission finds that the Wildlife Report submitted by the Applicant demonstrates that there is no evidence of critical or sensitive wildlife habitat on the Patent Parcel that would otherwise be designated by the Comprehensive Plan. In fact, the Commission finds that the only habitat area on the Project Area designated by ODFW is greater sage grouse, the

protection of which is not required by the Comprehensive Plan or Land Use Regulations, and is separately addressed by OAR 660-023-0115.²

As noted by the Applicant in its April 22 letter, Opponent's arguments regarding ODFW's designated big game winter range are irrelevant because none of that range is identified on the Patent Parcel or Project Area, and Opponents have not explained why public improvements outside of the Project Area must be analyzed for impacts on winter range. Similarly, the Commission finds that the criteria do not require analysis of federal wildlife issues related to the Migratory Bird Treaty Act or pygmy rabbits.

Finally, the Commission finds that ODFW's mitigation policy set forth in OAR 635 division 415 is not an applicable criterion for each of the reasons stated on page 20 of the Applicant's April 22 letter.

i. Sage Grouse Permit

FINDING: Opponents argue that "the Wildlife Report uses an inapplicable procedure for characterizing sage-grouse habitat within the Project Area" and that the Applicant should have been required to apply ODFW's "Sage Grouse Development Siting Tool." The Commission rejects this argument for the reasons stated in its response to the State Agencies' comments regarding the Application's consistency with the Sage Grouse Rules, above. The Commission also finds that nothing in the findings required by OAR 660-023-0115(10) require the County to apply ODFW's Sage Grouse Development Siting Tool.

j. Specific Criteria to Evaluate Suitability

FINDING: Opponents raised a number of arguments concerning the Specific Criteria to Evaluate Suitability in MCC 6-6-8-4, which require that "submitted plans and specifications shall contain sufficient information to allow the planning commission to set standards" concerning a number of issues, which are addressed below. In considering the matters listed in MCC 6-6-8-4, the Commission need not find that the Application meets any specific criterion. Rather, the question before the Commission is two-fold: first, the Commission must decide whether specific standards regarding the listed development issues are necessary, and second, if it wishes to set such standards, the Commission must

² ODFW's March 25 letter identified only big game winter range north as a designated habitat area, but noted that it is located north of the Project Area, and only potentially impacted by improvement and use of existing roads.

determine whether there is enough information in the record for the Commission to do so.

The Commission's response to these factors is below.

1. Noise, dust, traffic and visual screening.

FINDING: The Commission finds that the geographical separation of the project from any nearby developed or inhabited property (explained in App. at page 30), coupled with a fugitive dust control plan to be approved by the Oregon DEQ (explained in App. at page 31), and the limited number of vehicle trips generated by the Project under a reasonable worst scenario (see App. Ex. 9), adequately protect other properties from dust, traffic, and visual impacts. The Commission also finds that the underground mining method chosen for the Project will limit most blasting noises, as explained in the Application at Page 31, and geographic separation of the Project from developed areas will further limit noise impacts. For these reasons, the Commission finds that additional standards related to noise, dust, traffic, or visual screening are unwarranted.

2. Setbacks from property lines.

FINDING: The Commission finds that the geographic separation of the Project from the nearest developed areas, explained on page 30 of the Application, obviates the need for the Commission to set additional standards related to setbacks.

3. Location of vehicular access points.

FINDING: The Commission finds that the geographic separation of the Project from the nearest developed areas, explained on page 30 of the Application, as well as the limited number of daily trips that it could generate (App. Ex. 9), the low speeds traveled on BLM roads, and the absence of traffic near the Project Area obviate the need for the Commission to set additional standards related to vehicular access points.

4. Fencing needs.

FINDING: The Commission finds that the proposed fencing around the Patent Parcel, described on Application page 33, is sufficient to address any fencing needs, and notes that Opponents did not explain why this fencing would be insufficient. For these reasons, the Commission finds that additional fencing standards are unwarranted.

5. Prevention of the collection and stagnation of water at all stages of the operation.

FINDING: The Commission finds that this consideration is related to vector control. The Commission finds that no additional standards concerning collection and stagnation of water are warranted because of the geographical separation of the Project from populated areas, as explained by the letter from the Malheur County Vector Control District, noted as Exhibit 6 of the Staff Report.

6. Rehabilitation of the land upon termination of the operation.

FINDING: Opponents argue that the Application is deficient because it includes excerpts of a preliminary, rather than final, mine reclamation plan. The Commission finds that there is no County criterion requiring a final reclamation plan; the County need only decide (1) whether it needs to set standards pertaining to “rehabilitation of the land upon termination of the operation,” and (2) if so, whether it has enough information in the record to do so.

The Commission finds a complete reclamation plan will be required by the Oregon Department of Geology and Mineral Industries (“DOGAMI”) according to detailed state regulations, as explained in the Applicant’s April 22 letter at Page 23, and set forth in OAR 632-037-0130. There is no evidence in the record that such regulations would be insufficient to ensure safe termination of the mining operation and adequate rehabilitation of the land. Further, the Applicant has provided a summary of its current draft reclamation plans (App. Ex. 3) and substantial detail on its tailings facility design (Applicant’s April 22 letter, Exhibit 9 and 10). For the above reasons, the Commission finds that applicable DOGAMI regulations will ensure adequate rehabilitation of the land upon termination and the Applicant has offered substantial evidence that it can satisfy those regulations.

To ensure that an adequate reclamation plan is in place prior to the start of mining activities, the Commission imposes the following condition of approval:

“The Applicant shall obtain approval for its reclamation plan from Oregon Department of Geology and Mineral Industries (DOGAMI) prior to beginning mining operations. Unless otherwise prohibited by DOGAMI, the Applicant may conduct pre-construction and construction activities prior to obtaining approval of its reclamation plan.”

- k. Financial Assurance

FINDING: The Commission finds MCC 6-6-11 does not obligate the County to require financial assurance for mine closure and reclamation. However, the Commission finds that OAR 632-037-0135 requires that “[a] reclamation bond or alternative security acceptable to the Department shall be posted before the start of any construction, excavation or other ground disturbing activity associated with mining operations, other than baseline data collection.” This amount must include the actual cost of reclamation and environmental protection costs in the event of an incident and must be reviewed annually for adequacy. Id. The Commission finds no reason to require an additional guarantee and notes that Opponents have not explained either how this guarantee requirement is not sufficient or what additional financial guarantees the County should require.

Finally, the Commission finds that the financial guarantee required by OAR 632-037-0135 must be in place before mining can begin, which makes unnecessary Opponent’s argument that the Application should not be approved until financial security is in place. DOGAMI has represented that an approved CUP is required before the Applicant can apply for its consolidated permit, thus it is probably not possible for DOGAMI to determine the final bonding level(s) before the County grants a CUP. Applicant’s April 22 letter at 3–4.

1. Cyanide Leach Chemical Processing and Acid Mine Drainage

FINDING: Opponents argue that “[t]he application and any review by the Planning Commission of the impacts of the project are necessarily incomplete because the application does not include any information about potential impacts of chemical process mining or acid mine drainage.” As an initial matter, the Commission rejects this argument for two jurisdictional reasons. First, it finds that there are no conditional use criteria addressing specific mining methods and technologies. Second, to the extent that this argument addresses ore processing, it finds that processing activities are proposed on federal land which are not under the County’s jurisdiction.

With regard to the potential relevance of the mining and processing methods proposed and acid mine drainage to the significant change/significant cost tests in ORS 215.296 and MCC 6-6-7, the Commission finds the following:

- There is no legal basis upon which the Commission must apply the above sections to activities on BLM land.

- There is no evidence in the record that the proposed chemical processes and acid mine drainage treatment techniques will significantly change or significantly increase the costs of accepted farm activities on private or federal land.
- The Commission finds that no person engaged in accepted farm activities has raised any objections to the Applications.
- The Commission finds that the proposed cyanide leach mining process is entirely enclosed within vessels and is conducted through a closed-loop system. App. at 10–11, Ex. 1. The Commission finds that all reaction tanks will be constructed upon catch basins sufficient to contain 110 percent of the volume of the tank, in case a tank fails. *Id.* The Commission also finds that all system pipes will be constructed within lined ditches capable of preventing leakage from percolating into the ground. Applicant’s April 22 letter at 13.
- The Commission finds that the lowest proposed level of the mine is above the identified ground water level. Applicant’s April 22 letter at 13.³ The Commission also finds that the mine itself will be dewatered as needed if ground water intrudes and to remove any collected process water. *Id.*
- The Commission finds that the Applicant has developed a complete ground water monitoring plan designed to characterize the base-line ground water quality. Ex. 6, pages 21–46
- The Commission finds that the tailings storage facilities and waste rock facilities will be adequately lined, will have adequate water drainage, and will be sufficiently reclaimed to ensure protection of ground water, as explained in the Applicant’s April 22 letter at 13–14 and the Application at Ex. 3.
- Acid neutralization of mined material is required by state regulations. OAR 340-043-0130. The Applicant’s April 22 letter provides a detailed explanation of how the Project has characterized the acid-generating characteristics of waste rock and ore, and has explained how the Project will avoid acid mine drainage as follows:

³ The Commission notes that ground water in some areas of the Project Area is above the lowest level of the mine. However, oral testimony at the April 25, 2019 continued hearing explained that the ground level underneath the mine itself is lower than the proposed bottom level of the mine.

“All material that will be put on the Tailings Site Facility or backfilled into the mine will be neutralized to at least the levels required by the regulations stated above.

“Prior to neutralization, acid generating material will be in full containment (see Tailings Design Report summary).

“Tests have also been conducted (or are in progress) to determine the NAG on the borrow material that will be backfilled into the mine and used for construction purposes. These tests are still in progress, but no acid generating borrow material will be used for mine backfill, unless it is neutralized in compliance with Oregon regulations (as stated above).”

Applicant’s April 22 letter at Exhibit 7.

- The Applicant has provided evidence of water rights to serve the Project. Staff Report Ex. 2. To the extent that Project could impact surrounding water quantity available for range uses, such considerations are under the jurisdiction of the Oregon Water Resources Department, not the County. *Ashland Drilling, Inc. v. Jackson County*, 168 Or App 624 (2000).
- The Applicant proposes to relocate any stock watering facilities that might be included within the fenced area. Applicant’s April 22 letter at 11.

Even if ORS 215.296 and MCC 6-6-7 could be construed to turn on issues of mine processing technology or acid mine drainage, in light of the facts above the Commission finds in the alternative that those issues will not force a significant change to accepted farm practices surrounding the Project Area. To summarize, this is because the Project includes adequate measures to ensure ground water quality and protection against acid mine drainage.

V. CONCLUSION

Based upon the parties’ arguments and evidence in the whole record, the Planning Commission finds that the Applications meet all applicable criteria.

VI. ORDER

The Commission hereby approves the Applicant's Conditional Use Permit application and recommends approval of the Applicant's Sage Grouse Permit application, with the conditions identified above. These findings constitute the Commission's decision on the Applications, which decision is adopted by vote of the Commission as affirmed by the signature of the Planning Commission chairperson or acting chairperson below. The Commission's decision is effective upon the date indicated below.

Dated this 23 day of May, 2019.

By: Kathy Clavin

Malheur County Planning Commission Chair

