INDUSTRIAL ACTIVITIES STORMWATER POLLUTION PREVENTION PLAN

for

Union Mine Disposal Site

Facility Address:

5700 Union Mine Road
El Dorado, California 95623

Waste Discharge Identification (WDID):

5 S091000443

Exceedance Response Action (ERA) Status:

Baseline

Legally Responsible Person [LRP):

El Dorado County CDA - Environmental Management Division
2850 Fairlane Court Building C, Placerville, CA 95667
Greg Stanton
Acting Director, Environmental Management Division
(530) 295-0429

Duly Authorized Representative:

Robert Brillisour
Union Mine Disposal Site Supervisor
(530) 295-0429

SWPPP Prepared by:

Tetra Tech BAS
1360 Valley Vista Drive, Diamond Bar, CA 91765

SWPPP Preparation Date

June 30, 2015

Table of Contents

Legally Responsible Person

Approval and Certification of the Stormwater Pollution Prevention Plan

Facility Name: Union Mine Disposal Site

Waste Discharge Identification (WDID): 5 S091000443

"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, to the best of my knowledge and belief, the information submitted is, 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."

Greg Stanton

Legally Responsible Person

Signature of Legally Responsible Person

June 30, 2015

Date

Robert Brillisour

Duly Authorized Representative of Legally Responsible Person

530-295-0429

Telephone Number

SWPPP Amendment No. #1

Project Name: Union Mine Disposal Site

Project Number: 5 S091000443

Legally Responsible Person's Certification of the
Stormwater Pollution Prevention Plan Amendment

"This Stormwater Pollution Prevention Plan and attachments were prepared under my direction to meet the requirements of the California Industrial General Permit (SWRCB Order No. 2014-0057-DWQ)."

LRP's Signature	Date
Greg Stanton	Director EMD
LRP Name	LRP Title
Director EMD	(530) 621-6658
Title and Affiliation	Telephone
2850 Fairlane Court, Building C Placerville CA 95667	greg.stanton@edcgov.us
Address	Email

Amendment Log

Facility Name: Union Mine Disposal Site

Waste Discharge Identification (WDID): 5 S091000443

Amendment No.	Date	Page and Section No.	Requested By	Brief Description of Amendment; include reason for change, site location, and BMP modifications.	Prepared and Approved By
1	6/16/16	(SWPPP cover page) (page 11, 2.1.3) (page 12, 2.1.4) (page 15, 2.3.1) (page 16, Table 2.1) (page 18, 2.3.2) (page 29, 3.1.4) (page 32 Table 3.2) (page 38, Table 3.5) (page 43, Table 5.1) (page 44, Table 5.2 & 5.6.1) (page45, Table 5.4) (Site Map)	Robert Brillisour	Household hazardous waste is no longer transferred from temporary collection events to the site and household hazardous waste is no longer stored at the site. The facility does not have a Permit by Rule for collection of household hazardous waste. The drainage for sample collection point S8 was diverted under the main access road to the concrete diversion canal that drains to the North sedimentation basin and out to sample point S2. Sample point S8 is no longer needed. The site map was updated to reflect these changes.	

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SWPPP Preparation Date

June 30, 2015

- Trucking timber

2.1.3 Existing Conditions

The facility site consists of a scale area, sedimentation basins (north, south, and west), Class II Surface Impoundment, leachate/septage treatment facilities, north and south spray fields, monitoring and control facilities, ~~household hazardous waste storage (HHWS) and transfer facility~~, closed Class III landfill, active Class II landfill, soil stockpile and other support structures and facilities. The closed landfill areas have a final cover cap, which includes a vegetated soils layer at the surface in order to minimize sediment transport. Inactive landfill slopes are also vegetated. Of the developed area, approximately 20 acres of industrial activities are directly exposed to precipitation and stormwater runoff. Existing BMPs at this facility are described in Section 3.

Existing sources of contamination at the site include an underground gold mine, which operated from the 1860s through the 1940s and underlies part of the facility. Arsenic and iron are naturally occurring constituents in groundwater throughout the mineralized belt of the Foothills. They are derived from sulfide minerals (primarily Pyrite and Arsenopyrite) that are associated with gold deposits in bedrock. A history of water sampling has shown results that exceed the US EPA benchmark values (200 ohms/cm) for Specific Conductance (SC), (1.0 mg/L) of Iron, and (0.064 mg/L) of Magnesium at the North and South sedimentation basins. Current BMPs have been reviewed and are deemed adequate to prevent the addition of any potential contaminates to surface and/or groundwater sources at the facility.

2.1.4 Description of Drainage Areas and Existing Drainage

The general hydrology and drainage of the facility and offsite run-on can be divided into five major drainage areas. Each of the five drainage areas flow generally to the northeast and discharge at three distinct locations. Figure 2 in Appendix A shows the vicinity of the Union Mine Disposal Site, including the general site topography, storm drainage system, drainage inlets, its respective drainage areas, sedimentation basins, and discharge locations.

The facility site is in an area of steep rocky terrain with ridge to the west and south. The elevations of the offsite run-on range from 2,012 to 1,260 feet above mean sea level (msl). The flows from the slope west of the site enter through two culvert locations and flow overland through the site. On-site drainage consists mostly of earthen vegetated channels, down drains, and underground storm drains that flow to three sedimentation basins.
The southern portion of the site comingles the run-on prior to reaching the southern sedimentation basin via vegetated channels. The northern portion of the site flows towards the western sedimentation basin, which is connected directly to the northern sedimentation basin via an underground pipe. The household hazardous waste area sheet flows from the pavement area to the southeast through drainage channel to discharging offsite.

Drainage from all three discharges outlets flows to the east, towards Martinez Creek.

Detailed descriptions of all drainage areas are provided below.

DA-1 – A steep and wooded natural area with several residential houses located near the ridgeline. This area slopes to the east and drainage which is collected flows south in a ditch along

the western side of Union Mine Road. Drainage flows under the road through a culvert and enters the site in an earthen vegetative swale.

DA-2– Also a steep and wooded natural area with residential houses located near the ridgeline. This area slopes to the east and drainage, which is collected flows to the north in a ditch along the western side of Union Mine Road. Drainage flow under the road through a separate culvert and enters the site in an earthen vegetative swale.

DA-3 - A hilly, rocky area with some heavily wooded areas and channelized drainage along roadways. Flows from this portion of the site flow to the northeast and comingle with the on-site run-on prior to flowing into the southern sedimentation basin.

DA-4 - The existing landfill cell, which slopes generally to the southeast, consists of some poorly vegetated slopes. Runoff from decks and benches flow through down drains prior to entering the western sedimentation basin.

DA-5 – The storage building ~~household hazardous waste~~ parking areas and gravel paved yard sheet flow to the southeast. Drainage is collected in swales and ditches prior to being discharged

2.1.5 Stormwater Run-On from Offsite Areas

Run-on to the site is generated by up gradient undeveloped land. The tributary area contributing to offsite run-on is estimated to be approximately 377 acres. The anticipated runoff coefficients were assumed to be 0.79, which represents fair wooded vegetation with Type D soil. The anticipated offsite run-on to the project site is estimated to be a peak flow of 2.26 cfs and a volume of 2.20 Acre Ft during the 85th percentile (1 inch) event. The hydrology calculations are included in Appendix F.

The General Permit requires that BMPs be implemented to direct offsite and non-industrial run-on away from industrial areas and erodible surfaces. In accordance with this requirement, the offsite run-on is convey toward the south sedimentation basin via channels and surface flows. The basin is located in the eastern portion of the facility. The off-site drainage areas and associated stormwater conveyance facilities are shown on Figure 2 – SWPPP Site Plan in Appendix A.

2.1.6 Geology and Groundwater

The site is underlain by weathered to fresh, thin-bedded slates and phyllite. The weathered zone ranges from 20 to feet in depth.

Existing 35.3-acre Class III Landfill: The class III landfill area is comprised of buried refuse, which is covered by a four different landfill cover sections that vary by the area of the landfill.

1. A prescriptive final cover was installed on 4.9 acres of the northern and southeastern sideslopes of the Class III unit during October of 1997. This cover consists of a two-foot thick foundation layer, a one-foot thick low permeability layer, and a one-foot thick vegetative layer.

In the fall of 1998, an engineered alternative final cover was installed on 14.6 acres of the top and eastern sideslopes of the Class III unit. The engineered alternative final cover uses a Geosynthetic Clay Liner (GCL) in place of the prescriptive cover's one-foot thick

Storage Building Area: ~~Most Household Hazardous Waste (HHW) material is stored in the HHW storage building,~~ County Vector Program pesticides are stored in an enclosed storage shed. ~~and waste car batteries are stored in enclosed containers.~~

~~All material storage containers are inspected for spills or leaks. If a leak is discovered, it is cleaned with absorbent materials specifically chosen to clean-up HHW spills or leaks.~~

Waste oil from the waste water treatment facility is stored at the Storage Building Area and is stored in a double-walled tank. Used oil is removed regularly by a licensed waste hauler for recycling off-site.

Closed Class III Landfill, Active Class II Landfill and Soil Stockpile: The active landfill and stockpile areas are sprayed with water to control dust as needed. Placement of straw bales and silt fences and construction of a straw bale filtration system at the downstream point of the Class II landfill is performed to minimize erosion and turbidity. Vegetation is maintained on areas that are either closed or inactive.

Table 2.1 Industrial Activities and Associated Materials

Industrial Activity	Associated Industrial Materials	Material Quantity	Material Physical Characteristics	Material Location	Associated Pollutants	Stormwater Exposure Pathway
Vehicle/Equipment Parking	Leaking vehicle fluids including hydraulic and radiators	Varies – typically four to six vehicles at the site.	Liquid	Employee/Visitor Parking Lot and Office Area	Oil and Grease, Sediments	Contamination carried into the storm drain by surface flows
Diesel Fuel Dispensing	Fuel Spills	1000 gallons	Liquid	Employee/Visitor Parking Lot and Office Area	Oil and Grease, sediments	Contamination carried into the storm drain by surface flows
Sludge dewatering, Vehicle/Equipment Washing/Digester Processing Equip	Leaking equipment (i.e., hydraulic lines). Leaking chemical containers. Wash water.	55 gallons	Liquid	Centrifuge Building/Material Storage/Blower Building	Oil and Grease	Contamination carried into the storm drain by surface flows
Chemical Storage; Waste Oil Storage; ~~Waste Car Battery Storage~~; New Pesticide Storage	Leaking chemical containers and tanks.	~~55 gallons~~ 1,000 gallon waste oil tank/10 lbs. bags	Liquid and powder.	Storage Building Area	Various Chemicals	No storage areas are exposed to storm water.

2.3.2 Significant Spills and Leaks

Table 2.2 includes a list of industrial materials where spills and leaks have potential to occur, and includes material characteristics, quantities, locations, and containers. Spills and leaks will be prevented by implementing the BMPs described in Section 3.

Table 2.2 Potential Material Spills and Leaks

Industrial Material	**Material Physical Characteristics**	**Material Quantity**	**Material Container**	**Material Location**
Catronic Polymer	Liquid	1,000 Gallons	250 Gallon Poly Tote Container	Solids Dewatering Facility
Diesel Fuel	Liquid	1,000 Gallons	Above Ground Tank	Near the Surge Basin
Grease and Gear Oil	Liquid/Solid	110 Gallons	55-GallonPurchased Containers	Blower Building
Sodium Hypochlorite	Liquid	416 Gallons	55-GallonPoly Drums	Blower Building
Leachate	Liquid	Variable	Class II Surface Impoundment	Class II Surface Impoundment
Condensate	Liquid	Variable	Class II Surface Impoundment	Class II Surface Impoundment
~~Household Hazardous Waste~~	~~Liquid/Powder/Solid~~	~~Variable~~	~~Poly and Metal Drums~~	~~HHWS Building~~
Sludge/MSW	Liquid/Solid	300 tons/day	Landfill	Landfill
Septic Wastes	Liquid/Solid	No Limit	Variable	Septage Treatment Facility

- Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with stormwater during handling;
- Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
- Divert run-on and stormwater generated from within the facility away from all stockpiled materials;
- Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures (Section X.H.1.c); and
- Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.

Specific material handling and waste management BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

Storm water has a very low potential for containing pollutants as these are maintained within the solids dewatering facility and blower building. Lubricating liquids and other associated materials are stored in the enclosed blower building to prevent contact with storm waters. The predicted direction of pollutant flow from these areas would likely follow the course of discharge shown in Figure 2.

The centrifuge building, and blower building contain those materials detailed in Table 2.2, but the buildings are completely enclosed and all drainage is directed back to the digester for treatment. ~~The household hazardous waste storage facility (HHWS) contains the items listed in Table 2.2 in poly drums on secondary containment pallets.~~

3.1.5 Erosion and Sediment Controls

The following erosion and sediment control measures will be implemented in accordance with the General Permit (Section X.H.1.e):

- Implement effective wind erosion controls;
- Provide effective stabilization for all disturbed soils and other erodible areas prior to a forecasted storm event;
- Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;
- Divert run-on and stormwater generated from within the facility away from all erodible materials; and
- If sediment basins are implemented, ensure compliance with the design storm standards in Section X.H.6. of the General Permit.

Specific erosion and sediment control BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

- Employee Training Records;
- BMP Implementation Records;
- Spill and Clean-up Related Records;
- Records of Monitoring Information; and
    - The date, exact location, and time of sampling or measurement;
    - The date(s) analyses were performed;
    - The individual(s) that performed the analyses;
    - The analytical techniques or methods used; and
    - The results of such analyses;
- Annual Reports.

3.2 ADVANCED BMPs

3.2.1 Exposure Minimization BMPs

Storm resistant shelters are installed onsite to prevent the contact of stormwater with industrial activities and material. The locations of these shelters and associated industrial activities and materials are presented in Table 3.2.

Table 3.2 Exposure Minimization BMPs

Shelter Location/Description	Associated Industrial Activity/Material
Blower Building	Digester processing equipment/grease, gear oil, sodium hypochlorite,
Centrifuge Building	Sludge dewatering and vehicle-equipment washing/wash water
~~Household Hazardous Waste Storage Building~~	~~Chemical Storage/household hazardous waste~~

3.2.2 Stormwater Containment and Discharge Reduction BMPs

Stormwater containment and discharge reduction BMPs include BMPs that divert, reuse, contain, or reduce the volume of stormwater runoff. Specific stormwater containment and discharge reduction BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.3 and the BMP fact sheets are included in Appendix G.

Table 3.5 BMP Summary Table

Industrial Activity/Material	Pollutant Sources	Potential Pollutants	BMPs Implemented
Vehicle/Equipment Parking	Leaking vehicle fluids including hydraulic and radiators	Oil and Grease Sediments	Routine maintenance of trucks to prevent leaks Vehicle parking areas are inspected as necessary for fluid leaks and adsorbent material is used for cleanup. The parking area is kept clean and clear of leaks and debris using dry sweeping methods.
Diesel Fuel Dispensing	Fuel Spills	Oil and Grease Sediments	Diesel fuel tank is double walled secondary containment system. All industrial activities are conducted inside buildings SPCC Plan is in-place and staff is trained on spill response procedures.
Sludge dewatering, Vehicle/Equpment Washing/Digester Processing Equip	Leaking equipment (i.e., hydraulic lines). Leaking chemical containers. Wash water.	Oil and Grease Sediments	Inspection for pipe and pump leaks. Routine maintenance of equipment and cleanup of leaks and/or spill with absorbent material. Inspection for spills or leaks of chemical containers. Use of absorbent materials to clean-up any spills or leaks. Repair leak or transfer to new container. Chemical containers are stored inside blower building. Building drains to sump, which is directed to the digester for treatment. Wash water from centrifuge building is directed to the digester.
Chemical Storage; Waste Oil Storage; ~~Waste Car Battery Storage~~; Pesticide Storage	Leaking chemical containers and tanks.	Various Chemicals	Chemicals are stored in areas not exposed to storm water. Storage containers have secondary containment pallets in the building; pesticides are stored in enclosed storage shed. ~~; waste car batteries are stored in enclosed containers.~~ Inspection for spills or leaks of material storage containers. Use of absorbent materials to clean-up any spills or leaks. Waste oil is stored in a double-walled tank and is removed regularly by a licensed waste hauler for recycling off-site.

inspection checklist. Photographs used to document observations will be referenced on the *Visual Observation Log* and maintained with the Monitoring Records in Attachment 2.

The completed logs and checklists will be kept in MIP Attachment 2 "Monitoring Records".

5.5.4 Visual Monitoring Follow-Up and Reporting

Correction of deficiencies identified by the observations, including required repairs or maintenance of BMPs, will be initiated and completed as soon as possible. Response actions will include the following:

- Report observations to the Pollution Prevention Team Leader or designated individual;
- Identify and implement appropriate response actions;
- Determine if SWPPP update is needed;
- Verify completion of response actions; and
- Document response actions.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will completed as soon as possible, and the SWPPP will be amended to reflect the changes.

BMP deficiencies identified in site observation reports and correction of deficiencies will be tracked on the *BMP Observation Checklist* and will be retained in Appendix I.

Results of visual monitoring must be summarized and reported in the Annual Report.

5.5.5 Visual Monitoring Locations

The observations identified in Sections 5.5.1 and 5.5.2 will be conducted at the locations identified in this section.

Visual monitoring locations are shown on the Site Map(s) in SWPPP Appendix A.

There are five drainage area(s) onsite. Drainage area(s) are shown on the Site Map(s) in Appendix A and are identified in Table 5.1.

Table 5.1 Facility Drainage Areas

Location Identifier	Drainage Area Name
DA-1	Steep and Wooded Natural Area 1
DA-2	Steep and Wooded Natural Area 2
DA-3	Hilly and Rocky Area
DA-4	Existing Landfill Slopes
DA-5	~~Household Hazardous Waste~~ Storage Building Parking

There are ~~three~~ two discharge location(s) onsite. Site stormwater discharge location(s) are shown on the Site Map(s) in Appendix A and Table 5.2 identifies each stormwater discharge location.

Table 5.2 Stormwater Discharge Locations

Location Identifier	Discharge Location (Note Drainage Area that the discharge location drains)
S-2	Steep and Wooded Natural Area 1 & Existing Landfill Slopes
S-3	Steep and Wooded Natural Area 2 & Hilly and Rocky Area
~~S-8~~	~~Household Hazardous Waste Parking~~ Diverted to road side canal that drains to North Sedimentation Basin

There are three stormwater storage or containment area(s) onsite. Stormwater storage or containment area(s) are shown on the Site Map(s) in Appendix A and Table 5.3 identifies each stormwater storage or containment area by location.

Table 5.3 Stormwater Storage and Containment Areas

Location Identifier	Description of Containment (Note Drainage Area in which the containment is located)
North – Sedimentation Basin	Existing Landfill Slopes
South – Sedimentation Basin	Hilly and Rocky Area
West – Sedimentation Basin	Existing Landfill Slopes

5.6 Sampling and Analysis Procedures

This section describes the methods and procedures that will be followed for stormwater sampling and analysis. It contains information for sampling schedule, sampling locations, monitoring preparation, analytical constituents, sample collection, sample analysis, and data evaluation and reporting.

5.6.1 Sampling Schedule

Stormwater samples at each discharge location will be collected and analyzed from a minimum of two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30).

A QSE is a precipitation event that:

- Produces a discharge for at least one drainage area; and
- Is preceded by 48 hours with no discharge from any drainage area.

5.6.2 Sampling Locations

Sampling locations include all locations where stormwater is discharged from the site. Discharge locations are shown on the Site Map(s) in Appendix A and are included in Table 5.4.
A total of three discharge location(s) have been identified on the project site for the collection of stormwater runoff samples.

Table 5.4 Sample Locations

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
S-2	North Sedimentation Basin Discharge Point	Lat. 38.648264 Long. -120.826147
S-3	South Sedimentation Basin Discharge Point	Lat. 38.647663 Long. -120.825492
~~S-8~~	~~Vicinity of the Household Hazardous Waste Storage and Transfer Facility~~	~~Lat. 38.650304~~ ~~Long. -120.828134~~

5.6.3 Monitoring Preparation

Samples on the project site will be collected by the following sampling personnel:

Name/Telephone Number: Robert Brillisour/530-295-0429

Alternate(s)/Telephone Number: Chad Casner/Roy Pike/530-295-0429

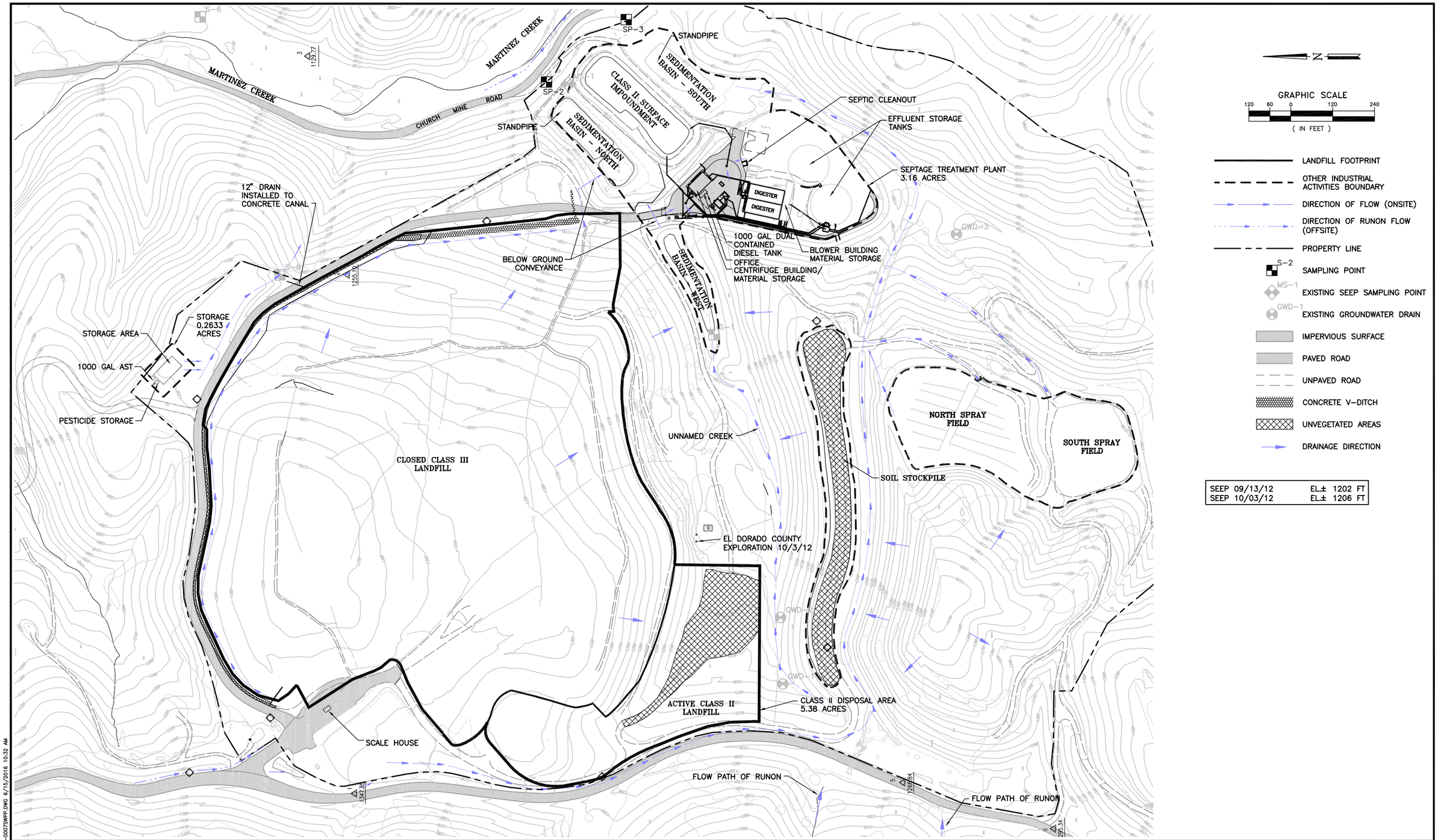
An adequate stock of monitoring supplies and equipment for sampling will be available onsite prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the facility will include, but are not limited to clean powder-free nitrile gloves; sample collection equipment; coolers; appropriate number and volume of sample containers; identification labels; re-sealable storage bags; paper towels; personal rain gear; ice; and *Sampling Field Log Sheets* and Chain of Custody (CoC) forms, which are provided in MIP Attachment 3 “Example Forms”.

5.6.4 Analytical Constituents

Table 5.5 identifies the constituents identified for sampling and analysis.

Table 5.5 Analytical Constituents

Constituent	Reason
pH	Basic required constituent



NO.	REVISION DESCRIPTION	BY:

TETRA TECH BAS
1360 Valley Vista Drive, Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

UNION MINE DISPOSAL SITE/SEPTAGE TREATMENT FACILITY

SWPPP SITE MAP

DESIGNED BY : –	SCALE : AS SHOWN	
DRAWN BY : A.N.P.	DATE : 06-2016	FILE NO.: 22-0007SWPP.DWG
CHECKED BY : M.O.	DATE : 06-2016	FIGURE 1
APPROVED BY : –	DATE : 06-2016	

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Section 1 SWPPP Requirements

1.1 INTRODUCTION

The Union Mine Disposal Site comprises approximately 322 acres and is located at 5700 Union Mine Road in El Dorado, California. The property is owned operated by El Dorado County CDA - Environmental Management Division. The facility location is shown on the Site Map(s) in Appendix A.

This Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Stormwater Discharges Associated with Industrial Activities (General Permit) Order No. 2014-0057-DWQ (NPDES No. CAS000001) issued by the State Water Resources Control Board (State Water Board). This SWPPP has been prepared following the SWPPP Template provided on the California Stormwater Quality Association Stormwater *Best Management Practice Handbook Portal: Industrial and Commercial* (CASQA 2014). In accordance with the General Permit, Section X.A, this SWPPP contains the following required elements:

- Facility Name and Contact Information;
- Site Map;
- List of Significant Industrial Materials;
- Description of Potential Pollution Sources;
- Assessment of Potential Pollutant Sources;
- Minimum BMPs;
- Advanced BMPs, if applicable;
- Monitoring Implementation Plan (MIP);
- Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation); and,
- Date that SWPPP was Initially Prepared and the Date of Each SWPPP Amendment, if Applicable.

1.2 PERMIT REGISTRATION DOCUMENTS

Required Permit Registration Documents (PRDs) were submitted to the State Water Board via the Stormwater Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP), or authorized personnel (i.e., Approved Signatory) under the direction of the LRP. The project-specific PRDs include:

1. Notice of Intent (NOI);
2. Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal);
3. Site Map(s);
4. SWPPP; and

5. Annual Fee.

- The Site Map(s) can be found in Appendix A. A copy of the submitted PRDs are also kept in Appendix B of the SWPPP along with the Waste Discharge Identification (WDID) confirmation.
- The SWPPP uploaded into SMARTS should not include a copy of the General Permit.
- In the event of future significant changes to the facility layout, the Discharger will certify and submit new PRDs via SMARTS.

1.3 SWPPP AVAILABILITY AND IMPLEMENTATION

The SWPPP is available on-site to all employees during all hours of operation (see Section 2.5 for the Operations Schedule), and will be made available upon request by a State or Municipal inspector. The SWPPP will be implemented by July 1, 2015.

1.4 POLLUTION PREVENTION TEAM

Facility staff that have been designated as Pollution Prevention Team members are listed below in Table 1.1., along with their responsibilities and duties. . This table will be updated, as needed when there are changes to staff and staff responsibilities. All team members will be trained to perform the duties assigned to them. Employee training logs are provided in Appendix C.

Table 1.1 Pollution Prevention Team

Name	Title	Phone Number	Responsibilities and Duties
Robert Brillisour	Disposal Site Supervisor	530-295-0429	Oversees permit requirements, including housekeeping, observations and record keeping, run-off sampling, and other permit requirements that may arise in day-to-day permit management.
Robert Lauritzen	Geologist	530-621-5130	Assists with implementation of BMPs and SWPPP compliance.
Chad Casner	Waste Mgmt. Tech II	530-295-0429	Assists with implementation of BMPs and SWPPP compliance.
Roy Pike	Waste Mgmt. Tech II	530-295-0429	Assists with implementation of BMPs and SWPPP compliance.

1.5 DULY AUTHORIZED REPRESENTATIVE

Duly Authorized Representative who is responsible for SWPPP implementation and has authority to sign PRDs is listed below in Table 1.2. Written authorizations from the LRP for these individuals are provided in Appendix D.

Table 1.2 Duly Authorized Representatives

Name	Title	Phone Number
Robert Brillisour	Disposal Site Supervisor	(530) 295-0429

1.6 PERMITS AND GOVERNING DOCUMENTS

In addition to the General Permit, the following documents have been taken into account while preparing this SWPPP:

- Solid Waste Facilities Permit;
- Joint Technical Document;
- Regional Water Board requirements;
- Waste Discharge Requirements;
- Hydrology and Hydraulics Plan;
- Spill Prevention Control and Countermeasures Plan;
- Hazardous Waste Regulations and Permits;
- Air Quality Regulations and Permits ; and
- Clean Water Act Section 401 Water Quality Certifications and 404 Permits.

1.7 SWPPP AMENDMENTS

This SWPPP will be amended or revised as needed. A list of amendments (Amendment Log) is included in the front of this SWPPP (pages 1-2), and amendment certifications are included in Appendix E. The Amendment Log will include the date of initial preparation and the date of each amendment. The SWPPP should be revised when:

- There is a General Permit violation;
- There is a reduction or increase in the total industrial area exposed to stormwater;
- BMPs do not meet the objectives of reducing or eliminating pollutants in stormwater discharges;
- There is a change in industrial operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4);
- There is a change to the parties responsible for implementing the SWPPP; or
- Otherwise deemed necessary by the QISP.

The following items will be included in each amendment:

- Who requested the amendment;

- The location of proposed change;
- The reason for change;
- The original BMP(s) proposed, if any; and
- The new BMP(s) proposed.

Amendments will be logged at the front of the SWPPP and certification kept in Appendix E. The SWPPP text will be revised replaced, and/or hand annotated as necessary to properly convey the amendment. SWPPP amendments must be certified and submitted by the LRP or their designated Duly Authorized Representative via SMARTS within 30 days whenever the SWPPP contains significant revisions. With the exception of significant revisions, SWPPP changes will be certified and uploaded to SMARTS once every three (3) months in the reporting year.

1.8 RETENTION OF RECORDS

Paper or electronic records of documents required by this SWPPP will be retained for a minimum of five (5) years from the date generated or date submitted, whichever is later, for the following items:

- Employee Training Records;
- BMP Implementation Records;
- Spill and Clean-up Related Records;
- Records of Sampling and Analysis Information
    - The date, exact location, and time of sampling or measurement;
    - The date(s) analyses were performed;
    - The individual(s) that performed the analyses;
    - The analytical techniques or methods used; and
    - The results of such analyses;
- Records of Visual Observations
    - The date
    - The industrial areas/drainage areas of the facility observed during the inspection (Location);
    - The approximate time of the observation;
    - Presence and probable source of observed pollutants; and
    - Name of the individual(s) that conducted the observations;
- Response to the observations including identification of SWPPP revisions if needed.Level 1 ERA Reports;
- Level 2 ERA Action Plan;

- Level 2 ERA Technical Report; and
- Annual Reports from SMARTS (checklist and any explanations).

Copies of these records will be available for review by the Water Board's staff at the facility during scheduled facility operating hours. Upon written request by U.S. EPA or the local MS4, Dischargers will provide paper or electronic copies of requested records to the Water Boards, U.S. EPA, or local MS4 within ten (10) working days from receipt of the request.

1.9 EXCEEDANCE RESPONSE ACTIONS (ERAs)

If a General Permit NAL exceedance occurs in a given reporting year, a Level 1 ERA Evaluation and a Level 1 ERA Report will be required in the following year, or, if in a subsequent year, a Level 2 ERA Action Plan and a Level 2 ERA Report will be required in accordance with the General Permit. The results of either of the ERA reports may require that the SWPPP be amended.

1.10 ANNUAL COMPREHENSIVE FACILITY COMPLIANCE EVALUATION

The General Permit (Section XV) requires the Discharger to conduct one Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation) for each reporting year (July 1 to June 30). Annual Evaluations will be conducted at least eight (8) months and not more than sixteen (16) months after the previous Annual Evaluation. The planned window for conducting the Annual Evaluation is between April and June of each year. The SWPPP will be revised, as appropriate based on the results of the Annual Evaluation, and the revisions will be implemented within 90 days of the Annual Evaluation.

At a minimum, Annual Evaluations will consist of:

- A review of all sampling, visual observation, and inspection and monitoring records and sampling and analysis results conducted during the previous reporting year;
- A visual inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the stormwater conveyance system;
- A visual inspection of all drainage areas previously identified as having no exposure to industrial activities and materials in accordance with the definitions in Section XVII;
- A visual inspection of equipment needed to implement the BMPs;
- A visual inspection of any BMPs;
- A review and effectiveness assessment of all BMPs for each area of industrial activity and associated potential pollutant sources to determine if the BMPs are properly designed, implemented, and are effective in reducing and preventing pollutants in industrial stormwater discharges and authorized NSWDs; and
- An assessment of any other factors needed to comply with the Annual Reporting requirements in General Permit Section XVI.B.

1.11 ANNUAL REPORT

The Annual Report will be prepared, certified, and electronically submitted no later than July 15th following each reporting year using the standardized format and checklists in SMARTS based on the reporting requirements identified in Section XVI of the General Permit. Annual reports will be submitted in SMARTS and in accordance with information required by the on-line forms.

1.12 TERMINATION AND CHANGES TO GENERAL PERMIT COVERAGE

When any of the following conditions occur, termination of coverage under the General Permit will be requested by certifying and submitting a Notice of Termination (NOT) via SMARTS:

- Operation of the facility has been transferred to another entity;
- The facility has ceased operations, completed closure activities, and removed all industrial related pollutant generating sources;
- The facility's operations have changed and are no longer subject to the General Permit.

The SWPPP and all of the provisions of the General Permit will be complied with until a valid NOT is received and accepted by the Board.

If ownership changes, the new owner of the facility will be notified of the General Permit and regulatory requirements for permit coverage.

Section 2 Facility Information

2.1 FACILITY DESCRIPTION

2.1.1 Facility Location

The Union Mine Disposal Site comprises approximately 322 acres and is located at 5700 Union Mine Road, in El Dorado, California. The facility is located approximately 3 miles south of the town of El Dorado in El Dorado County, and is approximately 500 feet east of Martinez Creek a perennial stream. Martinez Creek is tributary to the North Fork Cosumnes River, which is a tributary to the Cosumnes River, thence to the Sacramento-San Joaquin Delta. The facility is located at Latitude: 38.64/Longitude: -120.82 and is identified on the Site Map(s) in Appendix A.

The project discharges to Martinez Creek that does not have adopted TMDLs or that is not listed for water quality impairment on the most recent 303(d)-list.

2.1.2 Facility Operations

Operations at the Union Mine Disposal Site consist of all activities required a fully permitted solid waste disposal facility, which main operations include approximately 42.3 acres of landfill footprint (36.3-acre Class III Old Landfill Area) and the remainder of the facility is utilized for a Class II Surface Impoundment, Leachate and Septage Treatment Facility, and spray fields. The Union Mine Disposal Site is not open to the general public. The 6.0-acre Class II Landfill Area is currently used on as needed or contingent basis, and is permitted to receive 300 tons per day of non-hazardous-general, non-hazardous sludge, designated waste, and hazardous-friable asbestos as allowed per Solid Waste Facilities Permit No. 09-AA-0003. A list of specific industrial activities is provided below:

- Minor Vehicle Maintenance and Repairs
- Equipment Maintenance and Repairs
- Vehicle Fueling
- Truck and Equipment Washing
- Leachate Management
- Sanitary Landfill Operations
- Septage Treatment Facility
- Vehicle Parking
- Household Hazardous Material Storage

The Union Mine Disposal Site includes two SIC Codes 4953 Disposal Sites for the Class II Disposal Area and Code 4212 for the Hazardous Waste Storage Facility. Below is the description from OSHA of the type of facilities that are assigned this code:

4953 Refuse Systems

Establishments primarily engaged in the collection and disposal of refuse by processing or destruction or in the operation of incinerators, waste treatment plants, landfills, or other sites for disposal of such materials. Establishments primarily engaged in collecting and

transporting refuse without such disposal are classified in Transportation, Industry 4212. Examples of 4953 operations include:

- Acid waste, collection and disposal of
- Ashes, collection and disposal of
- Dumps, operation of
- Garbage: collecting, destroying, and processing
- Hazardous waste material disposal sites
- Incinerator operation
- Landfill, sanitary: operation of
- Radioactive waste materials, disposal of
- Refuse systems
- Rubbish collection and disposal
- Sludge disposal sites
- Street refuse systems
- Waste materials disposal at sea

4212 Local Trucking without Storage

Establishments primarily engaged in furnishing trucking or transfer services without storage for freight generally weighing more than 100 pounds, in a single municipality, contiguous municipalities, or a municipality and its suburban areas. Establishments primarily engaged in furnishing local courier services for letters, parcels, and packages generally weighing less than 100 pounds are classified in Industry 4215; those engaged in collecting and disposing of refuse by processing or destruction of materials are classified in Industry 4953; those engaged in removing overburden from mines or quarries are classified in Division B, Mining; and construction contractors hauling dirt and rock as a part of their construction activity are classified in Division C, Construction. Examples of 4212 operations includes:

- Baggage transfer
- Carting, by truck or horse drawn wagon
- Debris removal, local carting only
- Draying, local: without storage
- Farm to market hauling
- Furniture moving, local: without storage
- Garbage, local collecting and transporting: without disposal
- Hauling live animals, local
- Hauling, by dump truck
- Local trucking, without storage
- Log trucking
- Mail carriers, bulk, contract: local
- Refuse, local collecting and transporting: without disposal
- Rental of trucks with drivers
- Safe moving, local
- Star routes, local
- Truck rental for local use, with drivers

- Trucking timber

2.1.3 Existing Conditions

The facility site consists of a scale area, sedimentation basins (north, south, and west), Class II Surface Impoundment, leachate/septage treatment facilities, north and south spray fields, monitoring and control facilities, household hazardous waste storage (HHWS) and transfer facility, closed Class III landfill, active Class II landfill, soil stockpile and other support structures and facilities. The closed landfill areas have a final cover cap, which includes a vegetated soils layer at the surface in order to minimize sediment transport. Inactive landfill slopes are also vegetated. Of the developed area, approximately 20 acres of industrial activities are directly exposed to precipitation and stormwater runoff. Existing BMPs at this facility are described in Section 3.

Existing sources of contamination at the site include an underground gold mine, which operated from the 1860s through the 1940s and underlies part of the facility. Arsenic and iron are naturally occurring constituents in groundwater throughout the mineralized belt of the Foothills. They are derived from sulfide minerals (primarily Pyrite and Arsenopyrite) that are associated with gold deposits in bedrock. A history of water sampling has shown results that exceed the US EPA benchmark values (200 ohms/cm) for Specific Conductance (SC), (1.0 mg/L) of Iron, and (0.064 mg/L) of Magnesium at the North and South sedimentation basins. Current BMPs have been reviewed and are deemed adequate to prevent the addition of any potential contaminates to surface and/or groundwater sources at the facility.

2.1.4 Description of Drainage Areas and Existing Drainage

The general hydrology and drainage of the facility and offsite run-on can be divided into five major drainage areas. Each of the five drainage areas flow generally to the northeast and discharge at three distinct locations. Figure 2 in Appendix A shows the vicinity of the Union Mine Disposal Site, including the general site topography, storm drainage system, drainage inlets, its respective drainage areas, sedimentation basins, and discharge locations.

The facility site is in an area of steep rocky terrain with ridge to the west and south. The elevations of the offsite run-on range from 2,012 to 1,260 feet above mean sea level (msl). The flows from the slope west of the site enter through two culvert locations and flow overland through the site. On-site drainage consists mostly of earthen vegetated channels, down drains, and underground storm drains that flow to three sedimentation basins.

The southern portion of the site comingles the run-on prior to reaching the southern sedimentation basin via vegetated channels. The northern portion of the site flows towards the western sedimentation basin, which is connected directly to the northern sedimentation basin via an underground pipe. The household hazardous waste area sheet flows from the pavement area to the southeast through drainage channel to discharging offsite.

Drainage from all three discharges outlets flows to the east, towards Martinez Creek.

Detailed descriptions of all drainage areas are provided below.

DA-1 – A steep and wooded natural area with several residential houses located near the ridgeline. This area slopes to the east and drainage which is collected flows south in a ditch along

the western side of Union Mine Road. Drainage flows under the road through a culvert and enters the site in an earthen vegetative swale.

DA-2– Also a steep and wooded natural area with residential houses located near the ridgeline. This area slopes to the east and drainage, which is collected flows to the north in a ditch along the western side of Union Mine Road. Drainage flow under the road through a separate culvert and enters the site in an earthen vegetative swale.

DA-3 - A hilly, rocky area with some heavily wooded areas and channelized drainage along roadways. Flows from this portion of the site flow to the northeast and comingle with the on-site run-on prior to flowing into the southern sedimentation basin.

DA-4 - The existing landfill cell, which slopes generally to the southeast, consists of some poorly vegetated slopes. Runoff from decks and benches flow through down drains prior to entering the western sedimentation basin.

DA-5 - The household hazardous waste parking areas and gravel paved yard sheet flow to the southeast. Drainage is collected in swales and ditches prior to being discharged

2.1.5 Stormwater Run-On from Offsite Areas

Run-on to the site is generated by up gradient undeveloped land. The tributary area contributing to offsite run-on is estimated to be approximately 377 acres. The anticipated runoff coefficients were assumed to be 0.79, which represents fair wooded vegetation with Type D soil. The anticipated offsite run-on to the project site is estimated to be a peak flow of 2.26 cfs and a volume of 2.20 Acre Ft during the 85th percentile (1 inch) event. The hydrology calculations are included in Appendix F.

The General Permit requires that BMPs be implemented to direct offsite and non-industrial run-on away from industrial areas and erodible surfaces. In accordance with this requirement, the offsite run-on is convey toward the south sedimentation basin via channels and surface flows. The basin is located in the eastern portion of the facility. The off-site drainage areas and associated stormwater conveyance facilities are shown on Figure 2 – SWPPP Site Plan in Appendix A.

2.1.6 Geology and Groundwater

The site is underlain by weathered to fresh, thin-bedded slates and phyllite. The weathered zone ranges from 20 to feet in depth.

Existing 35.3-acre Class III Landfill: The class III landfill area is comprised of buried refuse, which is covered by a four different landfill cover sections that vary by the area of the landfill.

1. A prescriptive final cover was installed on 4.9 acres of the northern and southeastern sideslopes of the Class III unit during October of 1997. This cover consists of a two-foot thick foundation layer, a one-foot thick low permeability layer, and a one-foot thick vegetative layer.
2. In the fall of 1998, an engineered alternative final cover was installed on 14.6 acres of the top and eastern sideslopes of the Class III unit. The engineered alternative final cover uses a Geosynthetic Clay Liner (GCL) in place of the prescriptive cover's one-foot thick

low permeability layer. The cover consists of a two-foot thick foundation soil layer, a GCL layer, and a one-foot thick vegetative soil layer.

3. On the remaining portion of the Class III landfill that has been closed has a second engineered alternative final cover that consists of (from bottom to top): one- foot thick foundation layer, one-foot thick compacted clay layer, a 60-mil linear low-density polyethylene (LLDPE) geomembrane, and a one-foot thick vegetative soil layer capable of sustaining plant growth.
4. The inactive portion of the Class III Landfill that is adjacent to the active Class II disposal area has an interim cover that consists of a one-foot thick layer of low permeability soils.
5. The active Class II disposal area has interim cover over the sludge that consists of a one-foot thick layer of onsite soils.

The soils and geology within the sprayfields are sandy loam approximately one to two feet thick. The sandy loam soils are underlain by friable rock fill.

Ground water beneath the facility occurs in fractured bedrock, valley alluvium, and the underground mine workings. Groundwater occurs beneath the site at approximately 10 feet to 80 feet below ground surface. The groundwater gradient is toward the east and southeast. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, and industrial service and process supply.

2.2 OPERATIONS SCHEDULE

The Union Mine Disposal Site operates Monday through Friday from the hours of 8:00 a.m. to 5:00 p.m. Industrial activities consist of disposal and/or processing operations. To a lesser extent the maintenance, repair, and cleaning of heavy equipment and site vehicles, including the storage and use of fuels and lubricants.

This SWPPP will be implemented, and a copy made available to all facility staff at all times. A copy will be available to regulatory agency personnel upon request.

If industrial activities are temporarily suspended for ten (10) or more consecutive calendar days during a reporting year, BMPs that are necessary to achieve compliance with this General Permit during the temporary suspension of the industrial activity will be identified and incorporated into the SWPPP.

2.3 POLLUTANT SOURCE ASSESSMENT

This section presents a list of all industrial materials and potential pollutant sources at the Union Mine Disposal Site. It identifies specific pollutants associated with these sources and pollutant sources that are most susceptible to stormwater exposure.

2.3.1 Description of Potential Pollutant Sources

Table 2.1 includes a list of industrial activities and associated materials that are anticipated to be used onsite. These activities and associated materials will or could potentially contribute pollutants to stormwater runoff. The anticipated activities and associated pollutants provided in

Table 2.1 are the basis for selecting the BMPs for the facility as described in Section 3. Locations of all material stockpiles, storage areas, anticipated pollutants, and associated BMPs are show on the Site Map(s) in Appendix A.

Class II Disposal Operations: Avoiding a discharge of leachate, condensate, contact water from waste disposal operations, or from other processes onsite is the key control issue. When storm water comes in direct contact with wastes during a rain event rain, it results in the generation of leachate and contamination of storm water. Maintaining separation between storm water and waste material is managed by various means onsite. The disposal operations are typically scheduled once every three months, which allows the site to avoid disposal operations during storm events. At the end of the disposal operations, a minimum of one foot of interim cover soils is placed over the Class II wastes, to protect the waste material from the storm water generated by a future event.

Landfill gas condensate and leachate generated from the decomposition of waste is conveyed away from the waste prism via high-density polyethylene (HDPE) or corrugated polyethylene (CPE) pipes as part of the landfill gas collection system and the leachate collection and removal system (LCRS), respectively. These liquids are discharged into the 2,000,000 million-gallon Class II Surface Impoundment. The liquid waste in the Class II Impoundment is either allowed to evaporate or pumped to the Waste Water Treatment Facility. The Class II Surface Impoundment is double lined with a leak detection system. The pond is design to contain the volume of leachate generated by the landfill, and a 100-year 24-hour event over its drainage area, while maintaining a minimum of 2 feet of freeboard.

Fuel and Engine Oil Management: Waste oil that is generated onsite is stored in the site's waste-oil storage tank, which is a dual walled (double containment) tank. The waste oil from the storage tank is pumped into a licensed waste hauler (subcontractor) truck and hauled off-site for recycling.

A 1,000-gallon above ground double walled diesel tank is located adjacent to the centrifuge building. The fuel is utilized in on-site diesel powered equipment.

Septage Treatment Processing: The septage treatment facility treats wastewater pumped from septic tanks, portable toilet wastewater, leachate, and landfill gas condensate generated onsite. Only domestic waste is accepted from off-site sources. Storm water that comes into contact with any phase of the treatment process that comes into contact with storm water is allowed does not enter the storm water discharge system, but is directed to the Class II Surface Impoundment.

Employee and Visitor Vehicle Parking: Vehicle parking areas are inspected regularly for fluid leaks. The parking lot is kept clean and clear of debris using dry sweeping methods.

Household Hazardous Waste Storage: Most Household Hazardous Waste (HHW) material is stored in the HHW storage building, pesticides are stored in an enclosed storage shed, and waste car batteries are stored in enclosed containers.

All material storage containers are inspected for spills or leaks. If a leak is discovered, it is cleaned with absorbent materials specifically chosen to clean-up HHW spills or leaks.

Waste oil, stored at the HHW facility is stored in a double-walled tank and is removed regularly by a licensed waste hauler for recycling off-site.

Closed Class III Landfill, Active Class II Landfill and Soil Stockpile: The active landfill and stockpile areas are sprayed with water to control dust as needed. Placement of straw bales and silt fences and construction of a straw bale filtration system at the downstream point of the Class II landfill is performed to minimize erosion and turbidity. Vegetation is maintained on areas that are either closed or inactive.

Table 2.1 Industrial Activities and Associated Materials

Industrial Activity	Associated Industrial Materials	Material Quantity	Material Physical Characteristics	Material Location	Associated Pollutants	Stormwater Exposure Pathway
Vehicle/Equipment Parking	Leaking vehicle fluids including hydraulic and radiators	Varies – typically four to six vehicles at the site.	Liquid	Employee/Visitor Parking Lot and Office Area	Oil and Grease, Sediments	Contamination carried into the storm drain by surface flows
Diesel Fuel Dispensing	Fuel Spills	1000 gallons	Liquid	Employee/Visitor Parking Lot and Office Area	Oil and Grease, sediments	Contamination carried into the storm drain by surface flows
Sludge dewatering, Vehicle/Equipment Washing/Digester Processing Equip	Leaking equipment (i.e., hydraulic lines). Leaking chemical containers. Wash water.	55 gallons	Liquid	Centrifuge Building/Material Storage/Blower Building	Oil and Grease	Contamination carried into the storm drain by surface flows
Chemical Storage; Waste Oil Storage; Waste Car Battery Storage; Pesticide Storage	Leaking chemical containers and tanks.	55 gallons	Liquid and powder.	Household Hazardous Waste Storage and Transfer Facility	Various Chemicals	No storage areas are exposed to storm water.

Table 2.1 Industrial Activities and Associated Materials

Industrial Activity	Associated Industrial Materials	Material Quantity	Material Physical Characteristics	Material Location	Associated Pollutants	Stormwater Exposure Pathway
Inactive Class III Landfill; Class II Landfill Operations	Soil erosion and dust. Sludge	300 tons/day	Liquid and solids.	Closed Class III Landfill, Class II Landfill, and Soil Stockpile	Sediments, leachate	Sediments and possibly leachate through erosion
Landfill Gas Extraction/Treatment and Leachate Collection	Landfill gas condensate and leachate.	Varies	Liquid	Landfill Gas (LFG) and Leachate Collection Facilities	Leachate and Condensate	Limited exposure to leachate. Leachate and Condensate conveyed in a separate collection system

2.3.2 Significant Spills and Leaks

Table 2.2 includes a list of industrial materials where spills and leaks have potential to occur, and includes material characteristics, quantities, locations, and containers. Spills and leaks will be prevented by implementing the BMPs described in Section 3.

Table 2.2 Potential Material Spills and Leaks

Industrial Material	**Material Physical Characteristics**	**Material Quantity**	**Material Container**	**Material Location**
Catronic Polymer	Liquid	1,000 Gallons	250 Gallon Poly Tote Container	Solids Dewatering Facility
Diesel Fuel	Liquid	1,000 Gallons	Above Ground Tank	Near the Surge Basin
Grease and Gear Oil	Liquid/Solid	110 Gallons	55-GallonPurchased Containers	Blower Building
Sodium Hypochlorite	Liquid	416 Gallons	55-GallonPoly Drums	Blower Building
Leachate	Liquid	Variable	Class II Surface Impoundment	Class II Surface Impoundment
Condensate	Liquid	Variable	Class II Surface Impoundment	Class II Surface Impoundment
Household Hazardous Waste	Liquid/Powder/Solid	Variable	Poly and Metal Drums	HHWS Building
Sludge/MSW	Liquid/Solid	300 tons/day	Landfill	Landfill
Septic Wastes	Liquid/Solid	No Limit	Variable	Septage Treatment Facility

2.4 IDENTIFICATION OF NON-STORMWATER DISCHARGES (NSWDs)

Non-stormwater discharges (NSWDs) consist of discharges, which do not originate from precipitation events. The General Permit provides allowances for specified NSWDs provided they:

- Do not cause erosion;
- Do not carry other pollutants;
- Are not prohibited by the local MS4; and
- Do not require a separate NPDES Permit from the Regional Water Board.

NSWDs into storm drainage systems or waterways, which are not authorized under the General Permit and listed in the SWPPP, or authorized under a separate NPDES permit, are prohibited.

Non-stormwater discharges that are authorized at this facility include the following:

- Discharges from Fire Fighting Activity
- A/C Condensate
- Fire Hydrant Flushing
- Irrigation Drainage
- Vehicle Washing

Additionally, the spray fields are an allowed non-storm water discharge pursuant to Waste Discharge Requirements (WDR) Order No. R5-2006-0019. The water from the POTW must meet effluent guidelines outlined in WDR Order No. R5-2006-0019 and is treated with sodium hypochlorite (to sanitize) prior to spraying onto the field.

Vehicle and equipment washing onsite during summer months may be performed in the parking lot and wash water is directed to the Class II Surface Impoundment or it may be performed in the centrifuge room (especially in winter months) where the wash water is circulated into the septage treatment facility.

These authorized NSWDs will be managed with the stormwater and non-stormwater BMPs described in Section 3 of this SWPPP. These BMPs are implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards; and
- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

Monthly visual observations will be conducted according to the General Permit (Section XI.A.1) for NSWDs and sources to ensure adequate BMP implementation and effectiveness. Monthly visual observations include observations for evidence of unauthorized NSWDs.

Steps will be taken, including the implementation of appropriate BMPs as defined in Section 3, to ensure that unauthorized NSWDS are eliminated, controlled, disposed off-site, or treated on-site.

There are no discharge(s) authorized by (a) regional NPDES permit(s). However, much of the requirements for the handling of the liquids generated by the Septage Treatment Plant and the Landfill are not the subject of the SWPPP as they are regulated under WDRs R5-2006-019 (Septage Facility) and R5-2006-020, respectively.

2.5 REQUIRED SITE MAP(S) INFORMATION

The facility's Site Map(s) is (are) provided in Appendix A, and include(s) all information required by the General Permit. The maps include information regarding the facility boundary and stormwater drainage areas, nearby water bodies, locations of stormwater collection and conveyance systems including outfalls, locations and descriptions of all industrial activities and materials, and locations and descriptions of all structural control measures.

A summary of all information provided in the Site Map(s) is provided in Table 2.4 below.

Table 2.4 Required Site Map(s) Information Checklist

Included on Site Map(s)? Yes/No/ NA	Required Element
Yes	The facility boundary
Yes	Stormwater drainage areas within the facility boundary
Yes	Portions of any drainage area impacted by discharges from surrounding areas
Yes	Flow direction of each drainage area
Yes	On-facility surface water bodies
Yes	Areas of soil erosion
Yes	Location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.)
N/A	Location(s) of municipal storm drain inlets that may receive the facility's industrial stormwater discharges and authorized NSWDs
Yes	Locations of stormwater collection and conveyance systems and associated points of discharge, and direction of flow
Yes	Any structural control measures (that affect industrial stormwater discharges, authorized NSWDs, and run-on)
Yes	All impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures
Yes	Locations where materials are directly exposed to precipitation
N/A	Locations where significant spills or leaks (Section X.G.1.d of the General Permit) have occurred
Yes	Areas of industrial activity subject to the General Permit

Table 2.4 Required Site Map(s) Information Checklist

Included on Site Map(s)? Yes/No/ NA	Required Element
Yes	All storage areas and storage tanks
Yes	Shipping and receiving areas
Yes	Fueling areas
Yes	Vehicle and equipment storage/maintenance areas
Yes	Material handling and processing areas
Yes	Waste treatment and disposal areas
Yes	Dust or particulate generating areas
N/A	Cleaning and material reuse areas
Yes	Any other areas of industrial activity which may have potential pollutant sources

Section 3 Best Management Practices

3.1 MINIMUM BMPs

All minimum BMPs that are required by the General Permit and necessary to meet the facility conditions will be implemented. Guidance for BMP implementation is provided in the CASQA Stormwater BMP Handbook Portal: Industrial and Commercial Fact Sheets and the relevant fact sheets are included in Appendix G. Sections 3.1.1 through 3.1.5 list the requirements for each of these minimum BMPs. Minimum BMPs will be implemented for additional targeted industrial activities, equipment, and materials as necessary. If any of the required minimum BMPs are applicable but cannot be implemented, an explanation and alternative approach will be provided in the following sections.

Table 3.1 provides a list of the five minimum General Permit BMP elements that are included in the relevant BMP fact sheets and indicates which BMPs are implemented at the facility. Employee Training, described in Section 3.1.6, and Quality Assurance and Record Keeping, described in Section 3.1.7, are additional minimum BMPs that will be implemented.

As required by the General Permit, a summary of all implemented BMPs is included in Section 3.3. The schedule for BMP implementation and the requirements for inspection and maintenance are contained in Section 4.

Table 3.1 Minimum BMPs

CASQA Fact Sheet Number	CASQA BMP Fact Sheet Name	Addresses Minimum General Permit BMP Requirements					BMP to be Implemented?		
		Good Housekeeping	Preventative Maintenance	Spill and Leak Prevention and Response	Material Handling and Waste Management	Erosion and Sediment Control	YES	NO	Not Applicable
SC-10	Non-Stormwater Discharges	✓		✓			✓		
SC-11	Spill Prevention, Control, and Cleanup			✓			✓		
SC-20	Vehicle and Equipment Fueling	✓	✓	✓	✓		✓		
SC-21	Vehicle and Equipment Cleaning	✓	✓	✓	✓		✓		
SC-22	Vehicle and Equipment Maintenance and Repair	✓	✓	✓	✓		✓		
SC-30	Outdoor Loading and Unloading	✓		✓	✓		✓		
SC-31	Outdoor Liquid Container Storage	✓	✓	✓	✓		✓		
SC-32	Outdoor Equipment Operations	✓	✓	✓	✓		✓		
SC-33	Outdoor Storage of Raw Materials	✓	✓	✓		✓	✓		
SC-34	Waste Handling and Disposal	✓	✓	✓	✓		✓		
SC-35	Safer Alternative Products								✓
SC-40	Contaminated or Erodible Surfaces					✓	✓		
SC-41	Building and Grounds Maintenance	✓		✓	✓		✓		
SC-42	Building Repair, Remodeling, and Construction	✓		✓	✓	✓	✓		
SC-43	Parking Area Maintenance	✓	✓	✓			✓		
SC-44	Drainage System Maintenance	✓	✓	✓			✓		
Additional BMPs Implemented:									
Security Systems									

3.1.1 Good Housekeeping

The following good housekeeping measures will be implemented in accordance with the General Permit (Section X.H.1.a):

- Observe all outdoor areas associated with industrial activity including stormwater discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or stormwater run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials will be cleaned and disposed of properly;
- Minimize or prevent material tracking;
- Minimize dust generated from industrial materials or activities;
- Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible;
- Cover all stored industrial materials that can be readily mobilized by contact with stormwater;
- Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed via by the wind or contact with stormwater;
- Prevent disposal of any rinse/wash waters or industrial materials into the stormwater conveyance system;
- Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking area) that contact industrial areas of the facility; and
- Minimize authorized NSWDs from non-industrial areas (e.g., potable water, fire hydrant testing, etc.) that contact industrial areas of the facility.

BMPs to be implemented are summarized in Table 3.1 and the BMP fact sheets are included in Appendix G.

3.1.2 Preventative Maintenance

The following preventative maintenance measures will be implemented in accordance with the General Permit (Section X.H.1.b):

- Identify all equipment and systems used outdoors that may spill or leak pollutants;
- Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks;
- Establish an appropriate schedule for maintenance of identified equipment and systems; and
- Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks.

Specific preventative maintenance BMPs to be implemented at the facility are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

The preventive maintenance program includes inspection of facility equipment and vehicles to ensure that that they are not leaking.
The preventative maintenance program includes the inspections of the stormwater management infrastructure to detect evidence of a release or conditions, which may lead to a failure resulting in the discharge into storm water.

Storm Water Management Devices

The preventive maintenance program applies to the following storm water equipment and systems used on-site to minimize pollutants from entering storm water:

- drainage ditches;
- rip-rap;
- berms and dikes;
- dust control;
- sediment traps and basins;
- vegetation protection;
- diversion grading; and
- pavement.

Each system and piece of equipment is inspected monthly. Inspection procedures vary depending upon the equipment/system; however, the major elements of the inspection program include:

- cracks or structural failures;
- part or pieces of equipment not functioning properly;
- degradation or deterioration of the unit; and
- need for cleaning or emptying the unit.

Inspection records are available for review at the Leachate/Septage Treatment Facility with the Operating Records. Inspections will be conducted in accordance with on-site standard operating procedures.

Vehicle Maintenance

A vehicle and equipment preventive maintenance program to keep the vehicles, backhoe, quad and forklift in top mechanical condition; provide for the safe operation of vehicles; limit operating costs; and maximize operating life of components. This maintenance is performed by Department of Transportation. The preventive maintenance programs minimizes hydraulic and motor oil leaks;

3.1.3 Spill and Leak Prevention and Response

The following spill and leak prevention and response measures will be implemented in accordance with the General Permit (Section X.H.1.c):

- Establish procedures and/or controls to minimize spills and leaks;
- Develop and implement spill and leak response procedures to prevent industrial materials from discharging through the stormwater conveyance system. Spilled or leaked industrial materials will be cleaned promptly and disposed of properly;

- Identify and describe all necessary and appropriate spill and leak response equipment, location(s) of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and
- Identify and train appropriate spill and leak response personnel.

Specific spill and leak prevention and response BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

Fueling and maintenance operations activities are primarily associated with the potential pollutant sources identified in Table 2.2. Fuel tanks for diesel equipment are filled as needed. All fueling/filling is conducted in accordance with the site's approved Spill Prevention Control and Countermeasure Plan. Site heavy equipment are refueled by a trained refueling technician or operators trained in fueling and spill response procedures.

El Dorado County will implement the emergency spill response plan as discussed in the Spill Prevention Control and Countermeasure (SPCC) Plan for any spill, leak, or release of petroleum product that could reasonably discharge into waters of the United States. The SPCC Plan describes in detail:

- spill response;
- spill reporting procedures;
- communication systems; and
- El Dorado County employees responsible for spill response, clean up and implementing emergency response.

Spill reporting procedures for petroleum products are addressed in the SPCC Plan. The SPCC Plan is hereby incorporated by reference into the Pollution Prevention Plan.

Spill response procedures for each Significant Material listed in Table 1 are summarized below.

<u>Sodium Hypochlorite</u>

If spills or leaks are observed during operations or routine inspections, the liquids are recovered by adsorbent materials and properly disposed. Sodium Hypochlorite is stored in doors and spills or leaks are exposed to storm water. Major spills possible during off-loading are addressed in the hazardous materials response plan.

<u>Polymer Compound</u>

Polymer compound is stored in the sludge processing building. Leaks and spills are flushed to the waste collection system and are not exposed to storm water.

<u>Pesticides</u>

Pesticides are stored in a secondarily contained hazardous materials storage building. Handling of the pesticides are performed inside the building and placed in vehicles for transport to treatment locations. Leaks or spills are contained within the building and are recovered with proper equipment and reused or properly disposed.

<u>No.2 Diesel</u>

If leaks or spills are observed during operations or routine inspections, the liquids are recovered by absorbent and properly disposed. Specific material handling procedures to minimize diesel fuel from entering a storm water conveyance or drainage point include containment berms and spill cleanup kits. A Spill Report Form is completed for spills of Significant Materials. Diesel fuel on parking lots associated with drips and leaks are minimized by implementing the landfill operator's preventive maintenance program for vehicles. Additional methods used to minimize contact with storm water include inspections, sweeping of the paved areas and addressing drips and leaks from vehicles with absorbent material.

Hydraulic Fluids

If leaks or spills are observed during operations or routine inspections, the liquids are recovered by absorbent and properly disposed. Specific material handling procedures to minimize hydraulic fluids from entering a storm water conveyance or drainage point include site grading. A Spill Report Form is completed for spills of Significant Materials. Hydraulic fluids on parking lots associated with drips and leaks are minimized by implementing the landfill operator's preventive maintenance program for vehicles. Additional methods used to minimize contact with storm water include inspections, sweeping of the paved areas and addressing drips and leaks from vehicles with absorbent material.

Leachate

If small leaks or spills are observed during operations or routine inspections, the liquids are recovered by absorbent and properly disposed. If large leaks or spills are observed during operations or routine inspections, the liquids will be collected and either conveyed by pipe or pumped into a tank and hauled to the Class II surface impoundment. Specific material handling procedures to minimize leachate from entering a storm water conveyance or drainage point include grading and regular monitoring.

When a leachate seep ("seep") is observed, the response must be based on the severity and persistence of the seepage. The overriding objective of the contingency response must be to contain the leachate within the footprint of the landfill.

Seepage may be mitigated by placement of additional cover, and/or by the placement and construction of a temporary piping system. The following list describes the hierarchy of responses that are followed, in order, until the seepage is mitigated.

1. Observe the seep, record the location, and estimated flow rate. Report this information to the RWQCB contact within 24 hours.
2. If seepage is threatening to flow off site, immediately block the path of migration with sandbags or soil berms. Divert surface runoff away from the seepage area with soil or sandbag berms.
3. Import and place additional cover soil over the seepage area, extending at least 5 feet to either side of the seep. Compact the soil to the best extent practicable, by track walking the additional soil with heavy equipment. Avoid excavating soil from the vicinity of the seep. Avoid damaging the existing cover soil with heavy equipment, if possible.
4. If seepage recurs, continue placing additional soil cover if practicable.
5. If measurable flow continues to recur despite the additional soil placement, or if soil cannot be placed or compacted due to saturated ground conditions, temporary piping for

drainage into the Class II impoundment will be installed. In order to intercept seepage before it surfaces, locate the seep just uphill from the observed surface breakout.

6. If additional rainfall is forecasted, construct temporary berms to divert runoff away from the seep. Observe the seepage area regularly for a few days and record the flow of leachate into the temporary piping system.
7. It may also be necessary to construct lateral drains to collect seepage and convey it to the temporary piping system. Temporary drains can be constructed using 3-inch or 4-inch diameter corrugated polyethylene drainage pipe, covered with gravel. Such drains should be covered with soil or an impermeable material such as visqueen, as appropriate, to prevent influx of rainwater or runoff.

Lubricating Fluids

If leaks or spills are observed during operations or routine inspections, the liquids are recovered by absorbent and properly disposed. Specific material handling procedures to minimize lubricating fluids from entering a storm water conveyance or drainage point include grading and regular monitoring. A Spill Report Form is completed for spills of Significant Materials. Lubricating fluids on paved areas associated with drips and leaks is minimizes by implementing landfill operators preventive maintenance program for vehicles. Additional methods used to minimize contact with storm water include inspections and addressing drips and leaks from vehicles with absorbent material.

Organic Solvents

If leaks or spills are observed during operations or routine inspections, the liquids are recovered by absorbent and properly disposed. Specific material handling procedures to minimize organic solvents from entering a storm water conveyance or drainage point include drains and grading. A Spill Report Form is completed for spills of Significant Materials.

Soil Material

If spills are observed during operations or routine inspections, the solids are recovered by scraper or motor grader and reused. Specific material handling procedures to minimize soil material from entering a storm water conveyance or drainage point include concrete conveyance structures and vegetation.

Solid Waste

If leaks or spills are observed during operations or routine inspections, the liquids or solids are recovered and properly disposed. Specific material handling procedures to minimize solid waste from entering a storm water conveyance or drainage point include grading and daily cover. El Dorado County maintains records of all Significant Material spills. These records are kept to minimize reoccurrence and comply with applicable federal, state, local regulations.

3.1.4 Material Handling and Waste Management

The following material handling and waste management measures will be implemented in accordance with the General Permit (Section X.H.1.d):

- Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm event;

- Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with stormwater during handling;
- Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
- Divert run-on and stormwater generated from within the facility away from all stockpiled materials;
- Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures (Section X.H.1.c); and
- Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.

Specific material handling and waste management BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

Storm water has a very low potential for containing pollutants as these are maintained within the solids dewatering facility and blower building. Lubricating liquids and other associated materials are stored in the enclosed blower building to prevent contact with storm waters. The predicted direction of pollutant flow from these areas would likely follow the course of discharge shown in Figure 2.

The centrifuge building, and blower building contain those materials detailed in Table 2.2, but the buildings are completely enclosed and all drainage is directed back to the digester for treatment. The household hazardous waste storage facility (HHWS) contains the items listed in Table 2.2 in poly drums on secondary containment pallets.

3.1.5 Erosion and Sediment Controls

The following erosion and sediment control measures will be implemented in accordance with the General Permit (Section X.H.1.e):

- Implement effective wind erosion controls;
- Provide effective stabilization for all disturbed soils and other erodible areas prior to a forecasted storm event;
- Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;
- Divert run-on and stormwater generated from within the facility away from all erodible materials; and
- If sediment basins are implemented, ensure compliance with the design storm standards in Section X.H.6. of the General Permit.

Specific erosion and sediment control BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.1 and the BMP fact sheets are included in Appendix G.

- **Covering:** All closed landfill areas have final cover, which is vegetated to minimize sediment transport. Inactive landfill slopes, which are not bedrock, are also vegetated.
- **Curbs, Berms, Earthen Dikes:** Curbs, berms and earthen dikes are maintained through the implementation of a post-closure maintenance plan. These structures divert storm water to a particular area for treatment or release, to minimize contact of storm water from industrial and non-industrial areas. They are also used for channel stabilization.
- **Drainage Swales/Ditches:** Drainage swales and ditches convey surface water runoff without causing erosion. Drainage swales and ditches are lined to minimize soil erosion and sediment transport.
- **Flow Attenuation by Vegetation or Natural Depressions:** Flow attenuation devices such as vegetation or natural depressions provide pollutant removal capabilities, allow infiltration and reduce the storm water erosion potential. They also enhance habitat values and site appearance. Vegetation on the landfill cover attenuates the stormwater flows.
- **Velocity Dissipation Devices:** Velocity dissipation devices slow the flow of storm water discharged from the facility to lessen the amount of erosion caused by the surface water flow. Velocity dissipation devices include rip-rap, hay/straw bales, concrete rubble, etc.
- **Down Drain:** A down drain is a structure that extends from the top of a slope to the bottom slope. It is used to convey collected surface water runoff down the slope without causing erosion.
- **Outlet Protection:** Rocks, concrete or protection mats are placed at the outlet end of culverts or channels to reduce the depth, velocity and energy of water to minimize downstream erosion.
- **Roofing:** Roofing is installed to minimize contact of precipitation with Significant Materials.
- **Subsurface Drains:** Subsurface drains transport water to an area where it can be effectively managed. Subsurface drains are constructed of pipe and drainage material.

During the initial storm events storm water is directed to the Class II Surface Impoundment to prevent “first flush” discharge to the storm water system. After the first few storms, the system is then switched to direct storm water to the southern sedimentation pond.

3.1.6 Employee Training Program

An employee-training program will be implemented in accordance with the following requirements in the General Permit (Section X.H.1.f):

- Ensure that all team members implementing the various compliance activities of this SWPPP are properly trained in topics including but not limited to: BMP implementation, BMP effectiveness evaluations, visual observations, and monitoring activities;
- Prepare or acquire appropriate training manuals or training materials;
- Identify which personnel need to be trained, their responsibilities, and the type of training they will receive;

- Provide a training schedule; and
- Maintain documentation of all completed training classes and the personnel that received training in the SWPPP.

The Pollution Prevention Team will be trained in implementing the various compliance activities specified in this SWPPP, and documentation of training activities is retained in SWPPP Appendix C. To promote stormwater management awareness specific for this facility, refresher training will be provided annually.

Task specific training for all employees engaged in activities that have the potential to cause stormwater pollution will be conducted when new employees are hired and refresher training will be provided annually.

3.1.7 Quality Assurance and Record Keeping

The following quality assurance and record keeping activities will be performed in accordance with the requirements in the General Permit (Section X.H.1.g):

- Develop and implement management procedures to ensure that appropriate staff implements all elements of the SWPPP, including the Monitoring Implementation Plan (SWPPP Section 5);
- Develop a method of tracking and recording the implementation of BMPs identified in the SWPPP; and
- Maintain the BMP implementation records, training records, and records related to any spills and clean up related response activities for a minimum of five (5) years as required in the General Permit (Section XXI.J.4).

BMPs will be implemented according to the schedule and procedures presented in SWPPP Section 4. BMPs will be implemented by properly trained team members as documented in Appendix C.

Visual observations will be performed as described in SWPPP Section 5.5. Potential pollutant sources and BMPs will be inspected during visual observations, and new BMPs will be implemented as needed. Records of visual observations of BMP implementation will be retained in Appendix H.

Paper or electronic records of documents required by this SWPPP will be retained for a minimum of five (5) years from the date generated or date submitted, whichever is later, for the following items:

- Employee Training Records;
- BMP Implementation Records;
- Spill and Clean-up Related Records;
- Records of Monitoring Information; and
    - The date, exact location, and time of sampling or measurement;
    - The date(s) analyses were performed;

- The individual(s) that performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses;

- Annual Reports.

3.2 ADVANCED BMPs

3.2.1 Exposure Minimization BMPs

Storm resistant shelters are installed onsite to prevent the contact of stormwater with industrial activities and material. The locations of these shelters and associated industrial activities and materials are presented in Table 3.2.

Table 3.2 Exposure Minimization BMPs

Shelter Location/Description	Associated Industrial Activity/Material
Blower Building	Digester processing equipment/grease, gear oil, sodium hypochlorite,
Centrifuge Building	Sludge dewatering and vehicle-equipment washing/wash water
Household Hazardous Waste Storage Building	Chemical Storage/household hazardous waste

3.2.2 Stormwater Containment and Discharge Reduction BMPs

Stormwater containment and discharge reduction BMPs include BMPs that divert, reuse, contain, or reduce the volume of stormwater runoff. Specific stormwater containment and discharge reduction BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.3 and the BMP fact sheets are included in Appendix G.

Table 3.3 Stormwater Containment and Discharge Reduction BMPs

CASQA Fact Sheet Number	CASQA BMP Factsheet Name	Meets Advanced BMP Requirement	BMP Used		BMP Location, Runoff Sources, and Potential Pollutants
			YES	NO	
TC-10	Infiltration Trench	✓		✓	
TC-11	Infiltration Basin	✓		✓	
TC-12	Harvest and Reuse	✓		✓	
TC-20	Wet Pond	✓		✓	
TC-21	Constructed Wetland	✓		✓	
TC-22	Extended Detention Basin	✓	✓		
TC-30	Vegetated Swale				
TC-31	Vegetated Buffer Strip				
TC-32	Bioretention	✓		✓	
TC-40	Media Filter				
TC-50	Water Quality Inlet				
TC-60	Multiple Systems	✓		✓	
MP-20	Biotreatment				
MP-40	Stormwater Filter				
MP-50	Wet Vault				
MP-51	Gravity Separator				
MP-52	Drain Inlet Insert				
Alternate BMPs Used:					**If used, state reason:**

3.2.3 Treatment Control BMPs

Treatment control BMPs include one or more mechanical, chemical, biologic, physical, or any other treatment process technology and is sized to meet the treatment control design storm standard. Specific treatment control BMPs to be implemented at the Union Mine Disposal Site are provided in Table 3.4 and the BMP fact sheets are included in Appendix G.

3.2.4 Other Advanced BMPs

None

Table 3.4 Treatment Control BMPs

CASQA Fact Sheet Number	CASQA BMP Factsheet Name	Addresses O&M for Advanced BMPs	BMP Used		BMP Location, Runoff Sources, and Potential Pollutants
			YES	NO	
TC-10	Infiltration Trench	✓		✓	
TC-11	Infiltration Basin	✓		✓	
TC-12	Harvest and Reuse			✓	
TC-20	Wet Pond	✓		✓	
TC-21	Constructed Wetland	✓		✓	
TC-22	Extended Detention Basin	✓	✓		
TC-30	Vegetated Swale	✓		✓	
TC-31	Vegetated Buffer Strip	✓		✓	
TC-32	Bioretention	✓		✓	
TC-40	Media Filter	✓		✓	
TC-50	Water Quality Inlet	✓		✓	
TC-60	Multiple Systems	✓		✓	
MP-20	Biotreatment	✓		✓	
MP-40	Stormwater Filter	✓		✓	
MP-50	Wet Vault	✓		✓	
MP-51	Gravity Separator	✓		✓	
MP-52	Drain Inlet Insert	✓		✓	
Alternate BMPs Used:					**If used, state reason:**

3.3 BMP SUMMARY TABLE

Table 3.5 summarizes the industrial activities, materials, pollutant sources, potential pollutants, and BMPs being implemented to prevent discharge of pollutants in stormwater runoff. Descriptions of the specific BMPs being implemented were provided in previous subsections. Implementation and maintenance of BMPs is described in Section 4.

Table 3.5 BMP Summary Table

Industrial Activity/Material	Pollutant Sources	Potential Pollutants	BMPs Implemented
Vehicle/Equipment Parking	Leaking vehicle fluids including hydraulic and radiators	Oil and Grease Sediments	Routine maintenance of trucks to prevent leaks Vehicle parking areas are inspected as necessary for fluid leaks and adsorbent material is used for cleanup. The parking area is kept clean and clear of leaks and debris using dry sweeping methods.
Diesel Fuel Dispensing	Fuel Spills	Oil and Grease Sediments	Diesel fuel tank is double walled secondary containment system. All industrial activities are conducted inside buildings SPCC Plan is in-place and staff is trained on spill response procedures.
Sludge dewatering, Vehicle/Equpment Washing/Digester Processing Equip	Leaking equipment (i.e., hydraulic lines). Leaking chemical containers. Wash water.	Oil and Grease Sediments	Inspection for pipe and pump leaks. Routine maintenance of equipment and cleanup of leaks and/or spill with absorbent material. Inspection for spills or leaks of chemical containers. Use of absorbent materials to clean-up any spills or leaks. Repair leak or transfer to new container. Chemical containers are stored inside blower building. Building drains to sump, which is directed to the digester for treatment. Wash water from centrifuge building is directed to the digester.
Chemical Storage; Waste Oil Storage; Waste Car Battery Storage; Pesticide Storage	Leaking chemical containers and tanks.	Various Chemicals	Chemicals are stored in areas not exposed to storm water. Storage containers have secondary containment pallets in the building; pesticides are stored in enclosed storage shed; waste car batteries are stored in enclosed containers. Inspection for spills or leaks of material storage containers. Use of absorbent materials to clean-up any spills or leaks. Waste oil is stored in a double-walled tank and is removed regularly by a licensed waste hauler for recycling off-site.

Table 3.5 BMP Summary Table

Industrial Activity/Material	Pollutant Sources	Potential Pollutants	BMPs Implemented
Inactive Class III Landfill; Class II Landfill Operations	Soil erosion and dust. Sludge	Sediments	Spray active landfill and stockpile areas with water to control dust as needed. Placement of straw bales and silt fences. Construction of a straw bale filtration system at the downstream point of the Class II landfill. Maintain vegetation on areas that are either closed or inactive. Dispose of sludge only in dry weather and cover at the end of each working day. Storm water basins allow solids to settle prior to discharge.
Landfill Gas Extration/Treatment and Leachate Collection	Landfill gas condensate and leachate.	Condensate and Leachate	Collection of condensate and leachate is collected in a separate system with double containment and conveyed to the Class II Surface Impoundment.

Section 4 BMP Implementation

4.1 BMP IMPLEMENTATION SCHEDULE

All BMPs discussed in this plan are currently installed or current part or operations. BMPs will be implemented as necessary to reduce or prevent transport of industrial pollutants in stormwater runoff. Slight modifications to this schedule may be necessary to achieve this goal. Records of BMP implementation will be included in Appendix H.

4.2 BMP INSPECTION AND MAINTENANCE

The General Permit requires, at a minimum, monthly observations of BMPs, along with inspections during sampling events. Monthly observations will be conducted during daylight hours of scheduled facility operating hours and on days without precipitation. A BMP observation checklist must be filled out for and maintained on-site with the SWPPP. The observation checklist includes the necessary information as discussed in Section 5.5. A blank observation checklist can be found in Appendix I, and completed checklists will be kept in Appendix H or in an accompanying file/binder that is referenced in the SWPPP and readily accessible on site.

BMPs will be maintained regularly to ensure proper and effective functionality. If necessary, corrective actions will be implemented within 72 hours of identified deficiencies and associated amendments to the SWPPP will be prepared and documented.

Specific guidance for maintenance, observation, and repair of advanced BMPs can be found in the BMP Factsheets in Appendix G.

Section 5 Monitoring Implementation Plan

5.1 Purpose

This Monitoring Implementation Plan was developed to address the following objectives:

1. Identify the monitoring team;
2. Describe weather and rain event tracking procedures;
3. Describe discharge locations, visual observations procedures
4. Describe visual observation response procedures;
5. Describe sample collection and handling procedures;
6. Describe field instrumentation calibration instructions and intervals;
7. Provide justification for alternative discharge locations, Representative Sample Reduction (RSR), and Qualified Combined Samples (QCS), as applicable; and
8. Provide an example Chain of Custody form to be used when handling and shipping water quality samples to the laboratory.

Note: that the Septage Treatment Plant and the Class II Landfill are also required to meet the Waste Discharge Requirements r5-2006-0019 and r5-2006-0020 respectively. Each WDR has a separate monitoring and sampling requirements, these are not included in the SWPPP as they are a separate monitoring plan conducted by a separate group within the Environmental Management Division of El Dorado County.

5.2. Weather and Rain Event Tracking

Stormwater sampling and visual observations will be conducted during Qualified Storm Events (QSEs). A QSE is defined as any precipitation event that produces a discharge for at least one drainage area and is preceded by 48 hours with no discharge from any drainage area. Weather and precipitation forecasts will be tracked to identify potential QSEs.

When targeting a QSE for stormwater sampling, the appropriate team member will weekly consult the National Oceanographic and Atmospheric Administration (NOAA) for weather forecasts. These forecasts can be obtained at http://www.srh.noaa.gov/. If weekly forecasts indicate potential for significant precipitation, the weather forecast will be closely monitored during the 48 hours preceding the event. Weather reports with precipitation data should be printed and maintained with the SWPPP in MIP Attachment 1 “Weather Reports” to document precipitation totals and antecedent conditions.

5.3 Monitoring Locations

Monitoring locations are shown on the Site Map in Appendix A. Monitoring locations are described in Section 5.6.

Whenever changes in facility operations might affect the appropriateness of sampling locations, the sampling locations will be revised accordingly. All such revisions will be implemented as soon as feasible and the SWPPP amended.

5.4 Sample Collection and Visual Observation Exceptions

Safety practices for sample collection will be in accordance with the "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association).

The collection of samples or conduct visual observations is not required under the following conditions:

- During dangerous weather conditions such as flooding and electrical storms.
- Outside of scheduled site business hours.

Scheduled site business hours are presented in Section 2.2.

If monitoring (visual observations or sample collection) of the site is unsafe because of the dangerous conditions noted above then the appropriate team member will document the conditions for why an exception to performing the monitoring was necessary. The exception documentation will be filed in MIP Attachment 2 "Monitoring Records".

5.5 Visual Observation Procedures

Visual monitoring includes observations of drainage areas, BMPs, and discharge locations.

- Observations of BMPs are required to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended.
- Observations of the drainage areas are required to identify any spills, leaks, uncontrolled pollutant sources, and non-stormwater discharges.
- Observations of discharge locations are required to identify the presence of visible pollutants in stormwater discharged from the facility.

Visual observations will be performed at least once every calendar month during dry conditions. Visual observations will also be performed during stormwater sampling events when discharge is occurring.

5.5.1 Monthly Visual Observations

Monthly visual observations are necessary to document the presence of and to identify the source of any pollutants and non-stormwater flows. These should consist of observations of the outdoor facility operations, BMPs, and NSWD observations.

In the event that monthly visual observations are not performed, an explanation must be provided in the annual report.

5.5.1.1 Outdoor Facility Operations Observations

Observe potential sources of industrial pollutants including industrial equipment and storage areas, and outdoor industrial activities. Record observations of:

- Spills or leaks; and
- Uncontrolled pollutant sources

5.5.1.2 BMP Observations

Observe BMPs to identify and record:

- BMPs that are properly implemented;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

5.5.1.3 Non-Stormwater Discharge Observations

Observe each drainage area for the presence of or indications of prior unauthorized and authorized non-stormwater discharges. Record:

- Presence or evidence of any non-stormwater discharge (authorized or unauthorized);
- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.); and
- Source of discharge.

For authorized non-stormwater discharges, also document whether BMPs are in place and are functioning to prevent contact with materials or equipment that could introduce pollutants

5.5.2 Sampling Event Visual Observations

Sampling event visual observations evaluate the general appearance of the stormwater as an indicator of potential pollutants. These observations will be conducted at the same time sampling occurs at the discharge locations identified in Section 5.6.2. At each discharge location where a sample is obtained, record the following observations:

- Floating and suspended materials;
- Oil and grease;
- Discoloration;
- Turbidity;
- Odors; and
- Trash.

When pollutants are observed in the discharged stormwater, follow-up observations of the drainage area will be conducted to identify the probable source of the pollutants.

In the event that a discharge location is not visually observed during the sampling event, the location of the discharge and reasoning for not obtaining observations must be recorded.

5.5.3 Visual Monitoring Procedures

Visual monitoring will be conducted by trained team members. The name(s) and contact number(s) of the site visual monitoring personnel are listed below and their training qualifications are provided in Appendix C.

Assigned inspector: Robert Brillisour Contact phone: 530-295-0429

Alternate inspector: Chad Casner/Roy Pike Contact phone: 530-295-0429

Visual observations will be documented on the Visual Observation Log (see MIP Attachment 3 “Example Forms”). Visual observations will be supplemented with a site-specific BMP

inspection checklist. Photographs used to document observations will be referenced on the *Visual Observation Log* and maintained with the Monitoring Records in Attachment 2.

The completed logs and checklists will be kept in MIP Attachment 2 "Monitoring Records".

5.5.4 Visual Monitoring Follow-Up and Reporting

Correction of deficiencies identified by the observations, including required repairs or maintenance of BMPs, will be initiated and completed as soon as possible. Response actions will include the following:

- Report observations to the Pollution Prevention Team Leader or designated individual;
- Identify and implement appropriate response actions;
- Determine if SWPPP update is needed;
- Verify completion of response actions; and
- Document response actions.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will completed as soon as possible, and the SWPPP will be amended to reflect the changes.

BMP deficiencies identified in site observation reports and correction of deficiencies will be tracked on the *BMP Observation Checklist* and will be retained in Appendix I.

Results of visual monitoring must be summarized and reported in the Annual Report.

5.5.5 Visual Monitoring Locations

The observations identified in Sections 5.5.1 and 5.5.2 will be conducted at the locations identified in this section.

Visual monitoring locations are shown on the Site Map(s) in SWPPP Appendix A.

There are five drainage area(s) onsite. Drainage area(s) are shown on the Site Map(s) in Appendix A and are identified in Table 5.1.

Table 5.1 Facility Drainage Areas

Location Identifier	Drainage Area Name
DA-1	Steep and Wooded Natural Area 1
DA-2	Steep and Wooded Natural Area 2
DA-3	Hilly and Rocky Area
DA-4	Existing Landfill Slopes
DA-5	Household Hazardous Waste Parking

There are three discharge location(s) onsite. Site stormwater discharge location(s) are shown on the Site Map(s) in Appendix A and Table 5.2 identifies each stormwater discharge location.

Table 5.2 Stormwater Discharge Locations

Location Identifier	Discharge Location (Note Drainage Area that the discharge location drains)
S-2	Steep and Wooded Natural Area 1 & Existing Landfill Slopes
S-3	Steep and Wooded Natural Area 2 & Hilly and Rocky Area
S-8	Household Hazardous Waste Parking

There are three stormwater storage or containment area(s) onsite. Stormwater storage or containment area(s) are shown on the Site Map(s) in Appendix A and Table 5.3 identifies each stormwater storage or containment area by location.

Table 5.3 Stormwater Storage and Containment Areas

Location Identifier	Description of Containment (Note Drainage Area in which the containment is located)
North – Sedimentation Basin	Existing Landfill Slopes
South – Sedimentation Basin	Hilly and Rocky Area
West – Sedimentation Basin	Existing Landfill Slopes

5.6 Sampling and Analysis Procedures

This section describes the methods and procedures that will be followed for stormwater sampling and analysis. It contains information for sampling schedule, sampling locations, monitoring preparation, analytical constituents, sample collection, sample analysis, and data evaluation and reporting.

5.6.1 Sampling Schedule

Stormwater samples at each discharge location will be collected and analyzed from two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30).

A QSE is a precipitation event that:

- Produces a discharge for at least one drainage area; and
- Is preceded by 48 hours with no discharge from any drainage area.

5.6.2 Sampling Locations

Sampling locations include all locations where stormwater is discharged from the site. Discharge locations are shown on the Site Map(s) in Appendix A and are included in Table 5.4.
A total of three discharge location(s) have been identified on the project site for the collection of stormwater runoff samples.

Table 5.4 Sample Locations

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
S-2	North Sedimentation Basin Discharge Point	Lat. 38.648264 Long. -120.826147
S-3	South Sedimentation Basin Discharge Point	Lat. 38.647663 Long. -120.825492
S-8	Vicinity of the Household Hazardous Waste Storage and Transfer Facility	Lat. 38.650304 Long. -120.828134

5.6.3 Monitoring Preparation

Samples on the project site will be collected by the following sampling personnel:

Name/Telephone Number: Robert Brillisour/530-295-0429

Alternate(s)/Telephone Number: Chad Casner/Roy Pike/530-295-0429

An adequate stock of monitoring supplies and equipment for sampling will be available onsite prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the facility will include, but are not limited to clean powder-free nitrile gloves; sample collection equipment; coolers; appropriate number and volume of sample containers; identification labels; re-sealable storage bags; paper towels; personal rain gear; ice; and *Sampling Field Log Sheets* and Chain of Custody (CoC) forms, which are provided in MIP Attachment 3 “Example Forms”.

5.6.4 Analytical Constituents

Table 5.5 identifies the constituents identified for sampling and analysis.

Table 5.5 Analytical Constituents

Constituent	Reason
pH	Basic required constituent

Table 5.5 Analytical Constituents

Constituent	Reason
Oil and grease	Basic required constituent
Total Suspended Solids	Basic required constituent
Iron	SIC Code constituent

Note: There are other constituents that are required by the WDRs for the Septic Facility and the Landfill that are not included in this table as that sampling is conducted under a different group within the Environmental Management Division of El Dorado County.

5.6.5 Sample Collection

Samples of discharge will be collected at the designated sampling locations shown on the Site Map(s) in Appendix A. Samples from each discharge location will be collected within four (4) hours of:

- The start of the discharge; or
- The start of facility operations if the QSE occurs within the previous 12-hour period.

Sample collection is required during scheduled facility operating hours, and when sampling conditions are safe.

Grab samples will be collected and preserved in accordance with the methods identified in Table 5.6, "Sample Collection, Preservation and Analysis for Water Quality Samples" provided in Section 5.6.6. Only team members properly trained in water quality sampling will collect samples.

Sampling for pH levels is done using a pH meter that is kept on site and calibrated weekly. The pH analysis will be performed as soon as practicable, but no later than 15 minutes after sample collection.

Samples from different discharge locations will not be combined or composited prior to shipment to the analytical laboratory. Sample collection and handling requirements are described in Section 5.8.

5.6.6 Sample Analysis

Samples will be analyzed using the analytical methods identified in the Table 5.6.

Samples will be analyzed by:

Laboratory Name:	California Laboratory Services
Street Address:	3249 Fitzgerald Road
City, State Zip:	Rancho Cordova, CA 95742
Telephone Number:	(800) 638-7301
Point of Contact:	Scott Furnas and Mark Smith
ELAP Certification Number:	1233

Samples will be delivered to the laboratory by one of the following checked methods:

Facility Personnel	☒ Yes	☐ No
Picked up by Laboratory Courier	☒ Yes	☐ No
Shipped	☐ Yes	☐ No

Table 5.6 Sample Collection, Preservation and Analysis for Water Quality Samples

Constituent	Analytical Method	Minimum Sample Volume	Sample Containers	Sample Preservation	Reporting Limit	Maximum Holding Time
pH	SM 4500H+B				N/A	15 minutes
Oil and Grease	EPA 1664A	750 ml	1 liter glass	Nitric acid, refrigerate	15	28 days
Total Suspended Solids	SM 2540-D	100 ml	500 ml wide-mouth poly	Refrigerate/cooler	100	7 days
Iron	EPA 200.7	250 ml	500 ml bottle (glass or poly)	HNO3 or HCL, refrigerate	1.0	6 months
Notes:						

5.6.7 Data Evaluation and Reporting

The designated member of the Pollution Prevention Team will complete an evaluation of the water quality sample analytical results.

All sampling and analytical results for all individual samples will be submitted via SMARTS within 30 days of obtaining all results for each sampling event.

The method detection limit will be provided when an analytical result from samples taken is reported by the laboratory as a “non-detect" or less than the method detection limit. A value of zero will not be reported.

Analytical results that are reported by the laboratory as below the minimum level (often referred to as the reporting limit) but above the method detection limit will be provided.

Reported analytical results will be averaged automatically by SMARTS at the end of the reporting year. For any calculations required by the General Permit a value of zero shall be used, all effluent sampling analytical results that are reported by the laboratory as “non-detect" or less than the Method Detection Limit (MDL).

5.7 Training of Sampling Personnel

Sampling personnel will be trained to collect, maintain, and ship samples in accordance with the General Permit and this SWPPP. Training records of designated sampling personnel are provided in Appendix C.

5.8 Sample Collection and Handling

5.8.1 Sample Collection

Samples will be collected at the designated sampling locations shown on the Site Map(s) and listed in the preceding sections. Samples will be collected, maintained and shipped in accordance with the requirements in the following sections.

Grab samples will be collected and preserved in accordance with the methods identified in preceding sections.

To maintain sample integrity and prevent cross-contamination, sample collection personnel will follow the protocols below.

- Collect samples (for laboratory analysis) only in analytical laboratory-provided sample containers;
- Wear clean, powder-free nitrile gloves when collecting samples;
- Change gloves whenever something not known to be clean has been touched;
- Change gloves between sites;
- Decontaminate all equipment (e.g. bucket, tubing) prior to sample collection using a trisodium phosphate water wash, distilled water rinse, and final rinse with distilled water. (Dispose of wash and rinse water appropriately, i.e., do not discharge to storm drain or receiving water). Do not decontaminate laboratory provided sample containers;
- Do not smoke during sampling events;
- Never sample near a running vehicle;

- Do not park vehicles in the immediate sample collection area (even non-running vehicles);
- Do not eat or drink during sample collection; and
- Do not breathe, sneeze, or cough in the direction of an open sample container.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams as noted below.

- For small streams and flow paths, simply dip the bottle facing upstream until full.
- For larger stream that can be safely accessed, collect a sample in the middle of the flow stream by directly dipping the mouth of the bottle. Once again making sure that the opening of the bottle is facing upstream as to avoid any contamination by the sampler.
- For larger streams that cannot be safely waded, pole-samplers may be needed to access the representative flow.
- Avoid collecting samples from ponded, sluggish or stagnant water.
- Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.
- Do not stand upstream of the sampling point within the flow path.

Note, that depending upon the specific analytical test, some containers may contain preservatives. These containers should **never** be dipped into the stream, but filled indirectly from the collection container.

5.8.2 Sample Handling

Field pH measurements must be conducted immediately. Do not store pH samples for later measurement.

Samples for laboratory analysis must be handled as follows. Immediately following sample collection:

- Cap sample containers;
- Complete sample container labels;
- Sealed containers in a re-sealable storage bag;
- Place sample containers into an ice-chilled cooler or refrigerator;
- Document sample information on the *Sampling Field Log Sheet*; and
- Complete the CoC.

All samples for laboratory analysis must be maintained between 0-6 degrees Celsius during delivery to the laboratory. Samples must be kept on ice, or refrigerated, from sample collection through delivery to the laboratory. Place samples to be shipped inside coolers with ice. Make sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Ship samples that will be laboratory analyzed to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The

General Permit requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory).

5.8.3 Sample Documentation Procedures

All original data documented on sample bottle identification labels, *Sampling Log*, and CoCs will be recorded using waterproof ink. If an error is made on a document, sampling personnel will make corrections by lining through the error and entering the correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated.

Duplicate samples will be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples will be identified in the Sampling Log.

Sample documentation procedures include the following:

Sample Bottle Identification Labels: Sampling personnel will attach an identification label to each sample bottle. Sample identification will uniquely identify each sample location.

Field Log Sheets: Sampling personnel will complete the *Effluent Sampling Field Log Sheet* and *Receiving Water Sampling Field Log Sheet* for each sampling event, as appropriate.

Chain of Custody: Sampling personnel will complete the CoC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the CoC when the sample(s) is turned over to the testing laboratory or courier.

5.9 Quality Assurance and Quality Control

An effective Quality Assurance and Quality Control (QA/QC) plan will be implemented as part of the IMP to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field logs;
- Clean sampling techniques;
- CoCs;
- QA/QC Samples; and
- Data verification.

Each of these procedures is discussed in more detail in the following sections.

5.9.1 Field Logs

The purpose of field logs is to record sampling information and field observations during monitoring that may explain any uncharacteristic analytical results. Sampling information to be included in the field log include the date and time of water quality sample collection, sampling personnel, sample container identification numbers, and types of samples that were collected. Field observations should be noted in the field log for any abnormalities at the sampling location (color, odor, BMPs, etc.). Field measurements for pH and turbidity should also be recorded in the field log. A Visual Inspection Field Log, an Effluent Sampling Field Log Sheet are included in MIP Attachment 3 “Example Forms”.

5.9.2 Clean Sampling Techniques

Clean sampling techniques involve the use of certified clean containers for sample collection and clean powder-free nitrile gloves during sample collection and handling. As discussed in Section 6.8, adoption of a clean sampling approach will minimize the chance of field contamination and questionable data results.

5.9.3 Chain of Custody

The sample CoC is an important documentation step that tracks samples from collection through analysis to ensure the validity of the sample. Sample CoC procedures include the following:

- Proper labeling of samples;
- Use of CoC forms for all samples; and
- Prompt sample delivery to the analytical laboratory.

Analytical laboratories usually provide CoC forms to be filled out for sample containers. An example CoC is included in MIP Attachment 3 "Example Forms".

5.9.4 QA/QC Samples

QA/QC samples provide an indication of the accuracy and precision of the sample collection; sample handling; field measurements; and analytical laboratory methods. The following types of QA/QC will be conducted for this project:

☒ Field Duplicates at a frequency of 5 percent or 1 duplicate minimum per sampling event (Required for all sampling plans with field measurements or laboratory analysis)

☐ Equipment Blanks (Only needed if equipment used to collect samples could add the pollutants to sample)

☐ Field Blanks (Only required if sampling method calls for field blanks)

☐ Travel Blanks (Required for sampling plans that include VOC laboratory analysis)

5.9.4.1 Field Duplicates

Field duplicates provide verification of laboratory or field analysis and sample collection. Duplicate samples will be collected, handled, and analyzed using the same protocols as primary samples. The sample location where field duplicates are collected will be randomly selected from the discharge locations. Duplicate samples will be collected immediately after the primary sample has been collected. Duplicate samples must be collected in the same manner and as close in time as possible to the original sample. Duplicate samples will not influence any evaluations or conclusion.

5.9.4.2 Equipment Blanks

Equipment blanks provide verification that equipment has not introduced a pollutant into the sample. Equipment blanks are typically collected when:

- New equipment is used;
- Equipment that has been cleaned after use at a contaminated site;
- Equipment that is not dedicated for surface water sampling is used; or
- Whenever a new lot of filters is used when sampling metals.

5.9.4.3 Field Blanks

Field blanks assess potential sample contamination levels that occur during field sampling activities. De-ionized water field blanks are taken to the field, transferred to the appropriate container, and treated the same as the corresponding sample type during the course of a sampling event.

5.9.4.4 Travel Blanks

Travel blanks assess the potential for cross-contamination of volatile constituents between sample containers during shipment from the field to the laboratory. De-ionized water blanks are taken along for the trip and held unopened in the same cooler with the VOC samples.

5.9.5 Data Verification

After results are received from the analytical laboratory, the discharger will verify the data to ensure that it is complete, accurate, and the appropriate QA/QC requirements were met. Data must be verified as soon as the data reports are received. Data verification will include:

- Check the CoC and laboratory reports.
  Make sure all requested analyses were performed and all samples are accounted for in the reports.
- Check laboratory reports to make sure hold times were met and that the reporting levels meet or are lower than the reporting levels agreed to in the contract.
- Check data for outlier values and follow up with the laboratory.
  Occasionally typographical errors, unit reporting errors, or incomplete results are reported and should be easily detected. These errors need to be identified, clarified, and corrected quickly by the laboratory. Especially note data that is an order of magnitude or more different than similar locations, or is inconsistent with previous data from the same location.
- Check laboratory QA/QC results.
  EPA establishes QA/QC checks and acceptable criteria for laboratory analyses. These data are typically reported along with the sample results. Evaluate the reported QA/QC data to check for contamination (method, field, and equipment blanks), precision (laboratory matrix spike duplicates), and accuracy (matrix spikes and laboratory control samples). When QA/QC checks are outside acceptable ranges, the laboratory must flag the data, and usually provides an explanation of the potential impact to the sample results.
- Check the data set for outlier values and accordingly, confirm results and re-analyze samples where appropriate.
  Sample re-analysis should only be undertaken when it appears that some part of the QA/QC resulted in a value out of the accepted range. Sample results may not be discounted unless the analytical laboratory identifies the required QA/QC criteria were not met and confirms this in writing.

Field data including pH measurements and visual observations must be verified as soon as the Visual Observation and Sampling Logs are received, typically at the end of the monitoring event. Field data verification will include:

- Check logs to make sure all required measurements were completed and appropriately documented;
- Check reported values that appear out of the typical range or inconsistent; *Follow-up immediately to identify potential reporting or equipment problems, if appropriate, recalibrate equipment after sampling;*
- Verify equipment calibrations;
- Review observations noted on the logs; and
- Review notations of any errors and actions taken to correct the equipment or recording errors.

5.10 Records Retention

Records of stormwater monitoring information and copies of reports (including Annual Reports) must be retained for a period of at least five (5) years from date of submittal or longer if required by the Regional Water Board.

Results of visual observations, field measurements, and laboratory analyses must be kept in the SWPPP along with CoCs, and other documentation related to the monitoring.

Records to be retained include:

- The date, place, and time of inspections, sampling, visual observations, and/or measurements, including precipitation;
- The individual(s) who performed the inspections, sampling, visual observation, and/or field measurements;
- The date and approximate time of field measurements and laboratory analyses;
- The individual(s) who performed the laboratory analyses;
- A summary of all analytical results, the method detection limits and reporting limits, and the analytical techniques or methods used;
- Weather reports;
- QA/QC records and results;
- Calibration records;
- Visual observation and sample collection exception records; and
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections.

MIP Attachment 1: Weather Reports

MIP Attachment 2: Monitoring Records

MIP Attachment 3: Example Forms

Visual Observation Log - Monthly	
Date and Time of Inspection:	Report Date:
Facility Name:	
Weather	
Antecedent Conditions (last 48 hours):	Current Weather:
NSWD Observations	
Were any authorized non-stormwater discharges observed?	Yes ☐ No ☐
Were any **unauthorized** non-stormwater discharges observed?	Yes ☐ No ☐
If yes to either, identify source:	
Outdoor Industrial Equipment and Storage Area Observations	
Complete Monthly BMP Inspection Report	Yes ☐ No ☐
Drainage Area 1:	Were any deficiencies or any other potential source of industrial pollutants observed? Yes ☐ No ☐
Drainage Area 2:	Were any deficiencies or any other potential source of industrial pollutants observed? Yes ☐ No ☐
Drainage Area 3:	Were any deficiencies or any other potential source of industrial pollutants observed? Yes ☐ No ☐
Drainage Area 4:	Were any deficiencies or any other potential source of industrial pollutants observed? Yes ☐ No ☐
Drainage Area 5:	Were any deficiencies or any other potential source of industrial pollutants observed? Yes ☐ No ☐
If yes to any, describe:	
Exception Documentation (explanation required if inspection could not be conducted).	

Inspector Information	
Inspector Name:	Inspector Title:
Signature:	Date:

Visual Observation Log – Sampling Events			
Date and Time of Inspection:		Report Date:	
Facility Name:			
Weather			
Antecedent Conditions (last 48 hours):		Weather:	
Precipitation Total:		Predicted % chance of rain:	
Estimate storm beginning: _____ (date and time)	Estimate storm duration:_____ (hours)	Estimate time since last storm: _____ (days or hours)	Rain gauge reading: _____ (inches)
Sampling Event Observations			
Observations: If yes identify location and observe drainage area to identify probable cause			
Odors	Yes ☐ No ☐		
Floating material	Yes ☐ No ☐		
Suspended Material	Yes ☐ No ☐		
Sheen	Yes ☐ No ☐		
Discolorations	Yes ☐ No ☐		
Turbidity	Yes ☐ No ☐		
NSWD Observations			
Were any authorized non-stormwater discharges observed?		Yes ☐	No ☐
Were any **unauthorized** non-stormwater discharges observed?		Yes ☐	No ☐
If yes to either, identify source			
Drainage Area Observations			
Drainage Area		**Deficiencies Noted**	

Exception Documentation (explanation required if inspection could not be conducted).

Inspector Information	
Inspector Name:	Inspector Title:
Signature:	Date:

Sampling Log		
Facility Name:	Date:	Time Start:
Sampler Name:		

Field Meter Calibration
pH Meter ID No./Description: Calibration Date/Time:

Field pH Measurements		
Discharge Location Identifier	pH	Time

Samples Collected		
Discharge Location Identifier	Constituent	Time
	Oil and Grease	
	Total Suspended Solids	

Additional Sampling Notes:
Time End:

CHAIN-OF-CUSTODY **DATE:** **Lab ID:**

DESTINATION LAB: ATTN: **ADDRESS:** **Office Phone:** **Cell Phone:**							REQUESTED ANALYSIS				Notes:
SAMPLED BY:											
Contact:											
Facility Name											
Client Sample ID	**Sample Date**	**Sample Time**	**Sample Matrix**	**Container #**	**Container Type**	**Container Pres.**					

SENDER COMMENTS:	**RELINQUISHED BY**
	Signature:
	Print:
	Company:
	Date: TIME:
LABORATORY COMMENTS:	**RECEIVED BY**
	Signature:
	Print:
	Company:
	Date: TIME:

MIP Attachment 4: Field Meter Instructions

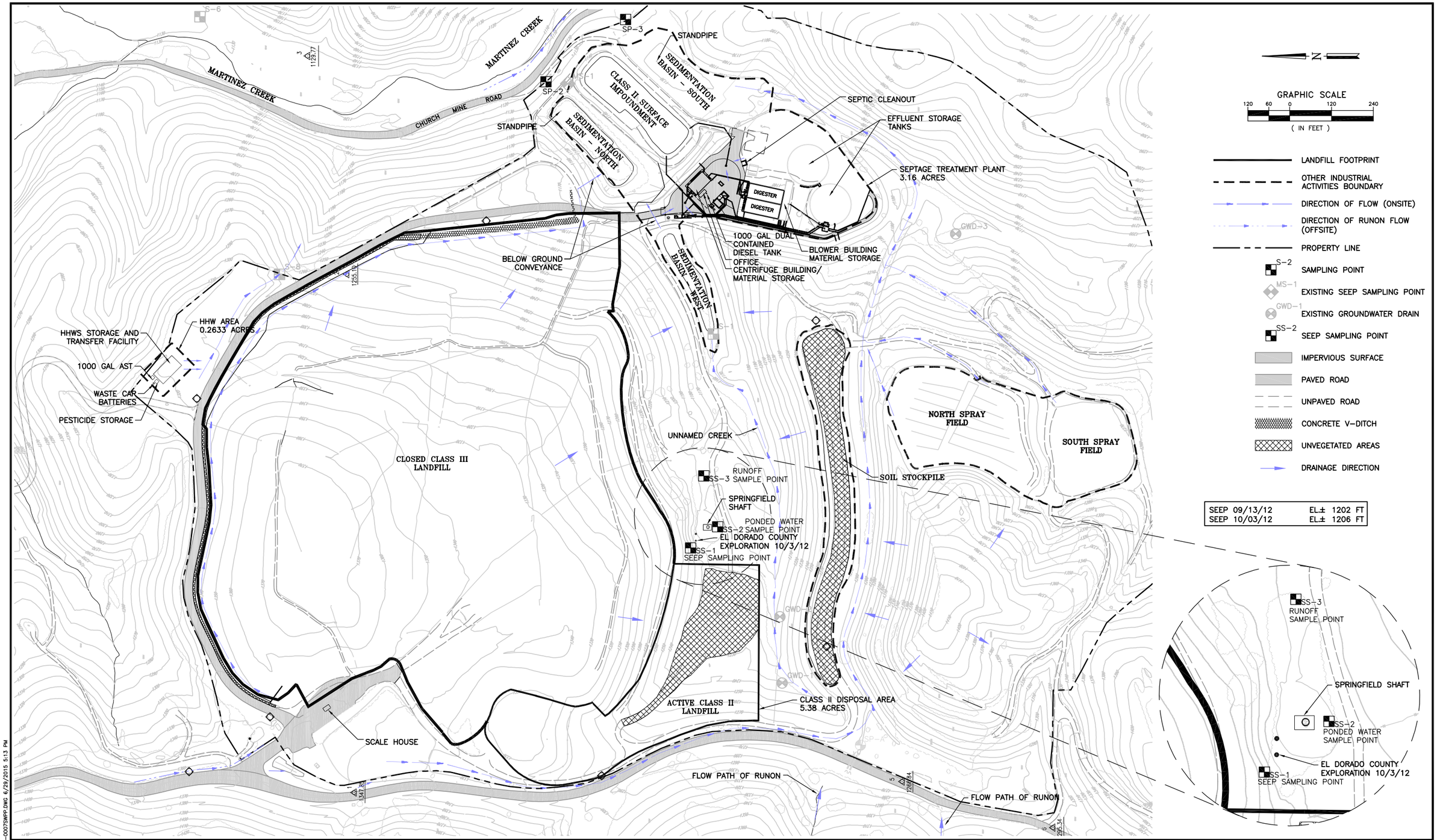
MIP Attachment 5: Other Regulatory Documents

Section 6 References

State Water Resources Control Board (2014). Order 2014-0057-DWQ, NPDES General Permit No. CAS000001: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Industrial Activities. Available on-line at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.shtml.

CASQA 2012, *Stormwater BMP Handbook Portal: Industrial Commercial*, August 2014, www.casqa.org

Appendix A: Site Map(s)



NO.	REVISION DESCRIPTION	BY:

TETRA TECH BAS
1360 Valley Vista Drive, Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

UNION MINE DISPOSAL SITE/SEPTAGE TREATMENT FACILITY

SITE MAP

DESIGNED BY : –	SCALE : AS SHOWN	
DRAWN BY : A.N.P.	DATE : 12-2013	FILE NO.: 22-0007SWPP.DWG
CHECKED BY : M.O.	DATE : 12-2013	FIGURE 1
APPROVED BY : –	DATE : 12-2013	

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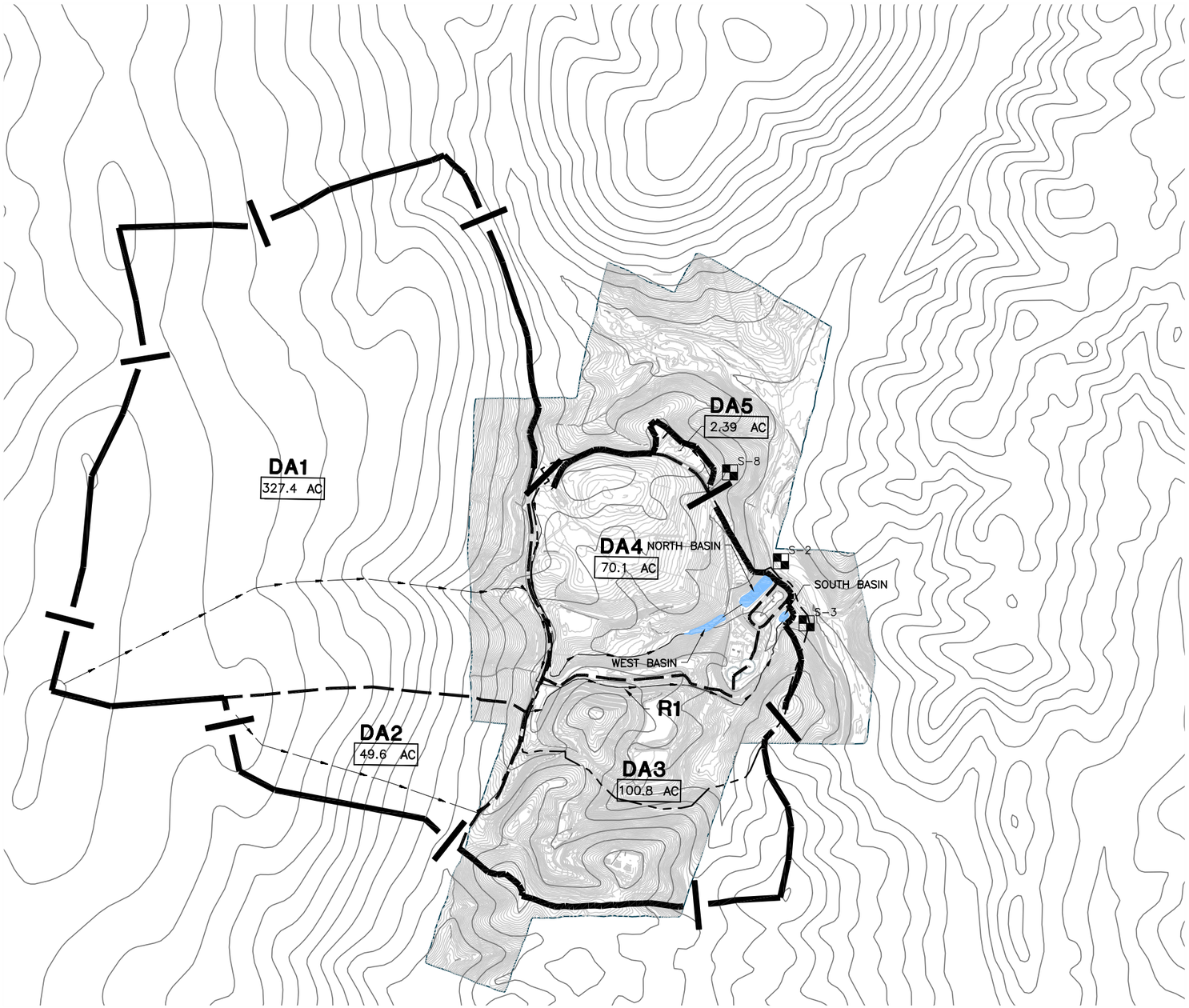


85th PERCENTILE – (1 INCH) – RUNOFF
SUMMARY TABLE

SUB–AREA	SUB–AREA (ACRES)	RUNOFF CFS	TOTAL AREA (ACRES)	TOTAL RUNOFF CFS
DA1	327.4	1.94	327.4	1.94
DA2	49.6	0.29	377.0	2.23
DA3	100.8	0.93	477.8	3.16
DA4	70.1	0.65	70.1	0.65
DA5	2.39	0.49	2.39	0.49
DA_{total}			550.29	4.30
$SITE_{total}$ – VOLUME				3.21 AC–FT

N

GRAPHIC SCALE
1000 500 0 1000 2000
(IN FEET)

LEGEND

- DRAINAGE TRIBUTARY AREA
- DRAINAGE SUB–AREA
- 10 EXISTING INDEX CONTOUR
- APPROXIMATE PROPERTY LINE
- FLOWLINE
- 10.00 AC AREA IN ACRES
- DA_4 SUB–AREA LABEL
- R_1 REACH LABEL
- S–2 DISCHARGE LOCATIONS
- STORMWATER COLLECTION AREAS

NO.	REVISION DESCRIPTION	BY:

TETRA TECH BAS
1360 Valley Vista Drive, Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

UNION MINE LANDFILL

85th PERCENTILE HYDROLOGY STUDY

DESIGNED BY : J.S.N.	SCALE : AS SHOWN	
DRAWN BY : A.N.P.	DATE : 06–2015	FILE NO.: 19–0075HYD.DWG
CHECKED BY : G.E.S.	DATE : 06–2015	FIGURE 2
APPROVED BY : C.H.M.	DATE : 06–2015	

G:\DWG\UNION MINE\HYDRO\19–0075HYD

Appendix B: Permit Registration Documents

Permit Registration Documents included in this Appendix

Y/N	Permit Registration Document
	Notice of Intent
	Certification
	Copy of Annual Fee Receipt
	Site Map(s), see Appendix A

Appendix C: Training Reporting Form

Trained Team Member Log

Stormwater Management Training Log and Documentation

Facility Name: Union Mine Disposal Site

WDID #: 5 S091000443

Stormwater Management Topic: (check as appropriate)

- ☐ Good Housekeeping
- ☐ Spill and Leak Prevention and Response
- ☐ Erosion and Sediment Controls
- ☐ Advanced BMPs
- ☐ Stormwater Sampling and Analysis
- ☐ Preventative Maintenance
- ☐ Material Handling and Waste Management
- ☐ Quality Assurance and Record Keeping
- ☐ Visual Monitoring

Specific Training Objective: _____

Location: _____ Date: _____

Instructor:_____ Telephone: _____

Course Length (hours): _____

Attendee Roster (Attach additional forms if necessary)

Name	Company	Phone

As needed, add proof of external training (e.g., course completion certificates, credentials for QISP).

License Search for Professional Engineers and Land Surveyors

Licensee Name:	SAUL GREG EDWIN
License Type:	CIVIL ENGINEER
License Number:	60600
License Status:	CLEAR Definition
Expiration Date:	December 31, 2016
Address:	6864 COVENTRY CT
City:	RANCHO CUCAMONGA
State:	CA
Zip:	91739
County:	SAN BERNARDINO
Actions:	No

Public Record Action(s)

This information is updated Monday through Friday - Last updated: MAR-16-2015

Back

CERTIFICATE OF TRAINING

CALIFORNIA CONSTRUCTION GENERAL PERMIT

QUALIFIED SWPPP DEVELOPER (QSD)
AND
QUALIFIED SWPPP PRACTITIONER (QSP)

Gregory Saul

May 06, 2013 - Jul 21, 2015

Certificate # 01019

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

California Stormwater Quality Association and
California Construction General Permit Training Team

Appendix D: Responsible Parties

COMMUNITY DEVELOPMENT AGENCY
ENVIRONMENTAL MANAGEMENT DIVISION
http://www.edcgov.us/EMD/

PLACERVILLE OFFICE:
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5300
(530) 626-7130 Fax

LAKE TAHOE OFFICE:
3368 Lake Tahoe Blvd., Suite 303
South Lake Tahoe, CA 96150
(530) 573-3450
(530) 542-3364 Fax

February 24, 2015

Storm Water Section
State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95814

RE: Duly Authorized Representative for SMARTS Registration

Dear Director:

On behalf of the County of El Dorado I am authorizing Robert Brillisour, Disposal Site Supervisor for the Union Mine Disposal Site, to complete the electronic registration process and submit any and all required information and/or reports into the Storm Water Multiple Application Report Tracking System (SMARTS).

As the Disposal Site Supervisor, Mr. Brillisour has responsibility for the overall operation of the Union Mine Disposal Site, a regulated facility. Pursuant to 40 CFR, Section 122.22, Mr. Brillisour is eligible and appropriate to become the County's duly authorized representative for submittal of information into SMARTS. If you have any questions or concerns please fee l free to contact me at 530-621-6653.

I certify under penalty of law that this document and all attachments were prepared under my direction of 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.

Respectfully,

Gerri Silva

Gerri Silva, MS, REHS
Director, Environmental Management Division
Community Development Agency
County of El Dorado

Identification of QISP

Facility Name: Union Mine Disposal Site

WDID #: 5 S091000443

The following are QISPs associated with this project

Name of Personnel(1)	Company	Date
Robert Brillisour	El Dorado County Environmental Management Division	TBD
Greg Saul, P.E.	TTBAS	TBD

(1) Individuals will take QISP training when available

Appendix E: SWPPP Amendment Certifications

SWPPP Amendment No. _____

Project Name: _____

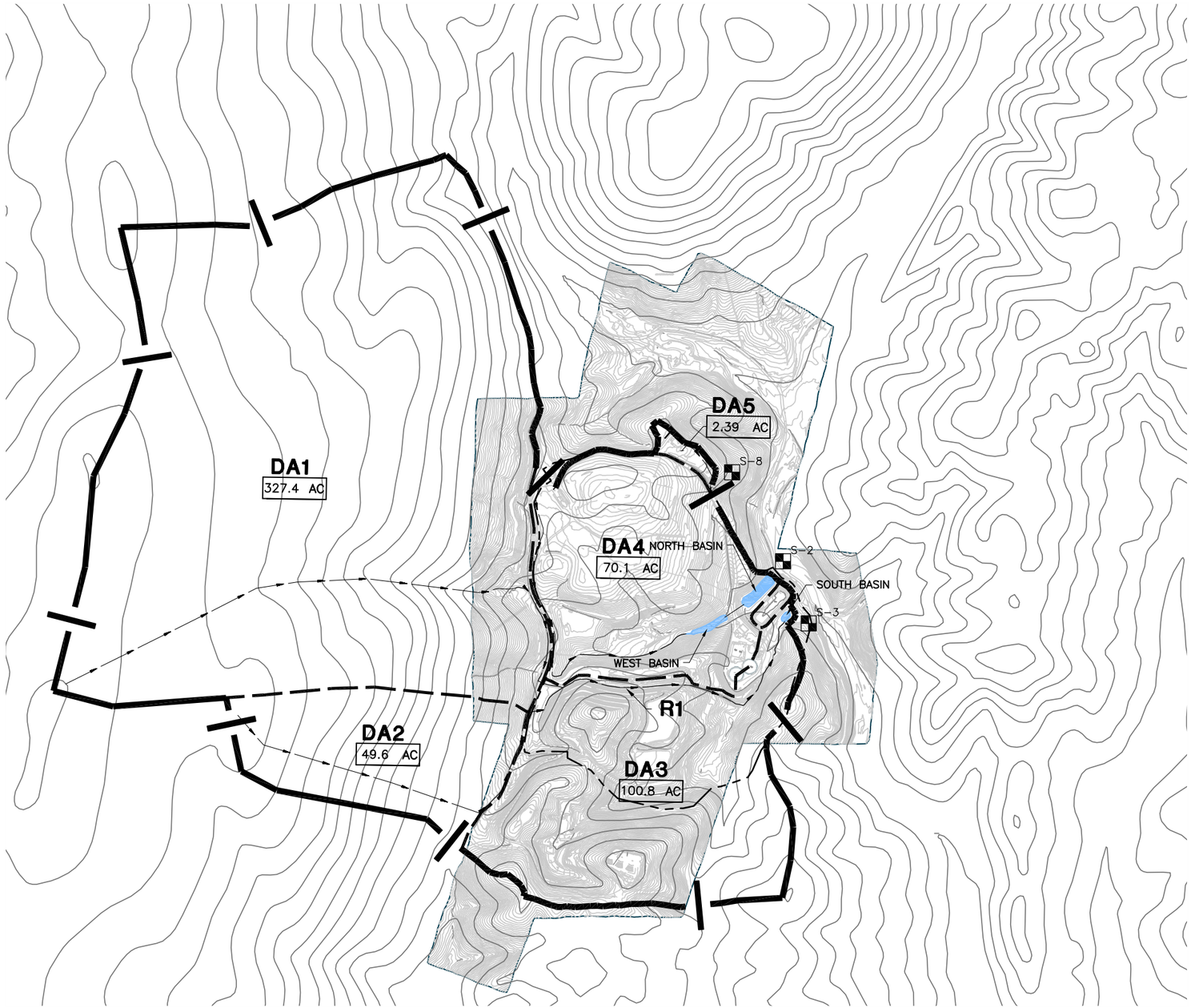
Project Number: _____

Legally Responsible Person's Certification of the Stormwater Pollution Prevention Plan Amendment

"This Stormwater Pollution Prevention Plan and attachments were prepared under my direction to meet the requirements of the California Industrial General Permit (SWRCB Order No. 2014-0057-DWQ)."

LRP's Signature	Date
LRP Name	LRP Title
Title and Affiliation	Telephone
Address	Email

Appendix F: Calculations



85th PERCENTILE – (1 INCH) – RUNOFF
SUMMARY TABLE

SUB–AREA	SUB–AREA (ACRES)	RUNOFF CFS	TOTAL AREA (ACRES)	TOTAL RUNOFF CFS
DA1	327.4	1.94	327.4	1.94
DA2	49.6	0.29	377.0	2.23
DA3	100.8	0.93	477.8	3.16
DA4	70.1	0.65	70.1	0.65
DA5	2.39	0.49	2.39	0.49
DA_{total}			550.29	4.30
$SITE_{total}$ – VOLUME				3.21 AC–FT

N

GRAPHIC SCALE
1000 500 0 1000 2000
(IN FEET)

LEGEND

- DRAINAGE TRIBUTARY AREA
- DRAINAGE SUB–AREA
- 10 EXISTING INDEX CONTOUR
- APPROXIMATE PROPERTY LINE
- FLOWLINE
- 10.00 AC AREA IN ACRES
- DA_4 SUB–AREA LABEL
- R_1 REACH LABEL
- S-2 DISCHARGE LOCATIONS
- STORMWATER COLLECTION AREAS

NO.	REVISION DESCRIPTION	BY:

TETRA TECH BAS
1360 Valley Vista Drive, Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

UNION MINE LANDFILL

85th PERCENTILE HYDROLOGY STUDY

DESIGNED BY : J.S.N.	SCALE : AS SHOWN	
DRAWN BY : A.N.P.	DATE : 06–2015	FILE NO.: 19–0075HYD.DWG
CHECKED BY : G.E.S.	DATE : 06–2015	**FIGURE 2**
APPROVED BY : C.H.M.	DATE : 06–2015	

G:\DWG\UNION MINE\HYDRO\19–0075HYD

WinTR-55 Current Data Description

--- Identification Data ---

User: JSN
Project:
SubTitle:
State: California
County: El Dorado
Filename: J:\El Dorado County\2015-0066 Union Mine LF - Update SWPPP\HYDRO\UNION MINE SWPPP.w55

Date: 6/30/2015
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
DA1	327.4 AC	R1	327.4	79	0.345
DA2	49.6	R1	49.6	79	0.472
DA3	100.8 AC	Outlet	100.8	83	0.321
DA4	70.1 AC	Outlet	70.1	83	0.381
DA5	2.39 AC	Outlet	2.39	98	0.100

Total area: 550.29 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

85-% (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1000-Yr (in)
1.0	3.89	4.46	5.25	5.86	6.49	8.73

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

JSN

El Dorado County, California

Storm Data

Rainfall Depth by Rainfall Return Period

85-% (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1000-Yr (in)
1.0	3.89	4.46	5.25	5.86	6.49	8.73

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

JSN

El Dorado County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 85-% (cfs)
SUBAREAS	
DA1	1.94
DA2	0.29
DA3	0.93
DA4	0.65
DA5	0.49
REACHES	
R1	2.23
Down	2.23
OUTLET	3.85

JSN

El Dorado County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 85% (cfs) (hr)
SUBAREAS	
DA1	1.94
	19.70
DA2	0.29
	19.73
DA3	0.93
	17.22
DA4	0.65
	17.24
DA5	0.49
	7.91
REACHES	
R1	2.23
	19.70
Down	2.23
	19.77
OUTLET	3.85

JSN

El Dorado County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
DA1	327.40	0.345	79	R1	327.4 AC
DA2	49.60	0.472	79	R1	49.6
DA3	100.80	0.321	83	Outlet	100.8 AC
DA4	70.10	0.381	83	Outlet	70.1 AC
DA5	2.39	0.100	98	Outlet	2.39 AC

Total Area: 550.29 (ac)

JSN

El Dorado County, California

Reach Summary Table

Reach Identifier	Receiving Reach Identifier	Reach Length (ft)	Routing Method
R1	Outlet	2360	CHANNEL

JSN

El Dorado County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
DA1							
User-provided							0.345
					Time of Concentration		0.345
DA2							
User-provided							0.472
					Time of Concentration		0.472
DA3							
User-provided							0.321
					Time of Concentration		0.321
DA4							
User-provided							0.381
					Time of Concentration		0.381
DA5							
User-provided							0.100
					Time of Concentration		0.100

JSN

El Dorado County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
DA1	Woods	(fair)	D	327.4	79
	Total Area / Weighted Curve Number			327.4	79
DA2	Woods	(fair)	D	49.6	79
	Total Area / Weighted Curve Number			49.6	79
DA3	Brush - brush, weed, grass mix	(poor)	D	100.8	83
	Total Area / Weighted Curve Number			100.8	83
DA4	Brush - brush, weed, grass mix	(poor)	D	70.1	83
	Total Area / Weighted Curve Number			70.1	83
DA5	Paved parking lots, roofs, driveways		D	2.39	98
	Total Area / Weighted Curve Number			2.39	98

JSN

El Dorado County, California

Reach Channel Rating Details

Reach Identifier	Reach Length (ft)	Reach Manning's n	Friction Slope (ft/ft)	Bottom Width (ft)	Side Slope
R1	2360	0.03	0.0568	12	2 :1

Reach Identifier	Stage (ft)	Flow (cfs)	End Area (sq ft)	Top Width (ft)	Friction Slope (ft/ft)
R1	0.0	0.000	0	12	0.0568
	0.5	45.499	6.5	14	
	1.0	148.292	14	16	
	2.0	501.124	32	20	
	5.0	2820.666	110	32	
	10.0	11971.740	320	52	
	20.0	57940.206	1040	92	

```
WinTR-20 Printed Page File      Beginning of Input Data List
TR20.inp

WinTR-20: Version 1.10                  0         0         0.05
no project title provided
no project subtitle provided

SUB-AREA:
          DA1       R1                  .51156    79.       .345
          DA2       R1                  .0775     79.       .472
          DA3       Outlet              .1575     83.       .321
          DA4       Outlet              .10953    83.       .381
          DA5       Outlet              .00373    98.       .1

STREAM REACH:
          R1        Outlet    Xsec 1              2360.

STORM ANALYSIS:
          85-Yr                         1.0       Type IA   2

STRUCTURE RATING:

STREAM CROSS SECTION:
          Xsec 1    0.0       0.0       0.0
                    0.0       0.000     0.00      12.00     0.0568
                    0.5       45.499    6.50      14.00     0.0568
                    1.0       148.292   14.00     16.00     0.0568
                    2.0       501.124   32.00     20.00     0.0568
                    5.0       2820.666  110.00    32.00     0.0568
                    10.0      11971.740 320.00    52.00     0.0568
                    20.0      57940.206 1040.00   92.00     0.0568


GLOBAL OUTPUT:
          2         0.05                YYYYN     YYYYNN


WinTR-20 Printed Page File      End of Input Data List

                          no project title provided
                        no project subtitle provided

                        Name of printed page file:
                                TR20.out

                                        STORM 85-Yr

Area or    Drainage  Rain Gage     Runoff    ------------ Peak Flow ------------
 Reach       Area      ID or       Amount   Elevation   Time      Rate      Rate
Identifier  (sq mi)   Location      (in)      (ft)      (hr)     (cfs)     (csm)

DA1           0.512                0.070                19.70      1.94      3.78

   Line
Start Time   ------------ Flow Values @ time increment of  0.022 hr ------------
      (hr)     (cfs)     (cfs)     (cfs)     (cfs)     (cfs)     (cfs)     (cfs)

     9.463      0.05      0.06      0.08      0.09      0.10      0.12      0.13
     9.615      0.14      0.16      0.17      0.19      0.21      0.22      0.24
     9.768      0.25      0.27      0.28      0.30      0.31      0.33      0.34
     9.921      0.36      0.37      0.38      0.40      0.41      0.42      0.44
    10.073      0.45      0.46      0.47      0.49      0.50      0.51      0.52
    10.226      0.53      0.54      0.55      0.56      0.57      0.58      0.59
    10.378      0.60      0.61      0.62      0.63      0.64      0.65      0.66
    10.531      0.67      0.68      0.69      0.70      0.71      0.72      0.73
    10.683      0.74      0.75      0.76      0.77      0.78      0.79      0.80
    10.836      0.81      0.82      0.83      0.84      0.85      0.85      0.86
    10.988      0.87      0.88      0.89      0.89      0.90      0.91      0.91
    11.141      0.92      0.93      0.93      0.94      0.94      0.95      0.96
    11.293      0.96      0.97      0.97      0.98      0.98      0.99      0.99
    11.446      1.00      1.00      1.01      1.01      1.02      1.02      1.02
    11.598      1.03      1.03      1.03      1.04      1.04      1.04      1.04
    11.751      1.04      1.05      1.05      1.05      1.05      1.06      1.06
    11.903      1.06      1.07      1.07      1.07      1.08      1.08      1.09
    12.056      1.09      1.10      1.10      1.11      1.11      1.12      1.12
```

Union Mine Landfill Hydrology Caculations

Kirpich + Mannings Time of Concentration Calculations

Existing Condition

$$t_c = 0.0078 \left(\frac{LxL}{S}\right)^{0.385}$$

$$V = 1.49 \frac{R^{0.66} S^{0.50}}{n}$$

L = Longest Flow Path (ft)
S = Slope (ft/ft)
R = Hydraulic Radius (ft)
n = Mannings Roughness Coefficient
V = Velocity (ft/sec)
K = Kirpich Method
M = Mannings Method

	A (Acres)	Method	L	Flow			S	Velocity (ft/s)	t_c (min.)				t_c (hr.)
DA1	327.40	K	105'		2012-2000 / 105	=	0.1143		0.65 min	x	1 hr / 60 min	=	0.0108 hr.
		M	5030'	Swale	2000 - 1259 / 5030	=	0.1473	4.18	20.06 min	x	1 hr / 60 min	=	0.3343 hr.
DA2	49.60	K	170'		1920-1913 / 170	=	0.0412		1.39 min	x	1 hr / 60 min	=	0.0232 hr.
		M	3520'	Swale	1913-1259 / 3520	=	0.1858	2.18	26.91 min	x	1 hr / 60 min	=	0.4485 hr.
DA3	100.80	M	2360'	Swale	1259-1125 / 2360	=	0.0568	2.04	19.28 min	x	1 hr / 60 min	=	0.3214 hr.
DA4	2.92	K	106'		1360-1354 / 106	=	0.0566		0.85 min	x	1 hr / 60 min	=	0.0142 hr.
		M	2920'	Trap	1354-1145 / 2920	=	0.0716	2.21	22.02 min	x	1 hr / 60 min	=	0.3670 hr.
DA5	2.39	K	534'		1335-1270 / 534	=	0.1217		2.21 min	x	1 hr / 60 min	=	0.0368 hr.

Worksheet for DA1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.14730	ft/ft
Left Side Slope	2.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	4.00	ft
Discharge	1.94	ft³/s

Results

Normal Depth	0.11	ft
Flow Area	0.46	ft²
Wetted Perimeter	4.49	ft
Hydraulic Radius	0.10	ft
Top Width	4.44	ft
Critical Depth	0.19	ft
Critical Slope	0.02412	ft/ft
Velocity	4.18	ft/s
Velocity Head	0.27	ft
Specific Energy	0.38	ft
Froude Number	2.28	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.11	ft
Critical Depth	0.19	ft
Channel Slope	0.14730	ft/ft

Worksheet for DA1

GVF Output Data

Critical Slope	0.02412	ft/ft

Worksheet for DA2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.18580	ft/ft
Left Side Slope	2.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	4.00	ft
Discharge	0.29	ft³/s

Results

Normal Depth	0.03	ft
Flow Area	0.13	ft²
Wetted Perimeter	4.15	ft
Hydraulic Radius	0.03	ft
Top Width	4.13	ft
Critical Depth	0.05	ft
Critical Slope	0.03524	ft/ft
Velocity	2.18	ft/s
Velocity Head	0.07	ft
Specific Energy	0.11	ft
Froude Number	2.14	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.03	ft
Critical Depth	0.05	ft
Channel Slope	0.18580	ft/ft

Worksheet for DA2

GVF Output Data

Critical Slope	0.03524	ft/ft

Worksheet for DA3

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.05680	ft/ft
Left Side Slope	2.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	6.00	ft
Discharge	0.93	ft³/s

Results

Normal Depth	0.07	ft
Flow Area	0.46	ft²
Wetted Perimeter	6.33	ft
Hydraulic Radius	0.07	ft
Top Width	6.30	ft
Critical Depth	0.09	ft
Critical Slope	0.02984	ft/ft
Velocity	2.04	ft/s
Velocity Head	0.06	ft
Specific Energy	0.14	ft
Froude Number	1.34	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.07	ft
Critical Depth	0.09	ft
Channel Slope	0.05680	ft/ft

Worksheet for DA3

GVF Output Data

Critical Slope	0.02984	ft/ft

Worksheet for DA4

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.07160	ft/ft
Left Side Slope	2.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	4.00	ft
Discharge	0.65	ft³/s

Results

Normal Depth	0.07	ft
Flow Area	0.29	ft²
Wetted Perimeter	4.32	ft
Hydraulic Radius	0.07	ft
Top Width	4.28	ft
Critical Depth	0.09	ft
Critical Slope	0.02987	ft/ft
Velocity	2.21	ft/s
Velocity Head	0.08	ft
Specific Energy	0.15	ft
Froude Number	1.48	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

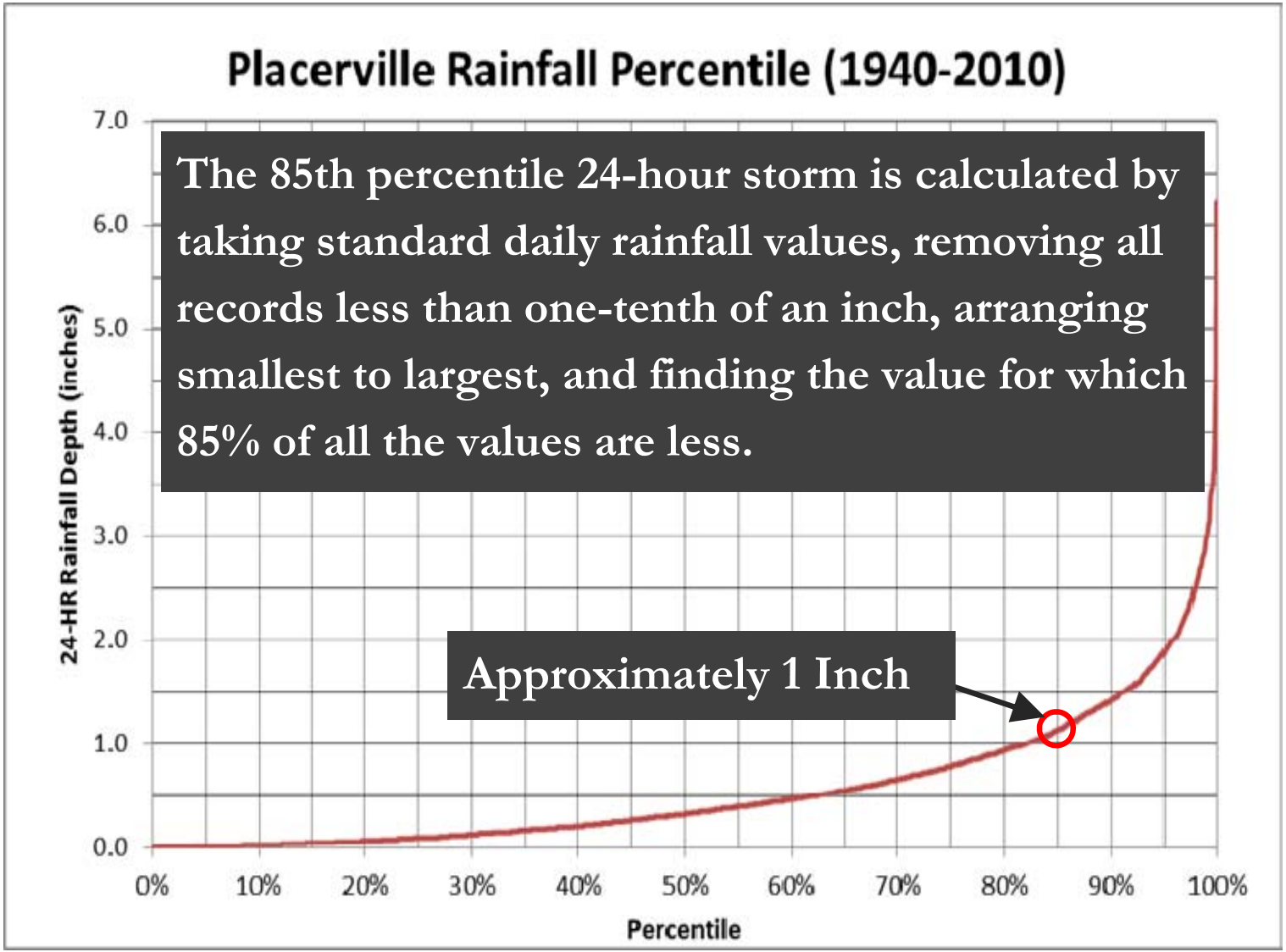
GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.07	ft
Critical Depth	0.09	ft
Channel Slope	0.07160	ft/ft

Worksheet for DA4

GVF Output Data

Critical Slope	0.02987	ft/ft


Placerville Rainfall Percentile (1940-2010)
The 85th percentile 24-hour storm is calculated by taking standard daily rainfall values, removing all records less than one-tenth of an inch, arranging smallest to largest, and finding the value for which 85% of all the values are less.
Approximately 1 Inch
24-HR Rainfall Depth (inches)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percentile

Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- Soil Erosion Factors
- **Soil Physical Properties**
  - Available Water Capacity
  - Available Water Storage
  - Available Water Supply, 0 to 100 cm
  - Available Water Supply, 0 to 150 cm
  - Available Water Supply, 0 to 25 cm
  - Available Water Supply, 0 to 50 cm
  - Bulk Density, 15 Bar
  - Bulk Density, One-Tenth Bar
  - Bulk Density, One-Third Bar
  - Linear Extensibility
  - Liquid Limit
  - Organic Matter
  - Percent Clay
  - Percent Sand
  - Percent Silt
  - Plasticity Index
  - Saturated Hydraulic Conductivity (Ksat)
  - Saturated Hydraulic Conductivity (Ksat), Standard Classes
  - Surface Texture
  - Water Content, 15 Bar
  - Water Content, One-Third Bar
- **Soil Qualities and Features**
  - AASHTO Group Classification (Surface)
  - Depth to a Selected Soil Restrictive Layer
  - Depth to Any Soil Restrictive Layer
  - Drainage Class
  - Frost Action
  - Frost-Free Days
  - **Hydrologic Soil Group**

View Description | View Rating

View Options

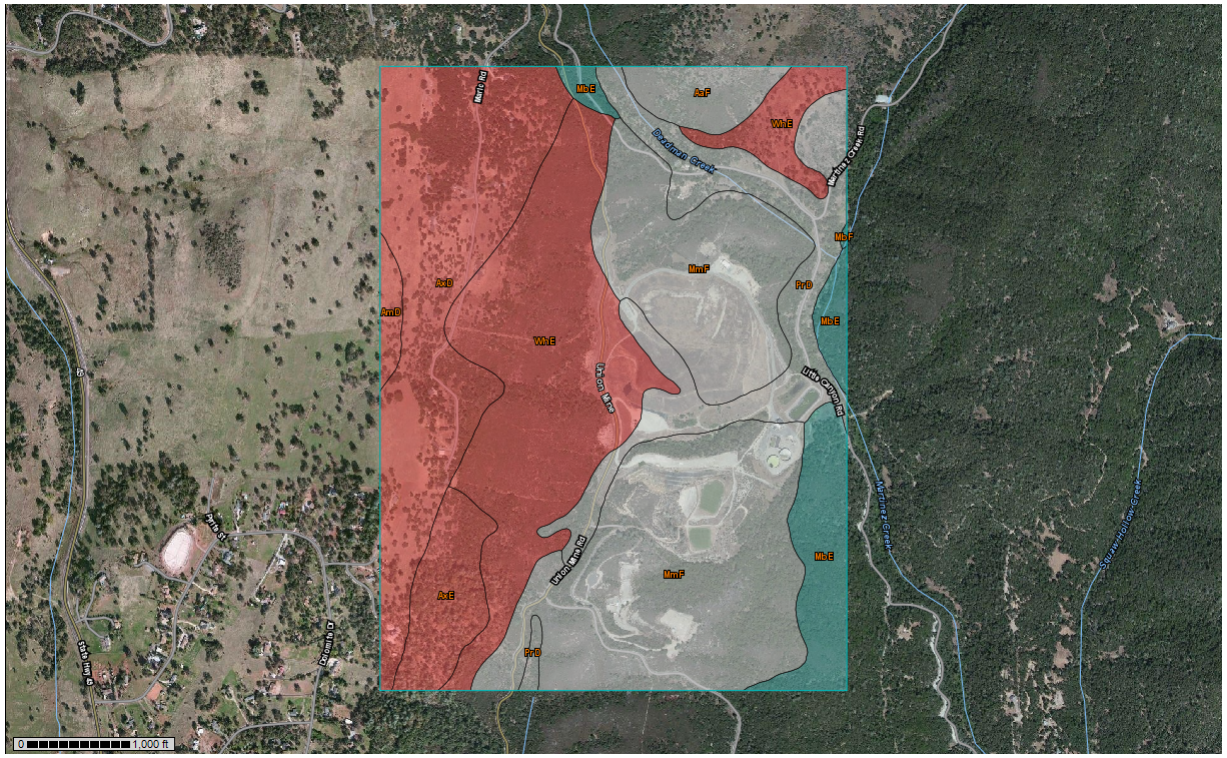
Map ☑
Table ☑
Description of Rating ☑
Rating Options ☑
Detailed Description ☐

Advanced Options

Aggregation Method: Dominant Condition
Component Percent Cutoff:
Tie-break Rule: Lower

Map — Hydrologic Soil Group

Scale (not to scale)



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

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

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

Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — El Dorado Area, California (CA624)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AaF	Acidic rock land		17.0	2.7%
AmD	Argonaut very rocky loam, 3 to 30 percent slopes	D	5.8	0.9%
AxD	Auburn very rocky silt loam, 2 to 30 percent slopes	D	120.0	19.1%
AxE	Auburn very rocky silt loam, 30 to 50 percent slopes	D	26.2	4.2%
MbE	Mariposa very rocky silt loam, 3 to 50 percent slopes	C	40.5	6.4%
MbF	Mariposa very rocky silt loam, 50 to 70 percent slopes	C	0.3	0.0%
MmF	Metamorphic rock land		206.2	32.8%
PrD	Placer diggings		73.8	11.7%
Totals for Area of Interest			**628.1**	**100.0%**

View Options

Higher

View Description | View Rating

- Map Unit Name
- Parent Material Name
- Representative Slope
- Unified Soil Classification (Surface)

Water Features

- Depth to Water Table
- Flooding Frequency Class
- Ponding Frequency Class

Summary by Map Unit — El Dorado Area, California (CA624)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
WhE	Whiterock gravelly silt loam, 3 to 50 percent slopes	D	138.3	22.0%
Totals for Area of Interest			**628.1**	**100.0%**

Description — Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options — Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Appendix G: CASQA Stormwater BMP Handbook Portal: Industrial and Commercial Fact Sheets

Appendix H: BMP Implementation Log

Table H.1 BMP Implementation Log

Industrial Activity/Material and Location	BMP Description	Implementation Frequency	Implementation Description or Fact Sheet Reference	Person Responsible for Implementing BMP

Appendix I: BMP Observation Forms

MONTHLY BMP INSPECTION REPORT

Date and Time of Inspection:	Date Report Written:

Part I. General Information

Site Information

Facility Name:			
Facility Address:			
Photos Taken: (Circle one)	Yes	No	Photo Reference IDs:

Weather

Estimate storm beginning: (date and time)	Estimate storm duration: (hours)
Estimate time since last runoff from any drainage area: (days or hours)	Rain gauge reading and location: (in)
Is a "Qualifying Storm Event" predicted or did one occur (i.e., discharge from site preceded by 48-hrs without discharge)? (Y/N) If yes, summarize forecast:	

Exception Documentation (explanation required if inspection could not be conducted).

Inspector Information

Inspector Name:	Inspector Title:
Signature:	Date:

Part II. BMP Observations. Describe deficiencies in Part III.			
Minimum BMPs (List and Inspect all BMPs Implemented)	Failures or other Deficiencies (yes, no, N/A)	Action Required (yes/no)	Action Implemented (Date)
Good Housekeeping			
Preventative Maintenance			
Spill and Leak Prevention and Response			
Materials Handling and Waste Management			
Erosion and Sediment Controls			

Part II. BMP Observations Continued. Describe deficiencies in Part III.			
Advanced BMPs (List and Inspect all BMPs Implemented)	Adequately designed, implemented and effective (yes, no, N/A)	Action Required (yes/no)	Action Implemented (Date)
Exposure Minimization BMPs			
Stormwater Containment and Discharge Reduction BMPs			
Treatment Control BMPs			
Other Advanced BMPs			

Part III. Descriptions of BMP Deficiencies		
Deficiency	**Repairs Implemented: Note - Repairs must be completed as soon as possible.**	
	Repaired (Y/N)	**Corrective Action Implemented**
1.		
2.		
3.		
4.		

Part IV. Additional Corrective Actions Required. **Identify additional corrective actions not included with BMP Deficiencies (Part III) above. Identify BMPs that need more frequent inspection. Note if SWPPP change is required.**	
Required Actions	**Implementation Date**

Appendix J: Industrial General Permit