

Appendix J Storm Water Pollution Prevention Plan

Appendix

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Preliminary

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Storm Water Pollution Prevention Plan

For:
Irvine Animal Care Center

RISK LEVEL 2

Legally Responsible Person:

Name

Title

Address

Address

Prepared For:
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6443 Oak Canyon
Irvine, CA 92618

Project Address:
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SWPPP Preparation Date:
November 2, 2021
BKF # 20181414

Estimated Project Dates:

Start of Construction: November 15, 2018

Completion of Construction: December 15, 2018

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Qualified SWPPP Developer (QSD)

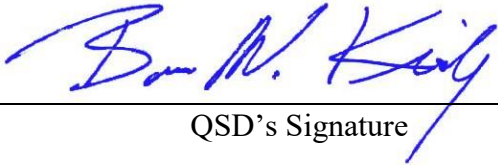
Approval and Certification of the Stormwater Pollution Prevention Plan

Project Name: Irvine Animal Care Center

Permit No.#: _____

BKF Project Number: 20181414

"This Stormwater Pollution Prevention Plan and Attachments were prepared under my direction to meet the requirements of the California Construction General Permit (SWRCB Orders No. 2009-009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."



QSD's Signature

Date

Date

Bruce Kirby

QSD's Name

C42393

QSD Certificate Number

Project Manager / BKF Engineers

Title and Affiliation

(949) 526-8465

Telephone Number

bkirby@bkf.com

Email

Legally Responsible Person

Approval and Certification of the Stormwater Pollution Prevention Plan

Project Name: Irvine Animal Care Center

Permit No.#: _____

BKF Project Number: 20181414

" 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."

XXXXXXXXXX

Legally Responsible Person

Signature of [Authorized Representative of] Legally Responsible Person or Approved Signatory

Date

XXXXXXXXXX

Name of [Authorized Representative of] Legally Responsible Person or Approved Signatory

XXX-XXX-XXXX

Telephone Number

Section 1 SWPPP Requirements

1.1 Introduction

The Irvine Animal Care Center comprises approximately 1.6 acres and is located at 6443 Oak Canyon, Irvine, California. The property is currently owned the City of Irvine. The projects location is shown on the Site Map in Appendix B.

This Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009-0009-DWQ as amended in 2010 and 2012 (NPDES No. CAS000002) 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: Construction* (CASQA, 2012). In accordance with the General Permit, Section XIV, this SWPPP is designed to address the following:

- Pollutants and their sources, including sources of sediment associated with construction, construction site erosion and other activities associated with construction activity are controlled;
- Where not otherwise required to be under a Regional Water Quality Control Board (Regional Water Board) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard;

Calculations and design details as well as BMP controls for are complete and correct, Appendix A.

1.2 Permit Registration Documents

Required Permit Registration Documents (PRDs) shall be 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. Risk Assessment (Construction Site Sediment and Receiving Water Risk Determination);
3. Site Map;
4. Annual Fee;
5. Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal); and
6. SWPPP.

Site Maps can be found in Appendix B. A copy of the submitted PRDs shall also be kept in Appendix C along with the Waste Discharge Identification (WDID) confirmation.

1.3 SWPPP Availability and Implementation

The discharger shall make the SWPPP available at the construction site during working hours

(see Section 7.5 of CSMP for working hours) while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone. (CGP Section XIV.C)

The SWPPP shall be implemented concurrently with the start of ground disturbing activities.

1.4 SWPPP Amendments

The SWPPP should be revised when:

- If there is a General Permit violation.
- When there is a reduction or increase in total disturbed acreage (General Permit Section II Part C).
- BMPs do not meet the objectives of reducing or eliminating pollutants in stormwater discharges.

Additionally, the SWPPP shall be amended when:

- There is a change in construction or operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4);
- When there is a change in the project duration that changes the project's risk level; or
- When deemed necessary by the QSD. The QSD has determined that the changes listed in Table 1.1 can be field determined by the QSP. All other changes shall be made by the QSD as formal amendments to the SWPPP.

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original BMP proposed, if any; and
- The new BMP proposed.

Amendment shall be logged at the front of the SWPPP and certification kept in Appendix D. The SWPPP text shall be revised replaced, and/or hand annotated as necessary to properly convey the amendment. SWPPP amendments must be made by a QSD. The following changes have been designated by the QSD as "to be field determined" and constitute minor changes that the QSP may implement based on field conditions.

Table 1.1 List of Changes to be Field Determined

Candidate changes for field location or determination by QSP ⁽¹⁾	Check changes that can be field located or field determined by QSP
Increase quantity of an Erosion or Sediment Control Measure	X
Relocate/Add stockpiles or stored materials	X
Relocate or add toilets	X
Relocate vehicle storage and/or fueling locations	X
Relocate areas for waste storage	X
Relocate water storage and/or water transfer location	X
Changes to access points (entrance/exits)	X
Change type of Erosion or Sediment Control Measure	X
Changes to location of erosion or sediment control	X
Minor changes to schedule or phases	X
Changes in construction materials	X
<i>(1) Any field changes not identified for field location or field determination by QSP must be approved by QSD</i>	

1.5 Retention of Records

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

- The discharger shall furnish the RWQCB, SWRCB, or US Environmental Protection Agency (EPA), within a reasonable time, any requested information to determine compliance with this General Permit
- For active projects we recommend that the SWPPP and copies of the PRDs be kept in the jobsite construction trailer.
- For inactive projects where construction is temporarily idle for an extended period of time, the SWPPP could be kept in the main office of the Owner/Developer, but a notice including the WDID number, location of where the SWPPP is located, and an emergency contact name, and number should be posted in a prominent location, such as the main gate to the construction site.
- A full copy of the SWPPP and all amendments should also be uploaded to the SMARTS database so that electronic copies of the SWPPP, amendments, and PRDs are always available for SWRCB, RWQCB, local agency inspectors, subcontractors, etc. to access and review

These records shall be available at the Site until construction is complete. Records assisting in the determination of compliance with the General Permit shall be made available within a reasonable time, to the Regional Water Board, State Water Board or U.S. Environmental Protection Agency (EPA) upon request. Requests by the Regional Water Board for retention of records for a period longer than three years shall be adhered to.

1.6 Required Non-Compliance Reporting

If a General Permit discharge violation occurs the QSP shall immediately notify the LRP. The LRP shall include information on the violation with the Annual Report. Corrective measures will be implemented immediately following identification of the discharge or written notice of non-compliance from the Regional Water Board. Discharges and corrective actions must be documented and include the following items:

- The date, time, location, nature of operation and type of unauthorized discharge.
- The cause or nature of the notice or order.
- The control measures (BMPs) deployed before the discharge event, or prior to receiving notice or order.
- The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence.

1.7 Annual Report

The General Permit requires that permittees prepare, certify, and electronically submit an Annual Report no later than September 1st of each year. Reporting requirements are identified in Section XVI of the General Permit. Annual reports will be filed in SMARTS and in accordance with information required by the on-line forms.

1.8 Changes to Permit Coverage

The General Permit allows for the reduction or increase of the total acreage covered under the General Permit when: a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs shall be filed electronically within 30 days of a reduction or increase in total disturbed area if a change in permit covered acreage is to be sought. The SWPPP shall be modified appropriately, shall be logged at the front of the SWPPP and certification of SWPPP amendments are to be kept in Appendix D. Updated PRDs submitted electronically via SMARTS can be found in Appendix E.

1.9 Notice of Termination

A Notice of Termination (NOT) must be submitted electronically by the LRP via SMARTS to terminate coverage under the General Permit. The NOT must include a final Site Map and representative photographs of the project site that demonstrate final stabilization has been achieved. The NOT shall be submitted within 90 days of completion of construction. The Regional Water Board will consider a construction site complete when the conditions of the General Permit, Section II.D have been met.

Section 2 Project Information

2.1 Project and Site Description

2.1.1 Project and Site Description

The Irvine Animal Care Center site comprises approximately 1.6 acres and is located at 6443 Oak Canyon, Irvine, California. The project site is located west of Sand Canyon Avenue and south of the I-5 freeway. The project is located at 33.6752295 Latitude and -117.7641108 Longitude and is identified on the Site Map in Appendix B.

2.1.2 Existing Conditions

As of the initial date of this SWPPP, the project site currently consists of four existing buildings, landscaping with trees and grass, and a paved parking area.

2.1.3 Existing Drainage

The project site is relatively flat with an average slope of 1.2% grade. The elevation of the project site ranges from 183.1 feet to 175.4 feet above mean sea level (msl). Surface drainage at the site currently flows from east to west via surface runoff and then discharges offsite. Stormwater discharges, from the site, are considered direct discharges, as defined by the State Water Board into the Upper Newport Bay. Existing site topography drainage patterns, and stormwater conveyance systems are shown on the Site Improvement Plan.

The project discharges to the Upper Newport Bay that is listed for water quality impairment on the most recent 303(d) list for chlordane, copper, DDT, indicator bacteria, malathion, PCBs, sedimentation/siltation, toxicity.

2.1.4 Geology and Groundwater

The soils encountered in the boring during the Geotechnical Investigation performed by GMU Geotechnical, Inc. on March 26, 2021 were as follows:

Fill: A fill soil consisting of dark brown to brownish yellow, damp to moist, silty to clayey sands and sandy clays were encountered approximately 3 to 4 feet in depth. These soils were noted to be fine-grained fill with medium to high plasticity/expansion characteristics.

Natural: Younger alluvial fan deposits were discovered at a maximum depth of 51 feet. The soil encountered consisted mainly of loose to dense, light brown to yellowish brown, crudely stratified sandy clays, silty sands, clayey sands, and poorly graded sands which ranged from dry to moist.

Groundwater was not encountered within any drill holes to a maximum depth of 51 feet.

2.1.5 Project Description

Project grading will occur on approximately 1.6 acres of the project, which comprises approximately 43 percent of the total area. The limits of grading are shown on the site map in Appendix B. Grading will include both cut and fill activities, with the total graded material estimated to be 678 cubic yards. Approximately 678 cubic yards of fill material will be imported during grading activities. Graded materials are expected to be hauled away. Soil will be stockpiled shown on the site map in Appendix B.

2.1.6 Developed Condition

Post construction surface drainage will maintain drainage moving towards the westerly direction as surface flow and will be collected in an underground tank detention system and then treated in a modular wetland. Once filtered through the wetland, the stormwater will enter the existing storm drain main line.

Post construction drainage patterns and conveyance systems are presented on the Grading Plan on Sheet 3 in Appendix B.

Table 2.1 Construction Site Estimates

Construction Site Area	1.6	Acres
Percent impervious before construction	32	%
Runoff coefficient before construction	0.4	
Percent impervious after construction	45	%
Runoff coefficient after construction	0.47	

2.2 Permits and Governing Documents

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

- Regional Water Board requirements
- Basin Plan requirements
- Contract Documents
- Air Quality Regulations and Permits
- Federal Endangered Species Act
- National Historic Preservation Act/Requirements of the State Historic Preservation Office
- State of California Endangered Species Act
- Clean Water Act Section 401 Water Quality Certifications and 404 Permits
- CA Department of Fish and Game 1600 Streambed Alteration Agreement

2.3 Stormwater Run-on from Offsite Areas

There is no anticipated offsite run-on to this construction site because the site is draining towards the street.

2.4 Findings of the Construction Site Sediment and Receiving Water Risk Determination

A construction site risk assessment has been performed for the project and the resultant risk level is Risk Level 2. The risk level was determined through the use of the EPA Erosivity Calculator, RUSLE K, and site specific LS Factor Map. The risk level is based on project duration, location,

proximity to impaired receiving waters and soil conditions.

Table 2.2 and Table 2.3 summarize the sediment and receiving water risk factors and document the sources of information used to derive the factors.

Table 2.2 Summary of Sediment Risk

RUSLE Factor	Value	Method for establishing value
R	1.77	EPA Erosivity Calculator
K	0.32	RUSLE K Value Map
LS	0.65	RUSLE LS Value Map
Total Predicted Sediment Loss (ton/acre) = 0.37		
Overall Sediment Risk Low Sediment Risk < 15 tons/acre Medium Sediment Risk >= 15 and 75 tons/acre High Sediment Risk >= 75 tons/acre		<input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Runoff from the project site discharges into a series of underground storm drainage pipes that discharge into the Upper Newport and eventually into the Pacific Ocean.

Table 2.3 Summary of Receiving Water Risk

Receiving Water Name	303(d) Listed for Sediment Related Pollutant ⁽¹⁾	TMDL for Sediment ⁽¹⁾	Beneficial Uses of COLD, SPAWN, and MIGRATORY ⁽¹⁾
Upper Newport Bay	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Overall Receiving Water Risk			<input type="checkbox"/> Low <input checked="" type="checkbox"/> High
(1) If yes is selected for any option the Receiving Water is High			

Risk Level 2

Risk Level 2 sites are subject to both the narrative effluent limitations and numeric effluent standards. The narrative effluent limitations require stormwater discharges associated with construction activity to minimize or prevent pollutants in stormwater and authorized non-stormwater through the use of control, structures, and best management practices. Discharges from Risk Level 2 site are subject to NALs for pH and turbidity shown in Tables 2-4. This SWPPP has been prepared to address Risk Level 2 requirements (General Permit Attachment C)

2.5 Construction Schedule

The site sediment risk was determined based on construction taking place between **November 15, 2018 and December 15, 2018**. Modification or extension of the schedule (start and end dates) may affect risk determination and permit requirements. The LRP shall contact the QSD if the schedule changes during construction to address potential impact to the SWPPP. The estimated schedule for planned work can be found in Appendix F.

2.6 Potential Construction Site Pollutant Sources

Appendix G includes a list of construction activities and associated materials that are anticipated to be used onsite. These activities and associated materials will or could potentially contribute pollutants, other than sediment, to stormwater runoff.

The anticipated activities and associated pollutants were used in Section 3 to select the Best Management Practices for the project. Location of anticipated pollutants and associated BMPs are shown on the Site Map in Appendix B.

For sampling requirements for non-visible pollutants associated with construction activity please refer to Section 7.7.1. For a full and complete list of onsite pollutants, refer to the Material Safety Data Sheets (MSDS), which are retained onsite at the construction trailer.

2.7 Identification of Non-Storm Water Discharges

Non-stormwater discharges consist of discharges which do not originate from precipitation events. The General Permit provides allowances for specified non-stormwater discharges that do not cause erosion or carry other pollutants.

Non-stormwater discharges 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 from this project site include the following:

- NONE

These authorized non-stormwater discharges will be managed with the stormwater and nonstormwater BMPs described in Section 3 of this SWPPP and will be minimized by the QSP.

Activities at this site that may result in unauthorized non-stormwater discharges include:

- Vehicle and equipment cleaning, fueling and maintenance
- Surface water diversions,
- Dewatering operations
- Saw-cutting
- Drilling
- Boring
- AC and PCC grinding
- AC and PCC recycling
- Concrete mixing
- Crushing
- Blasting
- Painting
- Hydro-demolition
- Mortar mixing
- Air-blown mortar

Steps will be taken, including the implementation of appropriate BMPs, to ensure that unauthorized discharges are eliminated, controlled, disposed, or treated on-site.

Discharges of construction materials and wastes, such as fuel or paint, resulting from dumping, spills, or direct contact with rainwater or stormwater runoff, are also prohibited.

2.8 Required Site Map Information

The construction project's Site Map(s) showing the project location, surface water boundaries, geographic features, construction site perimeter and general topography and other requirements identified in Attachment B of the General Permit is located in Appendix B. Table 2.5 identifies Map or Sheet Nos. where required elements are illustrated.

Table 2.5 Required Map Information

Included on Map/Plan Sheet No.⁽¹⁾	Required Element
Site Maps on Appendix B	The project's surrounding area (vicinity)
Site Maps on Appendix B	Site layout
Site Maps on Appendix B	Construction site boundaries
Site Maps on Appendix B	Drainage areas
Site Maps on Appendix B	Discharge locations
Site Maps on Appendix B	Sampling locations
Site Maps on Appendix B	Areas of soil disturbance (temporary or permanent)
Site Maps on Appendix B	Active areas of soil disturbance (cut or fill)
Site Maps on Appendix B	Locations of runoff BMPs
Site Maps on Appendix B	Locations of erosion control BMPs
Site Maps on Appendix B	Locations of sediment control BMPs
N/A	ATS location (if applicable)
N/A	Locations of sensitive habitats, watercourses, or other features which are not to be disturbed
Site Maps on Appendix B	Locations of all post construction BMPs

Notes: (1) Indicate maps or drawings that information is included on (e.g., Vicinity Map, Site Map, Drainage Plans, Grading Plans, Progress Maps, etc.)

Section 3 Best Management Practices

3.1 BMP Implementation

Table 3.1 BMP Implementation

	BMP	Implementation	Duration
Erosion Control	EC-1 Scheduling	Prior to Construction	Entirety of Project
	EC-5 Soil Binders	During Construction	Entirety of Project
Sediment Control	SE-6 Gravel Bag Berm	During Construction	Entirety of Project
Tracking Control	TC-1 Stabilized Construction Entrance and Exit	During Construction	Entirety of Project
Wind Erosion	WE-1 Wind Erosion Control	During Construction	Entirety of Project

3.2 Erosion and Sediment Control

Erosion and sediment controls are required by the General Permit to provide effective reduction or elimination of sediment related pollutants in stormwater discharges and authorized nonstormwater discharges from the Site. Applicable BMPs are identified in this section for erosion control, sediment control, tracking control, and wind erosion control.

3.2.1 Erosion Control

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater

runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles. This construction project will implement the following practices to provide effective temporary and final erosion control during construction:

1. Preserve existing vegetation where required and when feasible.
2. The area of soil disturbing operations shall be controlled such that the Contractor is able to implement erosion control BMPs quickly and effectively.
3. Stabilize non-active areas within 14 days of cessation of construction activities or sooner if stipulated by local requirements.
4. Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding or alternate methods.
5. Prior to the completion of construction, apply permanent erosion control to remaining disturbed soil areas.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP.

The following temporary erosion control BMP selection table indicates the BMPs that shall be implemented to control erosion on the construction site. Fact Sheets for temporary erosion control BMPs are provided in Appendix H.

Table 3.2 Temporary Erosion Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement ⁽¹⁾	BMP Use		If not used, state reason
			YES	NO	
EC-1	Scheduling	X	X		
EC-2	Preservation of Existing Vegetation	X		X	Not proposed for this project
EC-3	Hydraulic Mulch	X ⁽²⁾		X	Not proposed for this project
EC-4	Hydroseed	X ⁽²⁾		X	Not proposed for this project
EC-5	Soil Binders	X ⁽²⁾		X	Not proposed for this project
EC-6	Straw Mulch	X ⁽²⁾		X	Not proposed for this project
EC-7	Geotextiles and Mats	X ⁽²⁾		X	Not proposed for this project
EC-8	Wood Mulching	X ⁽²⁾		X	Not proposed for this project
EC-9	Earth Dike and Drainage Swales	X ⁽³⁾		X	Not proposed for this project
EC-10	Velocity Dissipation Devices			X	Not proposed for this project
EC-11	Slope Drains			X	Not proposed for this project
EC-12	Stream Bank Stabilization			X	Not proposed for this project
EC-14	Compost Blankets	X ⁽²⁾		X	Not proposed for this project
EC-15	Soil Preparation-Roughening			X	Not proposed for this project
EC-16	Non-Vegetated Stabilization	X ⁽²⁾		X	Not proposed for this project
WE-1	Wind Erosion Control	X	X		

Alternate BMPs Used:	If used, state reason:
(1) Applicability to a specific project shall be determined by the QSD. (2) The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements. (3) Run-on from offsite shall be directed away from all disturbed areas, diversion of offsite flows may require design/analysis by a licensed civil engineer and/or additional environmental permitting	

These temporary erosion control BMPs shall be implemented in conformance with the following guidelines and as outlined in the BMP Factsheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Scheduling

Perimeter sediment controls, including controls along the physical site perimeter and at active storm drain inlets and sediment basins, shall be implemented before the start of construction for each major active area of construction, and maintained throughout the duration of construction activities for each area. Additional sediment control measures will be taken during the rainy season including additional temporary debris basins and stockpiling of emergency gravel bags. Perimeter controls will be added as new active construction areas come online.

Schedule major grading operations during dry months when practical. Allow sufficient time prior to the onset of rainfall to stabilize the soil with vegetation or physical means or to install sediment trapping devices. When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.

Wind Erosion Control

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection.

3.2.2 Sediment Control

Sediment controls are temporary or permanent structural measures that are intended to complement the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

The following sediment control BMP selection table indicates the BMPs that shall be implemented to control sediment on the construction site. Fact Sheets for temporary sediment control BMPs are provided in Appendix H.

Table 3.3 Temporary Sediment Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement ⁽¹⁾	BMP Use		If not used, state reason
			YES	NO	
SE-1	Silt Fence	X ⁽²⁾		X	Not proposed for this project
SE-2	Sediment Basin			X	Not proposed for this project
SE-3	Sediment Trap			X	Not proposed for this project
SE-4	Check Dams			X	Not proposed for this project
SE-5	Fiber Rolls	X ⁽²⁾	X	X	
SE-6	Gravel Bag Berm	X	X		
SE-7	Street Sweeping	X	X		
SE-8	Sandbag Barrier			X	Not proposed for this project
SE-9	Straw Bale Barrier			X	Not proposed for this project
SE-10	Storm Drain Inlet Protection	X ⁽³⁾	X		
SE-11	ATS			X	Not proposed for this project
SE-12	Manufactured Linear Sediment Controls			X	Not proposed for this project
SE-13	Compost Sock and Berm	X ⁽³⁾		X	Not proposed for this project
TC-1	Stabilized Construction Entrance and Exit	X ⁽³⁾	X		
TC-2	Stabilized Construction Roadway			X	Not proposed for this project
TC-3	Entrance Outlet Tire Wash			X	Not proposed for this project
Alternate BMPs Used:					If used, state reason:
<p>(1) Applicability to a specific project shall be determined by the QSD (2) The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements (3) Risk Level 2 & 3 shall provide linear sediment control along toe of slope, face of slope, and at the grade breaks of exposed slope</p>					

These temporary sediment control BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the

SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Street Sweeping

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Street sweeping will be utilized throughout the adjacent roads for this project.

Storm Drain Inlet Protection

Storm drain inlet protection consists of a sediment filter or an impounding area in, around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain.

Storm drain inlet protection will be utilized throughout the project site for existing and proposed inlets.

Stabilized Construction Entrance and Exit

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

A Stabilized Construction Entrance and Exit will be utilized throughout the course of the construction of this project.

3.3 Non-Storm Water and Materials Management

3.3.1 Non-Stormwater Controls

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the General Permit, are prohibited. Non-stormwater discharges for which a separate NPDES permit is required by the local Regional Water Board are prohibited unless coverage under the separate NPDES permit has been obtained for the discharge. The selection of nonstormwater BMPs is based on the list of construction activities with a potential for nonstormwater discharges identified in Section 2.7 of this SWPPP.

The following non-stormwater control BMP selection table indicates the BMPs that shall be implemented to control sediment on the construction site. Fact Sheets for temporary nonstormwater control BMPs are provided in Appendix H.

Table 3.4 Temporary Non-Stormwater BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement ⁽¹⁾	BMP Use		If not used, state reason
			YES	NO	
NS-1	Water Conservation Practices	X	X		
NS-2	Dewatering Operation			X	Not proposed for this project
NS-3	Paving and Grinding Operation		X		
NS-4	Temporary Stream Crossing			X	Not proposed for this project
NS-5	Clear Water Diversion			X	Not proposed for this project
NS-6	Illicit Connection/Discharge	X	X		
NS-7	Potable Water/Irrigation			X	Not proposed for this project
NS-8	Vehicle and Equipment Cleaning	X	X		
NS-9	Vehicle and Equipment Fueling	X		X	Not proposed for this project
NS-10	Vehicle and Equipment Maintenance	X	X		
NS-11	Pile Driving Operation			X	Not proposed for this project
NS-12	Concrete Curing		X		
NS-13	Concrete Finishing		X		
NS-14	Material and Equipment Use Over Water			X	Not proposed for this project
NS-15	Demolition Removal Adjacent to Water			X	Not proposed for this project
NS-16	Temporary Batch Plants			X	Not proposed for this project
Alternate BMPs Used:					If used, state reason:
(1) Applicability to a specific project shall be determined by the QSD					

Non-stormwater BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Water Conservation Practices

Water conservation practices shall be implemented to prevent erosion and the transport of pollutants off-site. Water equipment shall be maintained in good working order, water truck filling area will be stabilized, water leaks shall be repaired promptly, and vehicle / equipment washing is discouraged.

Paving and Grinding Operation

In order to reduce the potential for the transport of pollutants in storm water runoff from paving operations, paving shall be avoided within 72 hours of a forecast significant storm event. Paving and grinding materials shall be stored away from drainage courses. Train employees and sub-contractors in pollution prevention and reduction. Disposal of PCC (Portland cement concrete) and AC (asphalt concrete) waste should be in conformance with WM-8, Concrete Waste Management.

Illicit Connection/Discharge

The contractor shall regularly inspect the project site for illicit connections and discharges off-site (quarterly at a minimum). Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery and document in SWPPP. For illicit connections or discharges to the storm drain system, notify the local storm water management agency. For illegal dumping, notify the local law enforcement agency.

Vehicle and Equipment Cleaning

Vehicles and equipment will be washed off-site at a proper wash facility. The contractor should not permit any vehicle or equipment washing at the job site, unless the wash water can be appropriately captured and treated. Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.

Vehicle and Equipment Maintenance

Vehicles and equipment will be washed off-site at a proper wash facility. The contractor should not permit any vehicle or equipment washing at the job site, unless the wash water can be appropriately captured and treated. Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.

Concrete Curing

Avoid overspraying of curing compounds. Should runoff be generated, cure water shall be directed away from inlets to areas for infiltration or collection and disposal. Protect drain inlets prior to the application of curing compounds. See WM-8 Concrete Waste Management.

Concrete Finishing

Should runoff be generated, water from blasting operations shall be directed away from inlets to areas for infiltration or collection and disposal. Debris from blasting operations should be swept up at the end of each shift. Refer to WM-8, Concrete Waste Management for disposal of concrete debris. Protect inlets during sandblasting operations. Refer to SE-10, Storm Drain Inlet Protection.

3.3.2 Materials Management and Waste Management

Materials management control practices consist of implementing procedural and structural BMPs for handling, storing and using construction materials to prevent the release of those materials into stormwater discharges. The amount and type of construction materials to be utilized at the Site will depend upon the type of construction and the length of the construction period. The materials may be used continuously, such as fuel for vehicles and equipment, or the materials may be used for a discrete period, such as soil binders for temporary stabilization.

Waste management consist of implementing procedural and structural BMPs for handling, storing and ensuring proper disposal of wastes to prevent the release of those wastes into stormwater discharges.

Materials and waste management pollution control BMPs shall be implemented to minimize stormwater contact with construction materials, wastes and service areas; and to prevent materials and wastes from being discharged off-site. The primary mechanisms for stormwater contact that shall be addressed include:

- Direct contact with precipitation
- Contact with stormwater run-on and runoff
- Wind dispersion of loose materials
- Direct discharge to the storm drain system through spills or dumping
- Extended contact with some materials and wastes, such as asphalt cold mix and treated wood products, which can leach pollutants into stormwater.

A list of construction activities is provided in Section 2.6. The following Materials and Waste Management BMP selection table indicates the BMPs that shall be implemented to handle materials and control construction site wastes associated with these construction activities. Fact Sheets for Materials and Waste Management BMPs are provided in Appendix H.

Table 3.5 Temporary Materials Management BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement ⁽¹⁾	BMP Use		If not used, state reason
			YES	NO	
WM-01	Material Delivery and Storage	X	X		
WM-02	Material Use	X	X		
WM-03	Stockpile Management	X	X		
WM-04	Spill Prevention and Control	X	X		
WM-05	Solid Waste Management	X	X		
WM-06	Hazardous Waste Management	X	X		
WM-07	Contaminated Soil Management			X	Not proposed for this project.
WM-08	Concrete Waste Management	X	X		
WM-09	Sanitary-Septic Waste Management	X	X		
WM-10	Liquid Waste Management				
Alternate BMPs Used:				If used, state reason:	
(1) Applicability to a specific project shall be determined by the QSD.					

Material management BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Material Delivery and Storage

All construction materials will be delivered to and stored in designated areas at the construction site. The main loading, unloading, and access areas shall be located away from storm drain facilities and drainage courses. The contractor will construct enclosures or flow barriers around these areas to prevent storm water flows and pollutants from entering storm drains or receiving waters. Berms, palletes, secondary containment measures and/or storage sheds shall be used where applicable.

Material Use

All materials shall be used according to the directions provided on their labels. Manufacturer’s instructions shall be followed and employees will be provided training on proper material use. Material Safety Data Sheets (MSDS) should be available on-site for all materials stored that have the potential to effect water quality. Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous,

with other construction debris. Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste. Keep ample supplies of spill cleanup material near use areas in accordance with WM-4, Spill Prevention and Control.

Stockpile Management

Sediment stockpiles will be located away from drainage courses (minimum of 50 ft separation recommended) and protected from run-on using temporary sediment barriers such as fiber rolls (SE-5), sandbags (SE-8), or gravel bags (SE-6). Refer to the individual fact sheet for each of these controls for installation information. During the rainy season, soil stockpiles will be covered at all times when not in use. During the dry season, they shall be covered prior to the onset of precipitation. Construction bagged materials stockpiles, such as cold mix, will be covered and placed on pallets and under cover.

Spill Prevention and Control

Spills will be cleaned up immediately. Hazardous materials will be stored in covered containers. Spill and cleanup kits should be readily available on-site. Proper spill cleanup procedures and spill reporting instructions shall be posted in an accessible and visible location. Hosing down of spills is prohibited. Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.

Solid Waste Management

Waste collection areas shall be designate on-site and the areas Solid Waste should provide covers or secondary containment. Trash and debris Management should also be collected on a daily basis. The disposal of liquid or hazardous wastes in this area should not be allowed. Trash receptacles will also be provided throughout the project site to prevent littering. Arrange for regular waste collection before containers overflow. Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.

Hazardous Waste Management

Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179. Hazardous wastes shall be disposed of in accordance to federal, state, and local regulations. Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater. Paint washouts will be provided where painting activities occur. Employees will be trained appropriately on hazardous waste management.

Contaminated Soil Management

Minimize onsite storage of contaminated soils. Contaminated soils should be disposed of properly in accordance with all applicable regulations. If temporary stockpiling is necessary, cover the stockpile with plastic sheeting or tarps, install a berm around the stockpile to prevent runoff from leaving the area, and do not stockpile in or near storm drains or watercourses. Implement WM-4, Spill Prevention and Control, to prevent leaks and spills as much as possible.

Concrete Waste Management

Whenever possible, concrete trucks will be washed out off-site in designated areas. If washout must occur on-site, wash water will be contained in a temporary washout facility. Washout should be lined so there is no discharge into the underlying soil. Upon completion of the concrete work, the contractor will break up, remove, and haul away solid concrete that has accumulated in the washout pit. Stockpile concrete demolition waste in accordance with BMP WM3, Stockpile Management.

Sanitary-Septic Waste Management

All sanitary wastes will be collected and managed through the use of portable toilet facilities. Portable toilets will be transported to and from the construction site by a licensed contractor. Portable toilets shall be located away from drainage coursed (recommended minimum of 50 ft), and equipped with containment. No sanitary wastes will be disposed of on-site. If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and cleanup.

Liquid Waste Management

Liquid wastes generated as part of an operational procedure should be contained and not allowed to flow into drainage channels or receiving waters prior to treatment. Liquid wastes should be contained in a controlled area such as a holding pit, sediment basin, roll-off bin, or portable tank. Containment devices must be structurally sound, leak free, and of sufficient quantity or volume to completely contain the liquid wastes generated. Containment areas or devices should not be located where accidental release of the contained liquid can threaten health or safety or discharge to water bodies, channels, or storm drains. Implement WM-4, Spill Prevention and Control, to prevent leaks and spills as much as possible.

3.4 Post-Construction Storm Water Management Measures

Post construction BMPs are permanent measures installed during construction, designed to reduce or eliminate pollutant discharges from the site after construction is completed.

This site is located in an area subject to a Phase I or Phase II Municipal Separate Storm Sewer System (MS4) permit approved Stormwater Management Plan. Yes No

Post construction runoff reduction requirements have been satisfied through the MS4 program. This project is exempt from provision XIII A of the General Permit.

Section 4 BMP Inspection, Maintenance, and Rain Event Action Plans

4.1 BMP Site Inspection and Maintenance

The General Permit requires routine weekly inspections of BMPs, along with inspections before, during, and after qualifying rain events. A BMP inspection checklist must be filled out for inspections and maintained on-site with the SWPPP. The inspection checklist includes the necessary information covered in Section 7.6. A blank inspection checklist can be found in Appendix I. Completed checklists shall be kept in CSMP Attachment 2 “Monitoring Records. BMPs shall be maintained regularly to ensure proper and effective functionality. If necessary, corrective actions shall be implemented within 72 hours of identified deficiencies and associated amendments to the SWPPP shall be prepared by the QSD.

Specific details for maintenance, inspection, and repair of Construction Site BMPs can be found in the BMP Factsheets in Appendix H.

4.2 Rain Event Action Plans

The Rain Event Action Plans (REAP) is written document designed to be used as a planning tool by the QSP to protect exposed portions of project sites and to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures. These measures are intended to reduce the amount of sediment and other pollutants that could be generated during the rain event. It is the responsibility of the QSP to be aware of precipitation forecast and to obtain and print copies of forecasted precipitation from NOAA’s National Weather Service Forecast Office.

The SWPPP includes REAP templates but the QSP will need to customize them for each rain event. Site-specific REAP templates for each applicable project phase can be found in Appendix J. The QSP shall maintain a paper copy of completed REAPs in compliance with the record retention requirements Section 1.5 of this SWPPP. Completed REAPs shall be maintained in Appendix J.

The QSP will develop an event specific REAP 48 hours in advance of a precipitation event forecast to have a 50% or greater chance of producing precipitation in the project area. The REAP will be onsite and be implemented 24 hours in advance of any the predicted precipitation event.

At minimum the REAP will include the following site and phase-specific information:

1. Site Address;
2. Calculated Risk Level (2 or 3);
3. Site Stormwater Manager Information including the name, company and 24-hour emergency telephone number;
4. Erosion and Sediment Control Provider information including the name, company and 24-hour emergency telephone number;

5. Stormwater Sampling Agent information including the name, company, and 24-hour emergency telephone number;
6. Activities associated with each construction phase;
7. Trades active on the construction site during each construction phase;
8. Trade contractor information; and
9. Recommended actions for each project phase.

Section 5 Training

Appendix K identifies the QSPs for the project. To promote stormwater management awareness specific for this project, periodic training of job-site personnel shall be included as part of routine project meetings (e.g. daily/weekly tailgate safety meetings), or task specific trainings as needed.

The QSP shall be responsible for providing this information at the meetings, and subsequently completing the training logs shown in Appendix J, which identifies the site-specific stormwater topics covered as well as the names of site personnel who attended the meeting. Tasks may be delegated to trained employees by the QSP provided adequate supervision and oversight is provided. Training shall correspond to the specific task delegated including: SWPPP implementation; BMP inspection and maintenance; and record keeping.

Documentation of training activities (formal and informal) is retained in SWPPP Appendix J.

Section 6 Responsible Parties and Operators

6.1 Responsible Parties

Approved Signatory(ies) who are responsible for SWPPP implementation and have authority to sign permit-related documents is listed below. Written authorizations from the LRP for these individuals are provided in Appendix K. The Approved Signatory(ies) assigned to this project is:

Name	Title	Phone Number
XXXXXX	XXXXXX	XXXXXX

QSPs identified for the project are identified in Appendix K. The QSP shall have primary responsibility and significant authority for the implementation, maintenance and inspection/monitoring of SWPPP requirements. The QSP will be available at all times throughout the duration of the project. Duties of the QSP include but are not limited to:

- Implementing all elements of the General Permit and SWPPP, including but not limited to:
 - Ensuring all BMPs are implemented, inspected, and properly maintained;
 - Performing non-stormwater and stormwater visual observations and inspections;
 - Performing non-stormwater and storm sampling and analysis, as required;
 - Performing routine inspections and observations;
 - Implementing non-stormwater management, and materials and waste management activities such as: monitoring discharges; general Site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than stormwater are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems; etc.;
- The QSP may delegate these inspections and activities to an appropriately trained employee, but shall ensure adequacy and adequate deployment.
- Ensuring elimination of unauthorized discharges.
- The QSPs shall be assigned authority by the LRP to mobilize crews in order to make immediate repairs to the control measures.
- Coordinate with the Contractor(s) to assure all of the necessary corrections/repairs are made immediately and that the project complies with the SWPPP, the General Permit and approved plans at all times.
- Notifying the LRP or Authorized Signatory immediately of off-site discharges or other non-compliance events.

6.2 Contractor List

The QSP is required to notify all contractors and subcontractors of the requirement for storm water management measures during the project. A list of contractors and subcontractors shall be maintained by the QSP and included in Appendix L. If subcontractors change during the project, the list will be updated accordingly. A sample “Subcontractor Notification Letter” and log is included in Appendix L.

Contractor

Name: XXXXXX

Title: XXXXXX

Company: XXXXXX

Address: XXXXXX

Phone Number: XXXXXX

Section 7 Construction Site Monitoring Program

7.1 Purpose

This Construction Site Monitoring Program was developed to address the following objectives:

1. To demonstrate that the site is in compliance with the Discharge Prohibitions of the Construction General Permit;
2. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;
3. To determine whether immediate corrective actions, additional Best Management Practices (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges;
4. To determine whether BMPs included in the SWPPP and REAP are effective in preventing or reducing pollutants in stormwater discharges and authorized nonstormwater discharges.

7.2 Applicability of Permit Requirements

This project has been determined to be a Risk Level 2 project. The General Permit identifies the following types of monitoring as being applicable for a Risk Level 2 project.

Risk Level 2

- Visual inspections of Best Management Practices (BMPs);
- Visual monitoring of the site related to qualifying storm events;
- Visual monitoring of the site for non-stormwater discharges;
- Sampling and analysis of construction site runoff for pH and turbidity;
- Sampling and analysis of construction site runoff for non-visible pollutants when applicable; and
- Sampling and analysis of non-stormwater discharges when applicable

7.3 Weather and Rain Event Tracking

Visual monitoring, inspections, and sampling requirements of the General Permit are triggered by a qualifying rain event. The General Permit defines a qualifying rain event as any event that produces ½ inch of precipitation. A minimum of 48 hours of dry weather will be used to distinguish between separate qualifying storm events.

7.3.1 Weather and Rain Event Tracking

The QSP should daily consult the National Oceanographic and Atmospheric Administration (NOAA) for the weather forecasts. These forecasts can be obtained at <http://www.srh.noaa.gov/>. Weather reports should be printed and maintained with the SWPPP in CSMP Attachment 1 “Weather Reports”.

7.3.2 Rain Gauges

The QSP shall install one (1) rain gauge. Locate the gauge in an open area away from obstructions such as trees or overhangs. Mount the gauge on a post at a height of 3 to 5 feet with the gauge extending

several inches beyond the post. Make sure that the top of the gauge is level. Make sure the post is not in an area where rainwater can indirectly splash from sheds, equipment, trailers, etc.

The rain gauge(s) shall be read daily during normal site scheduled hours. The rain gauge should be read at approximately the same time every day and the date and time of each reading recorded. Log rain gauge readings in CSMP Attachment 1 “Weather Records”. Follow the rain gauge instructions to obtain accurate measurements.

Once the rain gauge reading has been recorded, accumulated rain shall be emptied and the gauge reset.

For comparison with the site rain gauge, the QSP shall locate the nearest appropriate governmental rain gauge(s).

7.4 Monitoring Locations

Monitoring locations are shown on the Site Maps in Appendix B. Monitoring locations are described in the Sections 7.6 and 7.7.

Whenever changes in the construction site might affect the appropriateness of sampling locations, the sampling locations shall be revised accordingly. All such revisions shall be implemented as soon as feasible and the SWPPP amended. Temporary changes that result in a one-time additional sampling location do not require a SWPPP amendment.

7.5 Safety and Monitoring Exemptions

This project is not required to collect samples or conduct visual observations (inspections) 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: M – F, 8:00am – 5:00pm

If monitoring (visual monitoring or sample collection) of the site is unsafe because of the dangerous conditions noted above then the QSP shall document the conditions for why an exception to performing the monitoring was necessary. The exemption documentation shall be filed in CSMP Attachment 2 “Monitoring Records”.

7.6 Visual Monitoring

Visual monitoring includes observations and inspections. Inspections 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. Visual observations of the site are required to observe storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources.

Table 7.1 identifies the required frequency of visual observations and inspections. Inspections and observations will be conducted at the locations identified in Section 7.6.3.

Table 7.1 Summary of Visual Monitoring and Inspections

Type of Inspection	Frequency
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<i>Routine Inspections</i>	
BMP Inspections	Weekly ⁽¹⁾
BMP Inspections – Tracking Control	Daily
Non-Stormwater Discharge Observation	Quarterly during daylight hours
<i>Rain Event Triggered Inspections</i>	
Site Inspections Prior to a Qualifying Event	Within 48 hours of a qualifying event ⁽²⁾
BMP Inspections During an Extended Storm Event	Every 24-hour period of a rain event ⁽³⁾
Site Inspections Following a Qualifying Event	Within 48 hours of a qualifying event ⁽²⁾
<p>(1) Most BMPs must be inspected weekly; those identified below must be inspected more frequently. (2) Inspections are required during scheduled site operating hours. (3) Inspections are required during scheduled site operating hours regardless of the amount of precipitation on any given day.</p>	

7.6.1 Routine Observations and Inspections

Routine site inspections and visual monitoring are necessary to ensure that the project is in compliance with the requirements of the Construction General Permit.

7.6.1.1 Routine BMP Inspections

Inspections of BMPs are conducted to identify and record:

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

7.6.1.2 Non-Stormwater Discharge Observations

Each drainage area will be inspected for the presence of or indications of prior unauthorized and authorized non-stormwater discharges. Inspections will 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.

7.6.2 Rain-Event Triggered Observations and Inspections

Visual observations of the site and inspections of BMPs are required prior to a qualifying rain event; following a qualifying rain event, and every 24-hour period during a qualifying rain event. Pre-rain inspections will be conducted after consulting NOAA and determining that a precipitation event with a 50% or greater probability of precipitation has been predicted.

7.6.2.1 Visual Observations Prior to a Forecasted Qualifying Rain Event

Within 48-hours prior to a qualifying event a stormwater visual monitoring site inspection will include observations of the following locations:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources;
- BMPs to identify if they have been properly implemented;
- Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

BMP inspections and visual monitoring will be triggered by a NOAA prediction of rain in the project area.

7.6.2.2 BMP Inspections During an Extended Storm Event

During an extended rain event BMP inspections will be conducted to identify and record:

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

If the construction site is not accessible during the rain event, the visual inspections shall be performed at all relevant outfalls, discharge points, downstream locations. The inspections should record any projected maintenance activities.

7.6.2.3 Visual Observations Following a Qualifying Rain Event

Within 48 hours following a qualifying rain event (0.5 inches of rain) a stormwater visual monitoring site inspection is required to observe:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources;
- BMPs to identify if they have been properly designed, implemented, and effective;
- Need for additional BMPs;
- Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard; and
- Discharge of stored or contained rain water.

7.6.3 Visual Monitoring Procedures

Visual monitoring shall be conducted by the QSP or staff trained by and under the supervision of the QSP.

The name(s) and contact number(s) of the site visual monitoring personnel are listed below and their training qualifications are provided in Appendix J.

Assigned inspector: TBD Contact phone: TBD
Alternate inspector: TBD Contact phone: TBD

Stormwater observations shall be documented on the *Visual Inspection Field Log Sheet* (see CSMP Attachment 3 “Example Forms”). BMP inspections shall be documented on the site specific BMP inspection checklist. Any photographs used to document observations will be referenced on stormwater site inspection report and maintained with the Monitoring Records in Attachment 2.

The QSP shall within [Enter Number] days of the inspection submit copies of the completed inspection report to [Name].

The completed reports will be kept in CSMP Attachment 2 “Monitoring Records”.

7.6.4 Visual Monitoring Follow-Up and Reporting

Correction of deficiencies identified by the observations or inspections, including required repairs or maintenance of BMPs, shall be initiated and completed as soon as possible.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will be initiated within 72 hours of identification and be completed as soon as possible. When design changes to BMPs are required, the SWPPP shall be amended to reflect the changes.

Deficiencies identified in site inspection reports and correction of deficiencies will be tracked on the *Inspection Field Log Sheet* or *BMP Inspection Report* and shall be submitted to the QSP and shall be kept in CSMP Attachment 2 “Monitoring Records”.

The QSP shall within 5 days of the inspection submit copies of the completed *Inspection Field Log Sheet* or *BMP Inspection Report* with the corrective actions to the District Inspector.

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

7.6.5 Visual Monitoring Locations

The inspections and observations identified in Sections 7.6.1 and 7.6.2 will be conducted at the locations identified in this section.

BMP locations are shown on the Site Maps in SWPPP Appendix B.

There are three (3) drainage area(s) on the project site and the contractor’s yard, staging areas, and storage areas. Drainage area(s) are shown on the Site Maps in Appendix B and Table 7.2 identifies each drainage area by location.

Table 7.2 Site Drainage Areas

Location No.	Location
-	See Erosion Control Plan in Appendix B

There is one (1) stormwater storage or containment area on the project site. Stormwater storage or containment area(s) are shown on the Site Maps in Appendix B and Table 7.3 identifies each stormwater storage or containment area by location.

Table 7.3 Stormwater Storage and Containment Areas

Location No.	Location
-	See Erosion Control Plan in Appendix B

There are two (3) discharge location(s) on the project site. Site stormwater discharge location(s) are shown on the Site Maps in Appendix B and Table 7.4 identifies each stormwater discharge location.

Table 7.4 Site Stormwater Discharge Locations

Location No.	Location
-	See Erosion Control Plan in Appendix B

7.7 Water Quality Sampling and Analysis

7.7.1 Sampling and Analysis Plan for Non-Visible Pollutants in Stormwater Runoff Dischargers

This Sampling and Analysis Plan for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in stormwater runoff discharges from the project site.

Sampling for non-visible pollutants will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

The following construction materials, wastes, or activities, as identified in Section 2.6, are potential sources of non-visible pollutants to stormwater discharges from the project. Storage, use, and operational locations are shown on the Site Maps in Appendix B.

The following existing site features, as identified in Section 2.6, are potential sources of nonvisible pollutants to stormwater discharges from the project. Locations of existing site features contaminated with non-visible pollutants are shown on the Site Maps in Appendix B.

- None

The following soil amendments have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil and will be used on the project site. Locations of soil amendment application are shown on the Site Maps in Appendix B.

- Vehicle fluids, including oil, grease, petroleum and coolants
- BMP Materials
- General Litter

The following existing site features, as identified in Section 2.5, are potential sources of non-visible pollutants to stormwater discharges from the project. Locations of existing site features contaminated with non-visible pollutants are shown on the Site Maps in Appendix B.

- None

The project has the potential to receive stormwater run-on from the following locations with the potential to contribute non-visible pollutants to stormwater discharges from the project. Locations of such run-on to the project site are shown on the Site Maps in Appendix B.

- None

7.7.1.1 Sampling Schedule

Samples for the potential non-visible pollutant(s) and a sufficiently large unaffected background sample shall be collected during the first two hours of discharge from rain events that result in a

sufficient discharge for sample collection. Samples shall be collected during the site’s scheduled hours and shall be collected regardless of the time of year and phase of the construction.

Collection of discharge samples for non-visible pollutant monitoring will be triggered when any of the following conditions are observed during site inspections conducted prior to or during a rain event.

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents stormwater contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- A construction activity, including but not limited to those in Section 2.6, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Stormwater runoff from an area contaminated by historical usage of the site has been observed to combine with stormwater runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.

7.7.1.2 Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use; accessibility for sampling, and personnel safety. Planned non-visible pollutant sampling locations are shown on the Site Maps in Appendix B and include the locations identified in Tables 7.5 through 7.9.

One (1) sampling location(s) on the project site and the contractor’s yard have been identified for the collection of samples of runoff from planned material and waste storage areas and areas where non-visible pollutant producing construction activities are planned.

Table 7.5 Non-Visible Pollutant Sample Locations - Contractors' Yard

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
See Erosion Control Plan in Appendix B	See Erosion Control Plan in Appendix B	Lat: Long:

One (1) sampling locations have been identified for the collection of samples of run-on to the project site. Run-on from these locations has the potential to combine with discharges from the site being sampled for non-visible pollutants. These samples are intended to identify potential sources of non-visible pollutants that originate off the project site.

Table 7.9 Non-Visible Pollutant Sample Locations - Site Run-On

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
See Erosion Control Plan in Appendix B	See Erosion Control Plan in Appendix B	Lat: Long:

If a stormwater visual monitoring site inspection conducted prior to or during a storm event identifies the presence of a material storage, waste storage, or operations area with spills or the potential for the discharge of non-visible pollutants to surface waters or a storm drain system that is at a location not listed above and has not been identified on the Site Maps, sampling locations will be selected by the QSP using the same rationale as that used to identify planned locations. Non-visible pollutant sampling locations shall be identified by the QSP on the pre-rain event inspection form and/or Rain Event Action Plan prior to a forecasted qualifying rain event.

7.7.1.3 Monitoring Preparation

Non-visible pollutant samples will be collected by:

Contractor Yes No

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

Name/Telephone Number: TBD
Alternate(s)/Telephone Number: TBD

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site 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 project site will include, but are not limited to, clean powder-free nitrile gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, and *Effluent Sampling Field Log Sheets* and Chain of Custody (CoC) forms, which are provided in CSMP Attachment 3 “Example Forms”.

7.7.1.4 Analytical Constituents

Table 7.10 lists the specific sources and types of potential non-visible pollutants on the project site and the water quality indicator constituent(s) for that pollutant.

Table 7.10 Potential Non-Visible Pollutants and Water Quality Indicator Constituents

General Work Activity / Potential Pollutant	Water Quality Indicator Constituent
Cleaning	
Adhesives	COD, Pherols, SVOCs
Asphalt Work	VOCs
Acids	pH
Bleaches	Residual chlorine
TSP	Phosphate
Solvents	VOCs, SVOCs
Detergents	MBAS
Concrete / Masonry Work	
Sealant (Methyl methacrylate)	SVOC
Curing compounds	VOCs, SVOCs, pH
Ash, slag, sand	pH, Al, Ca, Va, Zn
Framing/Carpentry	
Drywall	Cu, Al, Ca, Va, Zn
Treated Wood	Cu, Cr, As, Zn
Particle board	Formaldehyde
Untreated wood	BOD
Grading / Earthworks	
Gypsum / Lime amendments	pH
Contaminated Soil	Constituents specific to known contaminants, check with Laboratory
Heating, Ventilation, Air Conditioning	Freon

Insulation	Al, Zn
Landscaping	
Pesticides / Herbicides	Product dependent, see label and check with Laboratory
Fertilizers	TKN, NO ₃ , BOD, COD, DOC, Sulfate, NH ₃ , Phosphate, Potassium
Aluminum Sulfate	Al, TDS, Sulfate
Liquid Waste	Constituents specific to materials, check with Laboratory
Painting	
Resins	COD, SVOCs
Thinners	COD, VOCs
Paint Strippers	VOCs, SVOCs, metals
Lacquers, varnishes, enamels	COD, VOCs, SVOCs
Sealants	COD
Adhesives	Phenols, SVOCs
Planting/Vegetation	
Vegetation Stockpiles	BOD
Fertilizers	TKN, NO ₃ , BOD, COD, DOC, sulfate, NH ₃ , Phosphate, Potassium
Pesticides / Herbicides	Product dependent, see label and check with Laboratory
Plumbing	
Solder, flux, pipe fitting	Cu, Pb, VOCs
Pools and Fountains	Residual chlorine, Cu, chloramines
Removal of existing structures	Zn, VOCs, PCBs (see also other applicable activity categories, e.g., grading painting)
Roofing	Cu, Pb, VOCs
Sanitary Waster	BOD, Total/Fecal Coliform
Soil Preparation/	

Amendments/ Dust Control	
Polymer/ Co-polymers	TKN, NO ₃ , BOD, COD, DOC, Sulfate, Ni
Lignin sulfate	TDS, alkalinity
Psylum	COD, TOC
Guar/Plant Gums	COD, TOC, Ni
Solid Waste (leakage)	BOD
Utility Line Testing and Flushing	Residual chlorine, chloramines
Vehicle and Equipment Use	
Batteries	Sulfuric acid; Pb, pH

7.7.1.5 Sample Collection

Samples of discharge shall be collected at the designated non-visible pollutant sampling locations shown on the Site Maps in Appendix B or in the locations determined by observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Grab samples shall be collected and preserved in accordance with the methods identified in the Table, “Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants” provided in Section 7.7.1.6. Only the QSP, or personnel trained in water quality sampling under the direction of the QSP shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.1.6 Sample Analysis

Samples shall be analyzed using the analytical methods identified in the Table 7.11.

Samples will be analyzed by:

- Laboratory Name: TBD
- Street Address:
- City, State Zip:
- Telephone Number:
- Point of Contact:
- ELAP Certification Number:

Samples will be delivered to the laboratory by:

- Driven by Contractor Yes No
- Picked up by Laboratory Courier Yes No

Shipped Yes No

Table 7.11 Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants

Constituent	Analytical Method	Minimum Sample Volume	Sample Containers	Sample Preservation	Reporting Limit	Maximum Holding Time
Notes:						

7.7.1.7 Data Evaluation and Reporting

The QSP shall complete an evaluation of the water quality sample analytical results.

Runoff/downgradient results shall be compared with the associated upgradient/unaffected results and any associated run-on results. Should the runoff/downgradient sample show an increased level of the tested analyte relative to the unaffected background sample, which cannot be explained by run-on results, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visible pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

The General Permit prohibits the storm water discharges that contain hazardous substances equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4. The results of any non-stormwater discharge results that indicate the presence of a hazardous substance in excess of established reportable quantities shall be immediately reported to the Regional Water Board and other agencies as required by 40 C.F.R. §§ 117.3 and 302.4.

Results of non-visible pollutant monitoring shall be reported in the Annual Report.

7.7.2 Sampling and Analysis Plan for pH and Turbidity in Stormwater Runoff Discharges

Sampling and analysis of runoff for pH and turbidity is required for this project. This Sampling and Analysis Plan describes the strategy for monitoring turbidity and pH levels of stormwater runoff discharges from the project site and run-on that may contribute to an exceedance of a Numeric Action Level (NAL) or the exceedance of a Receiving Water Monitoring Trigger. Samples for turbidity will be collected from all drainage areas with disturbed soil areas and samples for pH will be collected from all drainage areas with a high risk of pH altering discharge.

7.7.2.1 Sampling Schedule

Stormwater runoff samples shall be collected for turbidity from each day of a qualifying rain event that results in a discharge from the project site. At minimum, turbidity samples will be collected from each site discharge location draining a disturbed area. A minimum of three samples will be collected per day of discharge during a qualifying event. Samples should be representative of the total discharge from the project each day of discharge during the qualifying event. Typically representative samples will be spaced in time throughout the daily discharge event.

Stormwater runoff samples shall be collected for pH from each day of qualifying rain events that result in a discharge from the project site. Note that pH samples are only required to be collected during project phases and from drainage areas with a high risk of pH altering discharge. A minimum of three samples will be collected per day of discharge during a qualifying event. Samples should be representative of the total discharge from the location each day of discharge during the qualifying event. Typically representative samples will be spaced in time throughout the daily discharge event.

Stored or collected water from a qualifying storm event when discharged shall be tested for turbidity and pH (when applicable). Stored or collected water from a qualifying event may be sampled at the point it is released from the storage or containment area or at the site discharge location.

Run-on samples shall be collected whenever the QSP identifies that run-on has the potential to contribute to an exceedance of a NAL or the exceedance of a Receiving Water Monitoring Trigger.

7.7.2.2 Sampling Locations

The project does not receive run-on with the potential to exceed NALs or Receiving Water Monitoring Triggers.

7.7.2.3 Monitoring Preparation

Turbidity and pH samples will be collected and analyzed by:

Contractor Yes No

Consultant Yes No

Laboratory Yes No

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

Name/Telephone Number:

Alternate(s)/Telephone Number:

An adequate stock of monitoring supplies and equipment for monitoring turbidity and will be available on the project site 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 project site will include, but are not limited to, field meters, extra batteries; clean powder-free nitrile gloves, sample collection equipment, appropriate sample containers, paper towels, personal rain gear, and *Effluent Sampling Field Log Sheets* and CoC forms provided in CSMP Attachment 3 “Example Forms”.

The contractor will obtain and maintain the field testing instruments, as identified in Section 7.7.2.6, for analyzing samples in the field by contractor sampling personnel.

7.7.2.4 Field Parameters

Samples shall be analyzed for the constituents indicated in the Table 7.14.

Samples shall be analyzed for the constituents indicated in the Table 7.14.

Table 7.14 Sample Collection and Analysis for Monitoring Turbidity and pH

Parameter	Test Method	Minimum Sample Volume⁽¹⁾	Sample Collection Container Type	Detection Limit (minimum)
Turbidity	Field meter/probe with calibrated portable instrument	500 mL	Polypropylene or Glass (Do not collect in meter sample cells)	1 NTU
pH	Field meter/probe with calibrated portable instrument or calibrated pH test kit	100 mL	Polypropylene	0.2 pH units
Notes: ¹ Minimum sample volume recommended. Specific volume requirements will vary by instrument; check instrument manufacturer instructions. L – Liter mL – Milliliter NTU – Nephelometric Turbidity Unit				

7.7.2.5 Sample Location

Samples of discharge shall be collected at the designated runoff and run-on sampling locations shown on the Site Maps in Appendix B. Run-on samples shall be collected within close proximity of the point of run-on to the project.

Only personnel trained in water quality sampling and field measurements working under the direction of the QSP shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.2.6 Field Measurements

Samples collected for field analysis, collection, analysis and equipment calibration shall be in accordance with the field instrument manufacturer’s specifications.

Immediately following collection, samples for field analysis shall be tested in accordance with the field instrument manufacturer’s instructions and results recorded on the *Effluent Sampling Field Log Sheet*.

The field instrument(s) listed in Table 7.15 will be used to analyze the following constituents:

Table 7.15 Field Instruments

Field Instrument (Manufacturer and Model)	Constituent
	pH
	Turbidity

The manufacturers’ instructions are included in CSMP Attachment 4 “Field Meter Instructions”. Field sampling staff shall review the instructions prior to each sampling event and follow the instructions in completing measurement of the samples.

- The instrument(s) shall be maintained in accordance with manufacturer’s instructions.
- The instrument(s) shall be calibrated before each sampling and analysis event.
- Maintenance and calibration records shall be maintained with the SWPPP.

The QSP may authorize alternate equipment provided that the equipment meets the Construction General Permit’s requirements and the manufacturers’ instructions for calibration and use are added to CSMP Attachment 4 “Field Meter Instructions”.

7.7.2.7 Sampling Schedule

Numeric Action Levels

This project is subject to NALs for pH and turbidity (Table 7.16). Compliance with the NAL for pH and turbidity is based on a [weighted] daily average. Upon receiving the field log sheets, the QSP shall immediately calculate the [weighted] arithmetic average of the turbidity samples, and the [weighted] logarithmic average of the pH samples¹ to determine if the NALs, shown in the table below, have been exceeded.

Parameter	Unit	Daily Average
pH	pH Units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	NTU	250 NTU

The QSP shall within 10 days of the sample collection submit copies of the completed *Effluent Sampling Field Log Sheets* to the Owners Representative.

In the event that the pH or turbidity NAL is exceeded, the QSP shall immediately notify the Owners Representative and investigate the cause of the exceedance and identify corrective actions.

Exceedances of NALs shall be electronically reported to the State Water Board by the Owners Representative through the SMARTs system within 10 days of the conclusion of the storm event. If requested by the Regional Board, a NAL Exceedance report will be submitted. The NAL Exceedance Report must contain the following information:

- Analytical method(s), method reporting unit(s), and MDL(s) of each parameter;
- Date, place, time of sampling, visual observation, and/or measurements, including precipitation; and
- Description of the current BMPs associated with the sample that exceeded the NAL and the proposed corrective actions taken.

7.7.3 Sampling and Analysis Plan for pH, Turbidity, and SSC in Receiving Water

Risk Level 2 projects is not subject to Receiving Water Monitoring.

7.7.4 Sampling and Analysis for Non-Stormwater Discharges

This Sampling and Analysis Plan for non-stormwater discharges describes the sampling and analysis strategy and schedule for monitoring pollutants in authorized and unauthorized non-stormwater discharges from the project site in accordance with the requirements of the Construction General Permit.

Sampling of non-stormwater discharges will be conducted when an authorized or unauthorized non-stormwater discharge is observed discharging from the project site. In the event that non-stormwater discharges run-on to the project site from offsite locations, and this run-on has the potential to contribute to a violation of a NAL, the run-on will also be sampled. The following authorized non-stormwater discharges identified in Section 2.7, have the potential to be discharged from the project site.

- [LIST or State NONE]
- [LIST or State NONE]

7.7.4.1 Sampling Schedule

Samples of authorized or unauthorized non-stormwater discharges shall be collected when they are observed.

7.7.4.2 Sampling Locations

Samples shall be collected from the discharge point of the construction site where the non-stormwater discharge is running off the project site. Site discharge locations are shown on the Site Maps in SWPPP Appendix A and include the locations identified below.

[0] sampling location(s) on the project site and the contractor's yard have been identified where non-stormwater discharges may runoff from the project site. (Table 7.20)

Table 7.20 Non-stormwater Discharge Sample Locations

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
See Erosion Control Plan in Appendix B	See Erosion Control Plan in Appendix B	Lat: Long:

[0] sampling locations have been identified for the collection of non-stormwater discharges that run-on to the project site (Table 7.21).

Table 7.21 Non-stormwater Run-on Sample Locations

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
See Erosion Control Plan in Appendix B	See Erosion Control Plan in Appendix B	Lat: Long:

7.7.4.3 Monitoring Preparation

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

Name/Telephone Number:

Alternate(s)/Telephone Number:

An adequate stock of monitoring supplies and equipment for monitoring turbidity and will be available on the project site 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 project site will include, but are not limited to, field meters, extra batteries; clean powder-free nitrile gloves, sample collection equipment, appropriate sample containers, paper towels, personal rain gear, and *Effluent Sampling Field Log Sheets* and CoC forms provided in CSMP Attachment 3 “Example Forms”.

The contractor will obtain and maintain the field testing instruments, as identified in Section 7.7.2, for analyzing samples in the field by contractor sampling personnel.

7.7.4.4 Analytical Constituents

All non-stormwater discharges that flow through a disturbed area shall, at minimum, be monitored for turbidity.

All non-stormwater discharges that flow through an area where they are exposed to pH altering materials shall be monitored for pH.

The QSP shall identify additional pollutants to be monitored for each non-stormwater discharge incident based on the source of the non-stormwater discharge. If the source of an unauthorized non-stormwater discharge is not known, monitoring for pH, turbidity, MBAS, TOC, and residual chlorine or chloramines is recommended to help identify the source of the discharge.

Non-stormwater discharge run-on shall be monitored, at minimum, for pH and turbidity. The QSP shall identify additional pollutants to be monitored for each non-stormwater discharge incident based on the source of the non-stormwater discharge. If the source of an unauthorized non-stormwater discharge is not known, monitoring for pH, turbidity, MBAS, TOC, and residual chlorine or chloramines is recommended to help identify the source of the discharge.

Table 7.22 lists the specific sources and types of potential non-visible pollutants on the project site and the water quality indicator constituent(s) for that pollutant.

Table 7.22 Potential Non-Stormwater Discharge Pollutants and Water Quality Indicator Constituents

Pollutant Source	Pollutant	Water Quality Indicator Constituent
Disturbed Areas	Sediment	Turbidity
Concrete Work	pH	pH

7.7.4.5 Sample Collection

Samples shall be collected at the discharge locations where the non-stormwater discharge is leaving the project site. Potential discharge locations are shown on the Site Maps in Appendix B and identified in Section 7.7.4.2.

Grab samples shall be collected and preserved in accordance with the methods identified in Table 7.23. Only personnel trained in water quality sampling under the direction of the QSP shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.4.6 Sample Analysis

Samples shall be analyzed using the analytical methods identified in Table 7.23.

7.7.4.7 Data Evaluation and Reporting

The QSP shall complete an evaluation of the water quality sample analytical results.

Turbidity and pH results shall be evaluated for compliance with NALs [and NELs] as identified in Section 7.7.2.7.

Runoff results shall also be evaluated for the constituents suspected in the non-stormwater discharge. Should the runoff sample indicate the discharge of a pollutant which cannot be explained by run-on results, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visible pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

Non-storm water discharge results shall be submitted with the Annual Report.

The General Permit prohibits the non-storm water discharges that contain hazardous substances equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4. The results of any non-stormwater discharge results that indicate the presence of a hazardous substance in excess of established reportable quantities shall be immediately reported to the Regional Water Board.

7.7.5 Sampling and Analysis for Other Pollutants Required by the Regional Water Board

Risk Level 2 projects is not subject to Regional Water Board monitoring for additional pollutants.

7.7.6 Training of Sampling Personnel

Sampling personnel shall be trained to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring program (SWAMP) 2008 Quality Assurance Program Plan (QAPrP). Training records of designated contractor sampling personnel are provided in Appendix J.

The stormwater sampler(s) and alternate(s) have received the following stormwater sampling training:

Name	Training
------	----------

The stormwater sampler(s) and alternates have the following stormwater sampling experience:

Name	Experience
------	------------

7.7.7 Sample Collection and Handling

7.7.7.1 Sample Collection

Samples shall be collected at the designated sampling locations shown on the Site Maps and listed in the preceding sections. Samples shall be collected, maintained and shipped in accordance with the SWAMP 2008 Quality Assurance Program Plan (QAPrP).

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

To maintain sample integrity and prevent cross-contamination, sample collection personnel shall 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.

- i. For small streams and flow paths, simply dip the bottle facing upstream until full.
- ii. 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.
- iii. For larger streams that cannot be safely waded, pole-samplers may be needed to safely access the representative flow.
- iv. Avoid collecting samples from ponded, sluggish or stagnant water.
- v. Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.

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.

7.7.7.2 Sample Handling

Turbidity and pH measurements must be conducted immediately. Do not store turbidity or 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;
- Document sample information on the *Effluent 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).

Laboratory Name: TBD

Address:

City, State Zip:

Telephone Number:

Point of Contact:

7.7.7.3 Sample Documentation Procedures

All original data documented on sample bottle identification labels, *Effluent Sampling Field Log Sheet*, and CoCs shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated.

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

Sample documentation procedures include the following:

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

Field Log Sheets: Sampling personnel shall 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 shall 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.

7.8 Active Treatment System Monitoring

An Active Treatment System (ATS) will be deployed on the site?

Yes No

This project does not require a project specific Sampling and Analysis Plan for an ATS because deployment of an ATS is not planned.

7.9 Bioassessment Monitoring

This project is not subject to bioassessment monitoring because it is not a Risk Level 3 project.

7.10 Watershed Monitoring Option

This project is not participating in a watershed monitoring option.

7.11 Quality Assurance and Quality Control

An effective Quality Assurance and Quality Control (QA/QC) plan shall be implemented as part of the CSMP 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.

7.11.1 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 and an Effluent Sampling Field Log Sheet are included in CSMP Attachment 3 “Example Forms”.

7.11.2 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 7.7.7, adoption of a clean sampling approach will minimize the chance of field contamination and questionable data results.

7.11.3 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 CSMP Attachment 3 “Example Forms”.

7.11.4 QA/QC Samples 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 1 duplicate minimum per sampling event
(Required for all sampling plans with field measurements or laboratory analysis)
- Equipment Blanks at a frequency of (see section 7.11.4.2)
(Only needed if equipment used to collect samples could add the pollutants to sample)
- Field Blanks at a frequency of once every sampling event
(Only required if sampling method calls for field blanks)
- Travel Blanks at a frequency of [Insert frequency required by method]
(Required for sampling plans that include VOC laboratory analysis)

7.11.4.1 Field Duplicates

Field duplicates provide verification of laboratory or field analysis and sample collection. Duplicate samples shall be collected, handled, and analyzed using the same protocols as primary samples. The sample location where field duplicates are collected shall be randomly selected from the discharge locations. Duplicate samples shall 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 shall not influence any evaluations or conclusion.

7.11.4.2 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.

7.11.4.3 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.

7.11.4.4 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.

7.11.5 Data Verification

After results are received from the analytical laboratory, the QSP shall 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 shall 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. The QSP should 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. The QSP shall 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.

7.12 Records Retention

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

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

Records are to be kept onsite while construction is ongoing. 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;
- Rain gauge readings from site inspections;
- QA/QC records and results;
- Calibration records;
- Visual observation and sample collection exemption records;
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections;

Section 8 References

State Water Resources Control Board (2009). Order 2009-0009-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

State Water Resources Control Board (2010). Order 2010-0014-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

State Water Resources Control Board (2012). Order 2012-0006-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.