APPENDIX C

STORM WATER POLLUTION PREVENTION PLAN

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Stormwater Pollution Prevention Plan

For
South Central Force Main Replacement Schedule 1

Prepared For
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452
425-649-7000

Owner	Developer	Contractor
Kitsap County	Kitsap County	To Be Determined
614 Division Street	614 Division Street	
Port Orchard, WA 98366-4686	Port Orchard, WA 98366-4686	

Project Site Location
Kitsap County

Certified Erosion and Sediment Control Lead
To Be Determined
(Contractor's Personnel

SWPPP Prepared By
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SWPPP Preparation Date
5/4/2009

Approximate Project Construction Dates
July 2009 to January 2010

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1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared as part of the NPDES stormwater permit requirements for the South Central Force Main Replacement Schedule 1 construction project in Kitsap, Washington. The project site is located on Central Valley Road from approximately 150 feet feet south of Alexis Drive NE to Fairgrounds Road, and on Fairgrounds Road from Central Valley Road to approximately 175 feet west of Tanbark Drive NE. The project is the construction of a 14-inch HDPE force main and a 15-inch PVC gravity sewer in the existing roadway, the modification of an existing pump station, and the demolition of an existing pump station.

Construction activities will include demolition, excavation, grading, construction of a 14-inch HDPE force main and a 15-inch PVC gravity sewer main, and the construction of a surge tank in an existing pump station. The purpose of this SWPPP is to describe the proposed construction activities and all temporary and permanent erosion and sediment control (TESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project. The objectives of the SWPPP are to:

- Implement Best Management Practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
- Prevent violations of surface water quality, ground water quality, or sediment management standards.
- Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls.

This SWPPP was prepared using the Ecology SWPPP Template downloaded from the Ecology website on March 17, 2009. This SWPPP was prepared based on the requirements set forth in the Construction Stormwater General Permit, Stormwater Management Manual for Western Washington (SWMMWW 2005). The report is divided into seven main sections with several appendices that include stormwater related reference materials. The topics presented in the each of the main sections are:

- Section 1 – INTRODUCTION. This section provides a summary description of the project, and the organization of the SWPPP document.
- Section 2 – SITE DESCRIPTION. This section provides a detailed description of the existing site conditions, proposed construction activities, and calculated stormwater flow rates for existing conditions and post–construction conditions.
- Section 3 – CONSTRUCTION BMPs. This section provides a detailed description of the BMPs to be implemented based on the 12 required elements of the SWPPP (SWMMWW 2005).

- Section 4 – CONSTRUCTION PHASING AND BMP IMPLEMENTATION. This section provides a description of the timing of the BMP implementation in relation to the project schedule.
- Section 5 – POLLUTION PREVENTION TEAM. This section identifies the appropriate contact names (emergency and non-emergency), monitoring personnel, and the onsite temporary erosion and sedimentation control inspector
- Section 6 – INSPECTION AND MONITORING. This section provides a description of the inspection and monitoring requirements such as the parameters of concern to be monitored, sample locations, sample frequencies, and sampling methods for all stormwater discharge locations from the site.
- Section 7 – RECORDKEEPING. This section describes the requirements for documentation of the BMP implementation, site inspections, monitoring results, and changes to the implementation of certain BMPs due to site factors experienced during construction.

Supporting documentation and standard forms are provided in the following Appendices:

- Appendix A – Site plans
- Appendix B – Construction BMPs
- Appendix C – Alternative Construction BMP list
- Appendix D – General Permit
- Appendix E – Site Log and Inspection Forms

2.0 Site Description

2.1 Existing Conditions

The project site is located on Central Valley Road between Mosher Creek and Fairgrounds Road, and on Fairgrounds Road between Central Valley Road and Tanbark Drive NE. A site vicinity map is provided in Appendix A. The project will disturb approximately 2.1 acres including trenching in the existing roads. The majority of the site is in the roadway, and also modifications of a pump station south of Alexis Drive NE and east of Central Valley Road, installation of an air release/vacuum station at the intersection of Central Valley Road and Fairgrounds Road, and abandonment of a pump station near the intersection of Holland Road and Central Valley Road. Central Valley Road slopes to the south. Fairgrounds Road slopes to the east. Surficial soils generally consist of fill or alluvium overlying native recessional outwash and recessional lacustrine deposits. Groundwater lies approximately 7-15 feet below the surface.

Runoff from Central Valley road generally drains from north to south via roadside ditches and catch basins. This flow discharges to Mosher Creek. Runoff from Fairgrounds Road drains from west to east via roadside ditches, culverts, and catch basins. This flow discharges to a tributary of Mosher Creek. There are several wetlands which connect to Mosher Creek adjacent to Central Valley Road and Fairgrounds Road. There are no other sensitive areas.

2.2 Proposed Construction Activities

The project includes the construction of a 14-inch HDPE force main in Central Valley Road and Fairgrounds Road along with the construction of a 15-inch PVC gravity sewer in Central Valley Road between Lift Station 34 to Holland Road. A surge tank will be added at Lift Station 34 and Lift Station 5 near the intersection of Holland Road and Central Valley Road will be abandoned and the disturbed area restored with topsoil and grass. The improvements along Central Valley Road and Fairgrounds Road will require paving of the two roads with hot mix asphalt.

Construction activities will include site preparation, TESC installation, excavation for the new sewer lines, demolition of Pump Station 5, minor building modifications at Pump Station 34, grading, and asphalt paving. The schedule and phasing of BMPs during construction is provided in Section 4.0.

Stormwater runoff volumes were not calculated. A permanent sediment trap or pond is not required as the project will slightly reduce the amount of impervious surfaces. A temporary holding tank will be needed to address trench dewatering if sumps and pumps are used. The holding tank would also be needed during the well establishment period if wellpoints or deep wells are used to lower the groundwater table. Turbidity will be monitored upstream and downstream of all dewatering discharge points. The project does not require permanent flow control or water quality facilities.

The following summarizes details regarding site areas:

- Total site area: 2.1 acres
- Percent impervious area before construction: 95 %

- Percent impervious area after construction: 95 %
- Disturbed area during construction: 2.1 acres
- Disturbed area that is characterized as impervious (i.e., access roads, staging, parking): 2.0 acres

3.0 Construction Stormwater BMPs

3.1 The 12 BMP Elements

3.1.1 Element #1 – Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction will be clearly marked before land-disturbing activities begin. Trees that are to be preserved, as well as all sensitive areas and their buffers, shall be clearly delineated, both in the field and on the plans. In general, natural vegetation and native topsoil shall be retained in an undisturbed state to the maximum extent possible. The BMPs relevant to marking the clearing limits that will be applied for this project include:

- Buffer Zones (BMP C102)
- High Visibility Plastic or Metal Fence (BMP C103)INSTRUCTIONS

The majority of the project is located in existing paved roadways. Required clearing will be minimal. In most areas, silt fencing will be placed around the construction areas and will mark the clearing limits. Buffer zones will be located upstream of wetlands and streams.

Alternate BMPs for marking clearing limits are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

3.1.2 Element #2 – Establish Construction Access

Construction access or activities occurring on unpaved areas shall be minimized, yet where necessary, access points shall be stabilized to minimize the tracking of sediment onto public roads, and wheel washing, street sweeping, and street cleaning shall be employed to prevent sediment from entering state waters. All wash wastewater shall be controlled on site. The specific BMPs related to establishing construction access that will be used on this project include:

- Stabilized Construction Entrance (BMP C105)

The majority of construction will take place in paved roadways and will not require a stabilized construction entrance to access. Stabilized construction entrances will be provided at staging areas, Lift Station 34, and Lift Station 5.

Alternate construction access BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit

(Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

3.1.3 Element #3 – Control Flow Rates

The project will slightly decrease the area of impervious surfaces, resulting in a slight decrease in runoff and will therefore not require flow control.

3.1.4 Element #4 – Install Sediment Controls

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. The specific BMPs to be used for controlling sediment on this project include:

- Straw Bale Barrier (Triangular Silt Dikes) (BMP C230)
- Silt Fence (BMP C233)
- Storm Drain Inlet Protection (BMP C220)

Straw bale barriers or triangular silt dikes will be placed in the drainage ditches adjacent to Central Valley Road and Fairgrounds Road and immediately upstream of culverts. Silt fencing will be placed downstream of any construction work and along the roadways. Storm drain inlet protection will be used to protect all inlets downstream of any work being done.

Alternate sediment control BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

In addition, sediment will be removed from paved areas in and adjacent to construction work areas manually or using mechanical sweepers, as needed, to minimize tracking of sediments on vehicle tires away from the site and to minimize washoff of sediments from adjacent streets in runoff.

Whenever possible, sediment laden water shall be discharged into onsite, relatively level, vegetated areas (BMP C240 paragraph 5, page 4-102).

The following BMPs will be implemented as end-of-pipe sediment controls as required to meet permitted turbidity limits in the site discharge(s). Prior to the implementation of these technologies, sediment sources and erosion control and soil stabilization BMP efforts will be maximized to reduce the need for end-of-pipe sedimentation controls.

- Temporary Sediment Pond (BMP C241)

- Construction Stormwater Filtration (BMP C251)
- Construction Stormwater Chemical Treatment (BMP C 250) (implemented only with prior written approval from Ecology).

3.1.5 Element #5 – Stabilize Soils

Exposed and un-worked soils shall be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The specific BMPs for soil stabilization that shall be used on this project include:

- Temporary and Permanent Seeding (BMP C120)
- Mulching (BMP C121)
- Topsoiling (BMP C125)

All exposed soils shall be stabilized with the appropriate BMP above. Topsoiling shall be used in conjunction with temporary and permanent seeding as necessary for vegetation to properly establish itself. Mulching shall be used with seeding to provide erosion protection while the vegetation establishes itself, to protect seeds from heat, and to retain moisture.

Alternate soil stabilization BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

The project site is located west of the Cascade Mountain Crest. As such, no soils shall remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30) and 2 days during the wet season (October 1 to April 30). Regardless of the time of year, all soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes will be stabilized as soon as possible and soil stockpiles will be temporarily covered with plastic sheeting. All stockpiled soils shall be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

3.1.6 Element #6 – Protect Slopes

All cut and fill slopes will be designed, constructed, and protected in a manner than minimizes erosion. The following specific BMPs will be used to protect slopes for this project:

- Temporary and Permanent Seeding (BMP C120)
- Grass-Lined Channels (BMP C201)

Slopes shall be seeded as necessary to provide erosion protection.

Alternate slope protection BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

3.1.7 Element #7 – Protect Drain Inlets

All storm drain inlets and culverts made operable during construction shall be protected to prevent unfiltered or untreated water from entering the drainage conveyance system. However, the first priority is to keep all access roads clean of sediment and keep street wash water separate from entering storm drains until treatment can be provided. Storm Drain Inlet Protection (BMP C220) will be implemented for all drainage inlets and culverts that could potentially be impacted by sediment-laden runoff on and near the project site. The following inlet protection measures will be applied on this project:

Drop Inlet Protection

- Excavated Drop Inlet Protection
- Block and Gravel Drop Inlet Protection
- Gravel and Wire Drop Inlet Protection
- Catch Basin Filters

Culvert Inlet Protection

- Culvert Inlet Sediment Trap
- Straw Bale Barrier (BMP C230)

If the BMP options listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D), or if no BMPs are listed above but deemed necessary during construction, the Certified Erosion and Sediment Control Lead shall implement one or more of the alternative BMP inlet protection options listed in Appendix C.

3.1.8 Element #8 – Stabilize Channels and Outlets

Where site runoff is to be conveyed in channels, or discharged to a stream or some other natural drainage point, efforts will be taken to prevent downstream erosion. The specific BMPs for channel and outlet stabilization that shall be used on this project include:

- Grass-Lined Channels (BMP C201)
- Straw Bale Barrier (BMP C230)INSTRUCTIONS

All channels and ditches shall be grass lined or otherwise vegetated. Straw bales or silt dikes shall be placed to slow and filter runoff.

Alternate channel and outlet stabilization BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

3.1.9 Element #9 – Control Pollutants

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

Chemical storage:

- Any chemicals stored in the construction areas will conform to the appropriate source control BMPs listed in Volume IV of the Ecology stormwater manual. In Western WA, all chemicals shall have cover, containment, and protection provided on site, per BMP C153 for Material Delivery, Storage and Containment in SWMMWW 2005
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.

Excavation and tunneling spoils dewatering waste:

- Dewatering BMPs and BMPs specific to the excavation and tunneling (including handling of contaminated soils) are discussed under Element 10.

Demolition:

- Dust released from demolished sidewalks, buildings, or structures will be controlled using Dust Control measures (BMP C140).
- Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection (BMP C220 as described above for Element 7).
- Process water and slurry resulting from sawcutting and surfacing operations will be prevented from entering the waters of the State by implementing Sawcutting and Surfacing Pollution Prevention measures (BMP C152).

Sanitary wastewater:

- Portable sanitation facilities will be firmly secured, regularly maintained, and emptied when necessary.
- Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer as part of Wheel Wash implementation (BMP C106).

Other:

- Other BMPs will be administered as necessary to address any additional pollutant sources on site.

The project does not require a Spill Prevention, Control, and Countermeasure (SPCC) Plan under the Federal regulations of the Clean Water Act (CWA).

3.1.10 Element #10 – Control Dewatering

All dewatering water from open cut excavation, tunneling, foundation work, trench, or underground vaults shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond. Channels will be stabilized, per Element #8. Clean, non-turbid dewatering water will not be routed through stormwater sediment ponds, and will be discharged to systems tributary to the receiving waters of the State in a manner that does not cause erosion, flooding, or a violation of State water quality standards in the receiving water. Highly turbid dewatering water from soils known or suspected to be contaminated, or from use of construction equipment, will require additional monitoring and treatment as required for the specific pollutants based on the receiving waters into which the discharge is occurring. Such monitoring is the responsibility of the contractor.

However, the dewatering of soils known to be free of contamination will trigger BMPs to trap sediment and reduce turbidity. At a minimum, geotextile fabric socks/bags/cells will be used to filter this material. Other BMPs to be used for sediment trapping and turbidity reduction include the following:

- Temporary Sediment Pond (BMP C241)
- Construction Stormwater Filtration (BMP C 251)

- Use of a sedimentation bag, with outfall to a ditch or swale for small volumes of localized dewatering.

Alternate dewatering control BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

3.1.11 Element #11 – Maintain BMPs

All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each particular BMP's specifications. Visual monitoring of the BMPs will be conducted at least once every calendar week and within 24 hours of any rainfall event that causes a discharge from the site. If the site becomes inactive, and is temporarily stabilized, the inspection frequency will be reduced to once every month.

All temporary erosion and sediment control BMPs shall be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

3.1.12 Element #12 – Manage the Project

Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.
- Keep runoff velocities low.
- Retain sediment on site.
- Thoroughly monitor site and maintain all ESC measures.
- Schedule major earthwork during the dry season.

In addition, project management will incorporate the key components listed below:

As this project site is located west of the Cascade Mountain Crest, the project will be managed according to the following key project components:

Phasing of Construction

- The construction project is being phased to the extent practicable in order to prevent soil erosion, and, to the maximum extent possible, the transport of sediment from the site during construction.
- Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities during each phase of construction, per the Scheduling BMP (C 162).

Seasonal Work Limitations

- From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the site through a combination of the following:
  - Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters; and
  - Limitations on activities and the extent of disturbed areas; and
  - Proposed erosion and sediment control measures.
- Based on the information provided and/or local weather conditions, the local permitting authority may expand or restrict the seasonal limitation on site disturbance.
- The following activities are exempt from the seasonal clearing and grading limitations:
  - Routine maintenance and necessary repair of erosion and sediment control BMPs;
  - Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and
  - Activities where there is 100 percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Coordination with Utilities and Other Jurisdictions

- Care has been taken to coordinate with utilities, other construction projects, and the local jurisdiction in preparing this SWPPP and scheduling the construction work.

Inspection and Monitoring

- All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to:

- Assess the site conditions and construction activities that could impact the quality of stormwater, and
- Assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

- A Certified Erosion and Sediment Control Lead shall be on-site or on-call at all times.
- Whenever inspection and/or monitoring reveals that the BMPs identified in this SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible.

Maintaining an Updated Construction SWPPP

- This SWPPP shall be retained on-site or within reasonable access to the site.
- The SWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.
- The SWPPP shall be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.

3.2 Site Specific BMPs

Site specific BMPs are shown on the TESC Plan Sheets and Details in Appendix A. These site specific plan sheets will be updated annually.

4.0 Construction Phasing and BMP Implementation

The BMP implementation schedule will be driven by the construction schedule. The following provides a sequential list of the proposed construction schedule milestones and the corresponding BMP implementation schedule. The list contains key milestones such as wet season construction. Most of the dates are to be determined by the contractor (TBD-Contractor).

The BMP implementation schedule listed below is keyed to proposed phases of the construction project, and reflects differences in BMP installations and inspections that relate to wet season construction. The project site is located west of the Cascade Mountain Crest. As such, the dry season is considered to be from May 1 to September 30 and the wet season is considered to be from October 1 to April 30.

• Estimate of Construction start date:	07 / 06 / 2009
• Estimate of Construction finish date:	01 / 11 / 2010
• Dry Season starts:	05 / 01 / 2009
• Wet Season starts:	10 / 01 / 2009
• Mobilize equipment on site:	TBD-Contractor
• Mobilize and store all ESC and soil stabilization products (store materials on hand BMP C150):	TBD-Contractor
• Install ESC measures:	TBD-Contractor
• Install stabilized construction entrance:	TBD-Contractor
• Excavation for new sewer pipes:	TBD-Contractor
• Begin modification of Pump Station 34:	TBD-Contractor
• Demolish Pump Station 5:	TBD-Contractor
• Re-grade and stabilize Pump Station 5 site:	TBD-Contractor
• Final landscaping and planting begins:	TBD-Contractor

5.0 Pollution Prevention Team

5.1 Roles and Responsibilities

The pollution prevention team consists of personnel responsible for implementation of the SWPPP, including the following:

- Certified Erosion and Sediment Control Lead (CESCL) – primary contractor contact, responsible for site inspections (BMPs, visual monitoring, sampling, etc.); to be called upon in case of failure of any ESC measures.
- Resident Engineer – For projects with engineered structures only (sediment ponds/traps, sand filters, etc.): site representative for the owner that is the project's supervising engineer responsible for inspections and issuing instructions and drawings to the contractor's site supervisor or representative
- Emergency Ecology Contact – individual to be contacted at Ecology in case of emergency.
- Emergency Owner Contact – individual that is the site owner or representative of the site owner to be contacted in the case of an emergency.
- Non-Emergency Ecology Contact – individual to be contacted at Ecology if required for non-emergency situation.
- Monitoring Personnel – personnel responsible for conducting water quality monitoring; for most sites this person is also the Certified Erosion and Sediment Control Lead.

5.2 Team Members

Names and contact information for those identified as members of the pollution prevention team are provided in the following table. The blanks will be filled out once those members are identified.

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	To be determined (Contractor Personnel)	
Resident Engineer	John Gardner	(360) 337 - 7197
Emergency Ecology Contact	http://www.ecy.wa.gov/org.html	
Emergency Owner Contact	Barbara Zaroff	(360) 337 - 5777
Non-Emergency Ecology Contact	http://www.ecy.wa.gov/org.html	
Monitoring Personnel	To be determined (Contractor Personnel)	

6.0 Site Inspections and Monitoring

Monitoring includes visual inspection, monitoring for water quality parameters of concern, and documentation of the inspection and monitoring findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

For convenience, the inspection form and water quality monitoring forms included in this SWPPP include the required information for the site log book. This SWPPP may function as the site log book if desired, or the forms may be separated and included in a separate site log book. However, if separated, the site log book but must be maintained on-site or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

6.1 Site Inspection

All BMPs will be inspected, maintained, and repaired as needed to assure continued performance of their intended function. The inspector will be a Certified Erosion and Sediment Control Lead (CESCL) per BMP C160. The name and contact information for the CESCL is provided in Section 5 of this SWPPP.

Site inspection will occur in all areas disturbed by construction activities and at all stormwater discharge points. Stormwater will be examined for the presence of suspended sediment, turbidity, discoloration, and oily sheen. The site inspector will evaluate and document the effectiveness of the installed BMPs and determine if it is necessary to repair or replace any of the BMPs to improve the quality of stormwater discharges. All maintenance and repairs will be documented in the site log book or forms provided in this document. All new BMPs or design changes will be documented in the SWPPP as soon as possible.

6.1.1 Site Inspection Frequency

Site inspections will be conducted at least once a week and within 24 hours following any discharge from the site. For sites with temporary stabilization measures, the site inspection frequency can be reduced to once every month.

6.1.2 Site Inspection Documentation

The site inspector will record each site inspection using the site log inspection forms provided in Appendix E. The site inspection log forms may be separated from this SWPPP document, but will be maintained on-site or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

6.2 Stormwater Quality Monitoring

6.2.1 Turbidity Sampling

Monitoring requirements for the proposed project will include either turbidity or water transparency sampling to monitor site discharges for water quality compliance with the 2005 Construction Stormwater General Permit (Appendix D). Sampling will be conducted at all discharge points at least once per calendar week.

Turbidity or transparency monitoring will follow the analytical methodologies described in Section S4 of the 2005 Construction Stormwater General Permit (Appendix D). The key benchmark values that require action are 25 NTU for turbidity (equivalent to 32 cm transparency) and 250 NTU for turbidity (equivalent to 6 cm transparency). If the 25 NTU benchmark for turbidity (equivalent to 32 cm transparency) is exceeded, the following steps will be conducted:

- Ensure all BMPs specified in this SWPPP are installed and functioning as intended.
- Assess whether additional BMPs should be implemented, and document revisions to the SWPPP as necessary.
- Sample discharge location daily until the analysis results are less than 25 NTU (turbidity) or greater than 32 cm (transparency).

If the turbidity is greater than 25 NTU (or transparency is less than 32 cm) but less than 250 NTU (transparency greater than 6 cm) for more than 3 days, additional treatment BMPs will be implemented within 24 hours of the third consecutive sample that exceeded the benchmark value. Additional treatment BMPs to be considered will include, but are not limited to, off-site treatment, infiltration, filtration and chemical treatment.

If the 250 NTU benchmark for turbidity (or less than 6 cm transparency) is exceeded at any time, the following steps will be conducted:

- Notify Ecology by phone within 24 hours of analysis (see Section 5.0 of this SWPPP for contact information).
- Continue daily sampling until the turbidity is less than 25 NTU (or transparency is greater than 32 cm).
- Initiate additional treatment BMPs such as off-site treatment, infiltration, filtration and chemical treatment within 24 hours of the first 250 NTU exceedance.
- Implement additional treatment BMPs as soon as possible, but within 7 days of the first 250 NTU exceedance.
- Describe inspection results and remedial actions taken in the site log book and in monthly discharge monitoring reports as described in Section 7.0 of this SWPPP.

6.2.2 pH Sampling

Stormwater runoff will be monitored for pH starting on the first day of any activity that includes more than 40 yards of poured or recycled concrete, or after the application of "Engineered Soils" such as, Portland cement treated base, cement kiln dust, or fly ash. This does not include fertilizers. For concrete work, pH monitoring will start the first day concrete is poured and continue until 3 weeks after the last pour. For engineered soils, the pH monitoring period begins when engineered soils are first exposed to precipitation and continue until the area is fully stabilized.

Stormwater samples will be collected daily from all points of discharge from the site and measured for pH using a calibrated pH meter, pH test kit, or wide range pH indicator paper. If the measured pH is 8.5 or greater, the following steps will be conducted:

- Prevent the high pH water from entering storm drains or surface water.
- Adjust or neutralize the high pH water if necessary using appropriate technology such as CO2 sparging (liquid or dry ice).
- Contact Ecology if chemical treatment other than CO2 sparging is planned.

7.0 Reporting and Recordkeeping

7.1 Recordkeeping

7.1.1 Site Log Book

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

For convenience, the inspection form and water quality monitoring forms included in this SWPPP include the required information for the site log book. The site log book may be maintained separately from the SWPPP or attached in Appendix E.

7.1.2 Records Retention

Records of all monitoring information (site log book, inspection reports/checklists, etc.), this Stormwater Pollution Prevention Plan, and any other documentation of compliance with permit requirements will be retained during the life of the construction project and for a minimum of three years following the termination of permit coverage in accordance with permit condition S5.C.

7.1.3 Access to Plans and Records

The SWPPP, General Permit, Notice of Authorization letter, and Site Log Book will be retained on site or within reasonable access to the site and will be made immediately available upon request to Ecology or the local jurisdiction. A copy of this SWPPP will be provided to Ecology within 14 days of receipt of a written request for the SWPPP from Ecology. Any other information requested by Ecology will be submitted within a reasonable time. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with permit condition S5.G.

7.1.4 Updating the SWPPP

In accordance with Conditions S3, S4.B, and S9.B.3 of the General Permit, this SWPPP will be modified if the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site or there has been a change in design, construction, operation, or maintenance at the site that has a significant effect on the discharge, or potential for discharge, of pollutants to the waters of the State. The SWPPP will be modified within seven days of determination based on inspection(s) that additional or modified BMPs are necessary to correct problems identified, and an updated timeline for BMP implementation will be prepared.

7.2 Reporting

7.2.1 Discharge Monitoring Reports

Discharge Monitoring Report (DMR) forms will not be submitted to Ecology because water quality sampling is not being conducted at the site.

7.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit are not met, and it causes a threat to human health or the environment, the following steps will be taken in accordance with permit section S5.F:

- Ecology will be immediately notified of the failure to comply.
- Immediate action will be taken to control the noncompliance issue and to correct the problem. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
- A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Appendix A – Site Plan

Appendix B – Construction BMPs

Buffer Zones (BMP C102)

High Visibility Plastic or Metal Fence (BMP C103)

Stabilized Construction Entrance (BMP C105)

Temporary and Permanent Seeding (BMP C120)

Mulching (BMP C121)

Topsoiling (BMP C125)

Grass-Lined Channels (BMP C201)

Check Dams (BMP C207)

Storm Drain Inlet Protection (BMP C220)

Straw Bale Barrier (BMP C230)

Silt Fence (BMP C233)

Appendix C – Alternative BMPs

The following includes a list of possible alternative BMPs for each of the 12 elements not described in the main SWPPP text. This list can be referenced in the event a BMP for a specific element is not functioning as designed and an alternative BMP needs to be implemented.

Element #1 - Mark Clearing Limits

Element #2 - Establish Construction Access

Element #3 - Control Flow Rates

Element #4 - Install Sediment Controls

Element #5 - Stabilize Soils

Element #6 - Protect Slopes

Element #8 - Stabilize Channels and Outlets

Element #10 - Control Dewatering

Appendix D – General Permit

Appendix E – Site Inspection Forms (and Site Log)

The results of each inspection shall be summarized in an inspection report or checklist that is entered into or attached to the site log book. It is suggested that the inspection report or checklist be included in this appendix to keep monitoring and inspection information in one document, but this is optional. However, it is mandatory that this SWPPP and the site inspection forms be kept onsite at all times during construction, and that inspections be performed and documented as outlined below.

At a minimum, each inspection report or checklist shall include:

a. Inspection date/times

b. Weather information: general conditions during inspection, approximate amount of precipitation since the last inspection, and approximate amount of precipitation within the last 24 hours.

c. A summary or list of all BMPs that have been implemented, including observations of all erosion/sediment control structures or practices.

d. The following shall be noted:

   i. locations of BMPs inspected,

   ii. locations of BMPs that need maintenance,

   iii. the reason maintenance is needed,

   iv. locations of BMPs that failed to operate as designed or intended, and

   v. locations where additional or different BMPs are needed, and the reason(s) why

e. A description of stormwater discharged from the site. The presence of suspended sediment, turbid water, discoloration, and/or oil sheen shall be noted, as applicable.

f. A description of any water quality monitoring performed during inspection, and the results of that monitoring.

g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.

h. A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and the NPDES permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance, as well as a schedule of implementation.

i. Name, title, and signature of person conducting the site inspection; and the following statement: "I certify under penalty of law that this report is true, accurate, and complete, to the best of my knowledge and belief".

When the site inspection indicates that the site is not in compliance with any terms and conditions of the NPDES permit, the Permittee shall take immediate action(s) to: stop, contain, and clean up the unauthorized discharges, or otherwise stop the noncompliance; correct the problem(s); implement appropriate Best Management Practices (BMPs), and/or conduct maintenance of existing BMPs; and achieve compliance with all applicable standards and permit conditions. In addition, if the noncompliance causes a threat to human health or the environment, the Permittee shall comply with the Noncompliance Notification requirements in Special Condition S5.F of the permit.

Site Inspection Form

General Information

Project Name: _____

Inspector Name: _____ **Title:** _____

CESCL #: _____

Date: _____ **Time:** _____

Inspection Type:
- □ After a rain event
- □ Weekly
- □ Turbidity/transparency benchmark exceedance
- □ Other

Weather: _____

Precipitation: Since last inspection: _____ In last 24 hours: _____

Description of General Site Conditions _____

_____

_____

_____

Inspection of BMPs

Element 1: Mark Clearing Limits

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 2: Establish Construction Access

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 3: Control Flow Rates

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 4: Install Sediment Controls

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

Element 5: Stabilize Soils

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

BMP: ______________________________

Location	Inspected		Function			Problem/Corrective Action
	Y	N	Y	N	NIP	

Element 6: Protect Slopes

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 7: Protect Drain Inlets

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 8: Stabilize Channels and Outlets

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 9: Control Pollutants

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: ______________________________

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Element 10: Control Dewatering

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

BMP: _____

Location	Inspected Y	Inspected N	Function Y	Function N	Function NIP	Problem/Corrective Action

Stormwater Discharges from the Site

Location: _____

	Observed Y	Observed N	Problem/Corrective Action
Turbidity			
Discoloration			
Sheen			

Location: _____

	Observed Y	Observed N	Problem/Corrective Action
Turbidity			
Discoloration			
Sheen			

Water Quality Monitoring

Was any water quality monitoring conducted? □ Yes □ No

If water quality monitoring was conducted, record results here:

_____

_____

_____

_____

_____

If water quality monitoring indicated turbidity 250 NTU or greater; or transparency 6 cm or less, was Ecology notified by phone within 24 hrs? □ Yes □ No

If Ecology was notified, indicate the date, time, contact name, and phone number below:

Date _____

Time _____

Contact Name _____

Phone # _____

General Comments and Notes

(Include BMP repairs, maintenance, or installations made as a result of the inspection)

Were Photos Taken? □ Yes □ No

If photos were taken, describe photos below:

_____

_____

_____

_____

_____