ENLOE DAM HYDROELECTRIC PROJECT

Stormwater Pollution Prevention Plan

Prepared for:
Okanogan County PUD No. 1
1331 Second Avenue North
Okanogan, WA 98840-9609

TABLE OF CONTENTS

LIST OF ATTACHMENTS*

Attachment A: Notice of Intent (NOI), NPDES Permit, and Notice of Termination (NOT) Forms

Attachment B: SWPPP Team

Attachment C: Location Map

Attachment D: Site Storm Drainage Plan

Attachment E: Figures and Drawings

Attachment F: Design Calculations

Attachment G: Inspection Forms

*The attachments will be added to the Final SWPPP prior to commencement of construction activities.

1. INTRODUCTION

1.1 SWPPP Purpose

The purpose of this Stormwater Pollution Prevention Plan (SWPPP) is to provide guidance for the minimization of soil erosion and management of sediment control through the implementation, maintenance, and development of the soil erosion and sediment control plan during construction of the Enloe Dam Hydroelectric Project (Project). This document will help ensure that the proposed erosion and sediment control measures are implemented as specified, monitored and maintained, and modified as necessary during the construction of the Project. Implementation and management of these measures and the maintenance of Best Management Practices (BMPs) provided in this document will help reduce the amount of sediment and other pollutants in stormwater discharges from construction activities associated with the Project. If construction or maintenance conditions change, the SWPPP will be revised accordingly to effectively control erosion, sedimentation, and the off-site stormwater pollutant discharges.

1.2 SWPPP Background

This SWPPP has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities (USEPA 2005). This SWPPP presents the means for controlling off-site discharge of pollutants associated with stormwater runoff as a result of construction activities for the Project.

The State of Washington, under the regulatory authority of the Washington Department of Ecology (Ecology), has authorization from the USEPA to regulate stormwater discharges from construction activities. As owner of the Enloe Dam and as required by the NPDES General Permit, Okanogan County PUD No. 1 (OCPUD) must submit a Notice of Intent (NOI) and a SWPPP to the WDOE prior to beginning construction. See Attachment A Notice of Intent, NPDES Permit, and Notice of Termination Forms. The SWPPP must be reviewed and approved by Ecology prior to the commencement of construction activities.

As required by the Ecology, a Certified Erosion and Sediment Control Lead (CESCL) will ensure that property owner or appointed contractor implements and maintains erosion and sediment control measures during construction. The SWPPP and a copy of the NOI must be kept at the construction site or at the nearest contractor office or trailer and must be maintained by the CESCL and available for the Ecology for review upon request.

To be eligible under the NPDES General Permit for Storm Water Discharges from Construction Activities, applicants must certify that stormwater discharges will not adversely impact threatened and/or endangered (T&E) species habitats or populations. The applicant will review and monitor the ongoing T&E species consultations for the Project until correspondence has been terminated by the appropriate agencies. The NPDES General Permit for Storm Water Discharges from Construction Activities no longer requires review of historic preservation concerns. Rather, the USEPA is conducting consultations on a case-by-case basis.

1.3 SWPPP Content

In general, this SWPPP includes specifications for best management practices (BMPs) that must be implemented to control erosion and sedimentation during construction activities. The

SWPPP is intended to provide guidance to minimize the potential for erosion and to prevent discharge of pollutants (sedimentation, debris, etc.) during construction activities, and to effectively restore disturbed areas as a consequence of the construction activities. The OCPUD must meet these objectives by employing the erosion and sediment control measures set forth in this plan. This plan presents typical structural and non-structural erosion and sediment control measures, and management practices that must be implemented throughout construction. The erosion and sediment control measures described in this plan will serve as a minimum standard during construction and a guidance document for contingency practices as this SWPPP evolves throughout the construction process.

The Project SWPPP is designed to minimize erosion and control sedimentation by:

1) Assembling a SWPPP Team to implement, manage, and maintain this SWPPP;
2) Minimizing the quantity and duration of soil exposure and reducing soil erosion;
3) Providing mechanisms to capture sediments when soil erosion occurs;
4) Protecting critical areas during construction by reducing the runoff velocity and redirecting the runoff away from disturbed areas;
5) Installing and maintaining erosion and sediment control measures before and during construction;
6) Re-establishing vegetation as soon as possible following final grading; and
7) Inspecting, maintaining, and adapting the erosion and sediment controls as necessary until final stabilization and re-vegetation is established.

The content of this SWPPP presents the implementation and maintenance of these measures in the following context:

1) Presentation of the SWPPP purpose, background, and content;
2) Identification of the Project Owner;
3) Determination of the CESCL and SWPPP Team;
4) Description of the site, including existing land use, location of waters, etc.;
5) Identification of the body of water(s) which will receive runoff from the construction site, including the ultimate body of water that receives the stormwater;
6) Description of the construction sequencing and activities;
7) Identification of the drainage areas and potential stormwater contaminants;
8) Description of the stormwater management controls and various BMPs necessary to reduce erosion, sediment, and pollutants in stormwater discharge;
9) Description of the site monitoring plan and how controls will be coordinated with construction activities;
10) Practices that will be implemented for erosion control and sediment control;
11) SWPPP maintenance and contingencies; and
12) Final stabilization/termination of erosion control.

2. GENERAL INFORMATION

2.1 Project Owner and Operator

Okanogan County PUD No. 1
1331 Second Avenue North
P.O. Box 912
Okanogan, WA 98840-9609

2.2 Project Contact Information

Company:	Okanogan County PUD No. 1 (OCPUD)
Name of Contact:	Dan Boettger, Director of Regulatory & Environmental Affairs
Office Telephone:	(509) 422-8425
Office Fax:	(509) 422-4020
email:	dan_b@okpud.org

2.3 CESCL and Duties

The Project Owner will identify the CESCL for the site, which may be assigned to the General Contractor, prior to commencement of construction activities. The appointed CESCL duties include the following:

1) Implementation of the SWPPP with the aid of the SWPPP Team;
2) Oversight of maintenance and contingency practices identified as BMPs in the SWPPP;
3) Implementation and oversight of employee training;
4) Conduct and provide inspection, monitoring, and contingency activities;
5) Identification of other potential pollutant sources and add those to this plan;
6) Identification of deficiencies in the SWPPP and implement corrections; and
7) Incorporate changes to the construction plans in the SWPPP.

To help implement the SWPPP, the Project Owner and the CESCL will name two additional members to the SWPPP Team. One member will ensure that housekeeping and monitoring procedures are implemented, while the other member will ensure that the structural integrity of the BMPs are maintained. The SWPPP Team consent form, included as Attachment B, SWPPP Team, must be completed and signed by the appointed members prior to commencement of construction.

3. SITE DESCRIPTION

3.1 Existing Site Description and Background

The Enloe Dam is located on the Similkameen River, 3 miles northwest of Oroville, WA, at about Similkameen River Mile 9 (Project Site). See Attachment C - Site Location Map. Stormwater runoff from the Project Site discharges directly into the Similkameen River. Potential sources of pollution at the Project Site include sediment from construction disturbances; construction debris and trash; and minor petroleum leaks from construction equipment.

The Enloe Dam is a concrete gravity arch dam that is 315 ft. long with an arch radius of 200 ft. and a maximum hydraulic height of 54 ft. The dam structure is 40 ft. thick at the base of the spillway tapering to a six (6) ft. thick rounded crest. It was constructed near Similkameen River Mile 9, approximately 350 ft. upstream of Similkameen Falls.

The west abutment of the Enloe Dam contains the intake structure for the previously licensed Enloe Hydroelectric Project, which ceased operation in 1958. The original sluice gates, which controlled flow from the impoundment into two above ground penstocks and delivered water to the Enloe powerhouse, are now silted-in. One of the penstocks has been removed while the other remains in place. The dam crest is designed to accommodate the installation of five (5) ft. high flashboards which increase the crest elevation by 5 ft.

3.2 Construction Type

The construction activities proposed for the Enloe Dam site are related to the following installation and modifications:

1) Implementation of the stormwater management systems;
2) Clearing and demolition of construction site;
3) Retrofitting of crest gates;
4) Construction of headworks;
5) Construction of penstock intake;
6) Construction of powerhouse;
7) Construction of tailrace; and
8) Construction of utilities.

3.3 Existing Site Conditions

3.3.1 General Existing Site Drainage and Characteristics

Tributary Areas

The Similkameen River basin drains the eastern side of the Cascades in Washington and British Columbia, Canada (BC) and the Thompson (or Interior) Plateau of BC. The river is fed by three main tributaries, which include the Pasayten River near Manning Park, BC (most of which is in northern Washington), the Tulameen River at Princeton,

BC and the Ashnola River near Keremos, BC. Downstream of the international border at Chopaka, the Similkameen River receives almost all incremental flow within Washington from the Palmer Lake/Sinlahekin Creek watershed. Flows at high stages are regulated by a natural diversion into and release from Palmer Lake.

Vegetative Communities

The deep gorge cut by the river traverses steep, sparsely vegetated rocky hills. Shrub-steppe vegetation communities dominate the lower elevations of the Similkameen River Canyon. The most prevalent species include sagebrush and bitterbrush, with an understory of cheatgrass, bluebunch wheatgrass, and associated herbaceous species. Moist draws and seasonally flooded areas support deciduous trees and shrubs including black cottonwood, willow, water birch, mountain alder, douglas hawthorn, and red-osier dogwood. The steepest slopes and draws above the river are sparsely vegetated with scattered ponderosa pine and deciduous shrubs, such as smooth sumac and serviceberry.

Anadromous Fish, Reservoir Depth, and Sediment Volume

Similkameen Falls, approximately 350 ft. below Enloe Dam, forms a 33 ft. barrier impassible to anadromous fish (HAER Report, see Appendix C.1). Above the dam lies a shallow reservoir (mean depth of 8.4 ft. at the existing dam crest elevation of 1044.3 ft. amsl.; maximum depth 55.6 ft. (MaxDepth 2006) filled with an accumulated sediment volume of approximately 2.43 million cubic yards (MaxDepth 2006). The existing reservoir is approximately two (2) miles long and averages about 250 ft. in width.

Topography

Topography in the Project vicinity has been significantly impacted by glaciation and is considered moderately steep and rugged. In the lower elevations of the river canyon, steep slopes adjacent to the river are interspersed with relatively flat benches of alluvial or glacial origin. The upper portions of the river canyon are steep and rocky. The mountains of the Okanogan Highlands lie to the east and the North Cascades to the west. Elevations range from 1,000 ft. at the mouth of the Similkameen River at Oroville, to over 3,600 ft. at the summit of surrounding mountains.

Climate

The climate in the lower Similkameen River Basin is typical of eastern Washington, with cool, moist winters and hot dry summers. The Cascade Mountains act as a barrier to the movement of maritime and continental air masses, creating the dry conditions observed in the Project vicinity. Average annual precipitation is approximately 11 inches. River flows peak in late spring to early summer when warm temperatures melt the extensive winter snowpack at the higher elevations in the basin. Low flows occur in mid-winter when cold temperatures minimize runoff.

Similkameen River Confluence

The Similkameen River joins the Okanogan River in Oroville in north central Washington, approximately 8 miles south of the Canadian border. Enloe Dam is located on the Similkameen River about 9 miles upstream from the confluence. The majority of both river basins are located in BC. At their confluence, the Okanogan and Similkameen River basins are similar in size (3,150 mi^2 and 3,592 mi^2, respectively), but the mean annual flow of the Similkameen River is, on average, more than 3.3 times the mean annual flow of the Okanogan. The Similkameen is also a more variable river although its

median daily flow is only 1.3 times as high as that of the Okanogan. Peak flows on the Similkameen River are on average more than 8 times as high.

3.3.2 Adjacent Areas

Located in north-central Washington a few miles south of the Canadian border, the Enloe Hydroelectric Project is situated in a narrow constriction of the Similkameen River valley, about 3.5 miles northwest of the City of Oroville (See Attachment E, Figure 1.1). This Project area is defined as the area between the upper end of the Enloe reservoir and the tailrace below the dam. The Similkameen River is tributary to the Okanogan River just south of the City of Oroville; the Okanogan flows into the Columbia River east of the City of Brewster, Washington. The Similkameen River drains the east slopes of the Cascade Mountains in northern Washington and southern BC. The majority (79 percent) of the drainage basin lies within Canada.

3.3.3 Critical Areas

Critical areas that are located within or adjacent to the Project Site include wetlands and 100-year floodplains. Unless authorized by the appropriate regulatory authorities, all direct and indirect impacts to these critical areas must be avoided.

3.3.4 Geology and Soils

Within Enloe reservoir, from Shanker's Bend downstream to approximately 1600 ft. above the dam, the Similkameen River lies at the boundary of the Kobau Formation, characterized by highly deformed Triassic/Permian metamorphic rocks, and Ellemeham Formation, characterized by Jurassic/Cretaceous metaconglomerate and metavolcanic rock. Between 1600 ft. above and 1000 ft. below the dam the river flows over Eocene sandstone and conglomerate. Enloe Dam is located above the Similkameen Falls on resistant granitic-clast conglomerate. Downstream of the dam and falls the river again flows over metamorphic rocks of the Kobau and Spectacle Formations. These geologic features are overlain by Quaternary glacial drift, colluvium, and alluvial deposits (Villalobos 1982).

The soils series present within or adjacent to the FERC boundary are classified as follows:

1) Nighthawk loam;
2) Nighthawk extremely stony loam;
3) Ewall loamy fine sand;
4) Lithic Xerochrepts (Nighthawk complex soils); and
5) Riverwash and rock outcrop areas.

Nighthawk loam soils are located upstream of the dam and upstream of Shanker's Bend. These soils are deep and well-drained. Nighthawk loam soils with 3 to 8 percent slopes (See Attachment E, Figure 6.3, map symbol 131) are characterized by slow runoff and present a slight erosion hazard. Nighthawk loam soils with 8 to 15 percent slopes (132) are characterized by medium runoff and present a moderate erosion hazard.

Nighthawk extremely stony loam soils are located adjacent to the dam, powerhouse, and Shanker's Bend. These soils are deep and well-drained. Nighthawk extremely stony loam soils with 8 to 25 percent slopes (134) are characterized by medium runoff and present a high to very high erosion hazard. When slopes reach 25 to 65 percent (135) these soils are characterized by rapid to very rapid runoff and present a high to very high erosion hazard. Ewall loamy fine sand soils are located in a small area immediately downstream of Shanker's Bend. These soils are deep and excessively drained. Ewall loamy fine sand soils with 0 to 15 percent slopes (53) are characterized by slow runoff, and present a slight erosion hazard and a high soil-blowing hazard.

Lithic Xerochrepts soils are generally shallow and well-drained and are located downstream of the dam. Lithic Xerochrepts-Nighthawk complex soils with 15 to 45 percent slopes (93) are characterized by medium runoff and present a moderate erosion hazard.

Areas classified as riverwash and rock outcrops are also present within or adjacent to the FERC boundary. Riverwash (161) consists of coarse sand and gravelly alluvium. Rock outcrop areas (162) contain little or no shallow soil material.

3.4 Proposed Project Description

The purpose of the proposed Project is to restore hydroelectric power generation at Enloe Dam. To do this, OCPUD proposes to complete the following construction activities:

1) Construction of new five ft. high crest gates on Enloe Dam;
2) Headworks that include an approach channel, river intake, and intake canal;
3) Penstock intake;
4) Two penstocks;
5) Powerhouse; and
6) Tailrace.

See: Attachment D, Site Storm Drainage Plan; Attachment E, Figures and Drawings; and Attachment F, Design Calculations.

3.4.1 Dam and Spillway

The proposed project includes restoration of flashboards by retrofitting 5 ft. crest gates on the crest of the existing spillway. Crest gates, which would be raised as spring flows recede, would increase Project head and power generation. A section of gate near the east abutment would be operated independently to provide a bypass sluice for ice and debris in the vicinity of the proposed headworks.

3.4.2 Headworks

The purpose of the proposed headworks is to divert a portion of streamflow from the Similkameen River to the intake of the proposed hydroelectric power plant. An important function of the headworks is to control trash, ice, and sediment in the inflow to the power plant,

and to protect resident fish in the Enloe Reservoir. The proposed headworks are comprised of the following three components:

1) Approach Channel

A short approach channel will convey water from Enloe Reservoir to the river intake structure located in the east bank of the reservoir. The entrance to the approach channel is located as close as practical to the existing dam to minimize the footprint of the project and to minimize any disturbance to sediment in the reservoir. A shear log boom will be located between the upstream end of the approach channel and the dam to divert logs and floating debris.

2) River Intake Structure

The river intake structure will control flow from the approach channel into the intake channel and will exclude trash, ice floes, and fish from the intake channel to the powerhouse. The river intake will be a concrete trashrack structure 86 ft. long and 20 ft. wide. An automatic trashrack cleaner mounted on a monorail will keep the racks clear of accumulated trash and ice.

3) Intake Canal

The intake canal will carry inflow from the river intake structure to the penstock intake structure. The canal will be a 140 ft. long unlined rectangular cross section canal excavated in rock, with a maximum depth of approximately 26 ft. below the existing ground surface, at the intake.

3.4.3 Penstocks and Penstock Intake

The penstock intake will be located at the downstream end of the approach channel in a rock cut through the east abutment of the dam. The intake will be founded on bedrock and connected to two steel penstocks. Two above-ground steel penstocks, 8.5 ft. in diameter and approximately 150 ft. long, will slope steeply from the intake to the powerhouse and will carry water to the turbines. The penstocks will be supported on concrete saddles and by concrete anchor blocks at the penstock bends.

Two vertical-lift, wheeled gates will provide for emergency closure, and two bulkhead gates, located upstream of the main gates, will provide for de-watering of the main gates. Trashracks will be installed upstream of the bulkhead gates. An enclosure building on top of the intake structure will house the gate hoists and controls and the air vent/access for the penstocks.

3.4.4 Powerhouse

The proposed powerhouse location is sited in an alcove on the east bank of the Similkameen River about 230 ft. downstream of the east abutment of Enloe Dam and 140 ft. upstream of Similkameen Falls. The reinforced concrete substructure will be founded in an open rock excavation in bedrock that outcrops in the banks of the river and the broad terrace upstream of the falls. The repair bay and laydown area will be located at the east end of the powerhouse.

3.4.5 Tailrace

The tailrace, an unlined channel excavated in rock, will convey water from the powerhouse to the Similkameen River, downstream of the Similkameen Falls. The channel will have a negative sloping invert toward the river, 30 to 40 feet below the existing rock terrace on the east side of Similkameen Falls.

3.5 Construction Schedule

A preliminary construction schedule for the Enloe Hydroelectric Project presents the sequencing of principal activities through the engineering design and construction process (Attachment E, Table 3.1). The four-year-long schedule indicates a traditional design-bid-build approach; however, depending on project financing needs and conditions in construction markets, the OCPUD may choose to construct the project under a design-build approach. This approach would reduce the duration of design and construction.

The construction schedule presents the planned phasing of engineering design and construction activities relative to the seasonal weather and river conditions at the Project Site. The actual dates for various activities will be determined when the license has been issued, and in accordance with the construction methods and detailed construction plans in coordination with the selected General Contractor.

Construction of power facilities is planned to take about 18 months. Road access improvements, installation of a temporary cofferdam, and construction of the training wall would be carried out prior to a three month shutdown during the first winter. Most of the site excavation and concrete construction would be conducted during the following construction season, with installation of electrical and mechanical equipment occurring in fall and through the second winter. When the plant is substantially complete it would be tested and commissioned and would be scheduled to commence operations in early spring.
Installation of the crest gates would be carried out during the subsequent fall when river flows are low at which time the new powerplant would be used to draw down the reservoir to an elevation just below the crest of the spillway. During this time, a temporary siphon would be installed on the spillway crest to maintain downstream flow in the event of an unplanned plant outage

3.6 Potential Soil Erosion Problem Areas

3.6.1 Headworks

Potential erosion problems that may occur during construction of the headworks include:

- General Stormwater Runoff – Runoff from slopes to the east of the headworks work area could flow onto the construction work area requiring control and disposal. Presently, this runoff enters Enloe Reservoir. One of the initial stages of the Project must be construction of stormwater interceptors above the headworks work area and installation of culverts to direct stormwater to surface waters (bypass reach and Enloe Reservoir).

- Stormwater Runoff from Construction Laydown Areas, Borrow Area, and Construction Roadways – Areas disturbed by construction other than the headworks work area must be appropriately graded and graveled to minimize erosion. Appropriate flow and sediment controls must be deployed to capture sediments from runoff and to minimize any offsite effects.

3.6.2 Dam and Spillway

- General Stormwater Runoff – A significant portion of the area surrounding the dam and spillway is gravel covered and little stormwater runoff is expected. However, some runoff from slopes east of the dam could reach areas of disturbed soil associated with installation of the new penstocks. Appropriate sediment control measures are proposed to be installed at the edge of these work areas to minimize the potential for offsite sedimentation.

3.6.3 Powerhouse

- General Stormwater Runoff – The area surrounding the Powerhouse is characterized by rock benches and outcroppings with a thin layer of soil in some areas. Little erosion is expected. Appropriate sediment control measures must be installed at the edge of these work areas to minimize the potential for offsite sedimentation.

3.7 Potential Stormwater Contaminants

The purpose of this section is to identify pollutants that could impact stormwater during construction. The following BMPs will be implemented at the site to prevent or reduce potential sources of stormwater pollutants at the site. These BMPs include certain activities, prohibition of practices, maintenance procedures, and management practices.

Waste Materials

Trash and construction debris from the Project Site will be collected and deposited in dumpsters. These dumpsters will be emptied when full and hauled to a licensed sanitary waste facility. The person who manages the day-to-day operations at the construction site will be responsible for seeing that these measures are implemented. Any hazardous waste generated from the site will be disposed of in accordance with the applicable state and federal regulations.

Management of Material or Substances

Substances or materials, such as detergents, paints, fertilizers, cleaning solvents, etc. will be stored in appropriate containers and will not be left in an area exposed to stormwater. These substances or materials will not be mixed with one another unless such mixing occurs in accordance with the manufacturer's specifications. When not in use, partial containers will be sealed to prevent a potential spill or exposure to stormwater. Empty containers will be disposed of in accordance with the applicable state and federal regulations. The person responsible for the day-to-day operations at the site will inspect the site daily to ensure the proper storage and/or disposal of such substances or materials.

Petroleum Products

Any petroleum products kept on the Project Site will be stored in tightly sealed containers and will be clearly labeled. If asphalt is used on site, it will be applied in accordance with the manufacturer's specifications.

Paints
Containers of paint will be tightly sealed when not in use. Excess paint will be disposed of in accordance with the applicable state and federal regulations.

Fertilizers
Fertilizers will be stored in dry areas protected from stormwater. Application of fertilizers will be conducted in accordance with the manufacturer's specifications. The disposal of excess fertilizer will be conducted in accordance with applicable state and federal specifications.

Concrete Trucks
Concrete trucks often contain excess concrete upon completion of a concrete pour. Washing out trucks or discharging excess concrete for purposes of cleaning the trucks will be prohibited.

3.8 Stormwater Controls

The following stormwater controls must be implemented at the Project construction site:

Major Activities	Controls
Installation of outfall control mechanisms.	At commencement of construction, installation of outfall control mechanisms must be completed first. These areas are intended to manage flows and sedimentation during the construction process. Stormwater drainage during construction activities will be routed around the construction site to these outfalls, which will be designed to handle differential runoff by a registered professional engineer.
Installation of utilities and stormwater conveyances.	During installation of utilities and stormwater conveyances, attempts must be made to minimize erosion by retaining as much of the existing vegetative cover on the Project Site.
Traffic route in and out of the Project Site.	Installation of stabilized construction entrances to the site must include culverts where drainage pathways exist. The placement of gravel at site entrances must be installed.
Activities that change surface elevations and piling of topsoil and soil.	Temporary seed and mulch at topsoil stockpiles and disturbed portions of the Project Site must be installed no later than the specified durations presented in this SWPPP. In these areas, hay bales or earthen berms may be temporarily placed around the stockpiles while seeding establishes.
Clearing activities for placement of all structures.	Where practicable, geotextiles, vegetative buffer strips or other controls must be used to protect vegetation or reduce soil erosion.
Installation of construction staging area roads and site.	If necessary, the road leading onto the Project Site must be regraded with additional gravel.
Final Grading Plan	The following must be implemented as part of

	the final grading plan: runoff from impervious surfaces must be directed into filter strips and swales before routed to the outfall; grading and spreading of permanent seed, fertilizer, and mulch must be complete; plugs, shrubs, samplings, and trees must be complete; removal of all temporary controls; and reseeding of all disturbed areas.

3.9 Spill Prevention and Response

A site-specific Spill Prevention, Containment, and Countermeasure (SPCC) Plan to be submitted by the General Contractor will address potential problems and methods for avoiding spills on the Project Site. However, the following general practices will be implemented at the site for spill prevention and response:

1) Containers of materials or substances will be tightly sealed when not in use.
2) If a spill should occur, the spill will be cleaned up immediately after discovery.
3) The spill area will be cleaned up in accordance with the manufacturer's recommended methods.
4) Proper ventilation in the spill area will be provided and appropriate employee protective clothing will be worn.
5) Waste generated in cleaning up the spill will be disposed of in accordance with the applicable state and federal regulations.
6) Spills of toxic or hazardous material will be reported to the General Contractor immediately, and the General Contractor will be responsible for conducting the proper notification procedures to state or local government agencies.
7) Cleanup material and equipment such as brooms, dust pans, mops, rags, gloves goggles, absorbent materials, waste containers, etc. will be kept in material storage area.

The Construction Manager responsible for the day-to-day operations at the construction site, as appointed by the OCPUD and the General Contractor, will be responsible for coordinating spill prevention and cleanup activities. This person will designate two other site personnel and train those personnel on proper spill prevention and cleanup procedures. The names of the responsible spill prevention and cleanup personnel will be posted in the onsite job trailer.

4. CONSTRUCTION STORMWATER POLLUTION PLAN ELEMENTS

Best Management Practices (BMPs) are incorporated into this SWPPP to prevent erosion and protect water quality, control dust, minimize loss of native vegetation, protect wildlife, protect cultural resources, protect and minimize potential adverse impacts to wetlands and water bodies. The following BMPs are taken from the Washington Department of Ecology, *Stormwater Management Manual for Eastern Washington* (Ecology 2004). BMPs are described in detail in the above referenced document, which is included as part of this plan by reference. Additionally, each BMP is briefly described in this document. General Contractors will submit to the SWPPP Team and the Professional Engineer additional BMPs that conform to this SWPPP. The SWPPP may be further modified during permit consultation with FERC. The General Contractor will implement approved BMPs during construction to control off-site discharge of pollutants.

The Stormwater Management Manual for Eastern Washington identifies twelve key elements that must be included in the SWPPP. These elements cover the general water quality protection strategies of limiting site impacts, preventing erosion and sedimentation, and managing activities and sources. These twelve elements are:

1) Mark Clearing Limits;
2) Establish Construction Access;
3) Control Flow Rates;
4) Install Sediment Controls;
5) Stabilize Soils;
6) Protect Slopes;
7) Protect Drain Inlets;
8) Stabilize Channels and Outlets;
9) Control Pollutants;
10) Control De-Watering;
11) Maintain BMP's; and
12) Manage the Project.

These elements must be implemented, installed, maintained, and repaired as needed. As the SWPPP evolves through the Project Site, these elements will be utilized for contingencies to improve and best manage soil erosion and sediment control.

4.1 Mark Clearing Limits

Prior to beginning land disturbing activities, including clearing and grading, the limits of the area to be disturbed will be clearly marked, which must include sensitive areas, their buffers, and trees that are to be preserved within the Project Site. Plastic, metal, or stake wire fence may be used to mark the clearing limits.

4.1.1 Buffer Zone (BMP C102)

A buffer zone is an undisturbed vegetation area or strip of newly planted vegetation that helps to reduce soil erosion and runoff velocities, as well as filter sediments. Buffer zones will be used along the River and steep slopes to protect against runoff and sedimentation.

4.1.2 Visibility Plastic or Metal Fence (BMP 103)

High visibility orange-colored fence made of a high-density polyethylene (HDPE) material at least four ft. in height will be used to protect buffer zones and other sensitive areas. At a maximum, wood or metal posts will be placed every six ft. for structural support. Additionally, polyethylene ties will fasten fencing material to each post at a minimum of every six inches. Metal fences will be at least three ft. high, highly visible, and not fastened to any trees or natural vegetation. Should the visibility or function of the fence be compromised, the fence will be immediately repaired and visibility restored.

4.2 Establish Construction Access

Relocation of the upstream access road to the Project Site will be necessary to avoid seasonally wet areas and minimize water quality impacts to the river. The proposed road alignment is expected to use the old Oroville-Tonasket Irrigation ditch right-of-way (ROW). This new access road will be stabilized with gravel to minimize tracking of sediment onto public highways. The public roadways will be cleaned thoroughly as required. Sediment must be removed from roads and disposed of in a controlled sediment disposal area. At a minimum, road approaches must be constructed as directed by the engineer and in conformance with the following two BMPs:

4.2.1 Stabilized Construction Entrance (BMP C105)

To stabilize construction entrances and reduce the amount of sediment transported onto paved roads by vehicles or equipment, stabilized pads of quarry spalls will be constructed at entrances to construction sites. Construction entrances must be stabilized wherever traffic will be leaving a construction site and traveling on paved roads or other paved areas within 1,000 ft. of the site. Specifications on the design and installation of construction entrances can be found in *Stormwater Management Manual for Eastern Washington* (Ecology 2004).

4.2.2 Construction Road/Parking Area Stabilization (BMP 107)

Construction laydown areas, parking (both temporary and permanent), and access roads must be stabilized immediately after grading to reduce erosion caused by traffic. A six-inch depth of two-to-four inch crushed rock base and crushed surfacing course will be applied. Areas will be graded to promote runoff into adjacent vegetated areas.

4.3 Control Flow Rates

The Similkameen River is exempt from flow control requirements to protect stream morphology as specified in Ecology 2004.

4.4 Install Sediment Controls

Temporary sediment barriers are designed to reduce water velocity and intercept suspended sediment conveyed by sheet flow, while allowing runoff to continue down gradient. These installations limit sediment transport out of the construction area. Temporary sediment barriers must be installed at the following locations immediately after initial ground disturbance:

- adjacent to paved roadways, drainages, wetlands (dry or wet), springs (dry or wet), impoundments (dry or wet), floodplains, and other sensitive resources where topography will direct sediment into these resource areas;
- around soil or spoil piles, where necessary (e.g., adjacent to flowing drainages); and
- as requested by the CESCL, to prevent significant sediment transport into adjacent resource areas.

Prior to starting any construction activities and/or before any land disturbing activities are started, appropriate sediment barriers must be installed. Sediment barriers will be placed at the bottom of slopes and will be located at least 6 ft. from the toe of the slope, where possible, in order to increase pending volume. The ends of each sediment barrier will be turned upslope to capture sediment.

Sediment barriers will be placed above the ordinary high water mark of active stream channels in a manner that will not hinder construction activities. If sediment barriers are placed across the construction area, provisions will be made for traffic flow. A gap approximately 15 ft. wide will be provided along the silt fence or straw bale row, with the ends of the sediment barrier turned slightly upslope. Across the gap, a drivable earth berm will be installed and maintained immediately upslope of the sediment barrier (upturned ends of the sediment barrier will tie into the drivable earth berm).

If sediment builds up to greater than 40 percent of barrier capacity, the accumulated sediment must be removed or spread on an approved sediment disposal site. Damaged or undermined sediment control barriers will be repaired or replaced as described in this plan. Primary control of sediment discharge from this activity will be achieved with the BMPs listed below.

Sediment barriers to be installed include:

4.4.1 Straw Bale Barrier (BMP C230)

Straw bale sediment barriers consist of a row of tightly abutted straw bales placed perpendicular to the runoff direction with the ends of the barrier turned upslope. Such barriers are typically one bale high, placed on the fiber-cut edge (ties not in contact with the ground) in a 4-inch-deep trench, and anchored securely with two wooden stakes driven through each bale. Soil will be placed and compacted along the toe of the uphill side of the straw bale barrier. If a dugout area cannot be excavated due to the presence of rocky material, the General Contractor must install the straw bale so that the bale will not be undermined. Only straw bales that are certified to be free of noxious weeds will be used. The General Contractor will acquire weed-free straw and

provide OCPUD with the appropriate documentation. The use of straw bales must be limited, and other measures for sediment control must be considered first.

4.4.2 Silt Fence (BMP C233)

Silt fence composed of commercial filter fabrics with sufficient strength to prevent failure will be provided and installed by the General Contractor. The height of the silt fence must not exceed 36 in. above the ground. The fabric will be cut from a continuous roll of fabric with splices only at the support posts. When splicing sections, at least a 6-inch overlap of fabric must be secured and wrapped to the post(s). Support posts will be a maximum of 10 ft. apart. Silt fences will be constructed at the base of slopes adjacent to the new access roadway and the river. Silt fences will also be installed downslope of all disturbed areas.

The bottom edge of the silt fence will be embedded in a trench excavated approximately 4 inches wide by 6 inches deep and refilled with compacted soil, unless on-site constraints dictate otherwise (e.g., rock). If a trench cannot be excavated, the General Contractor must secure the bottom edge of the silt fence so that it will not be undermined. Silt fences will be attached to supporting posts by staples or wire. As determined by the CESCL, a wire fence may be used instead of wooden support posts to provide additional strength on hillsides.

4.4.3 Sandbags

Sandbags may be used as dikes or sediment barriers to control sediment in drainage swales. Sandbags can be strategically placed to control runoff, dissipate runoff energy, and catch sediment.

4.5 Stabilize Soils

Exposed and unworked soils will be stabilized by application of effective BMPs that protect the soil from the erosive forces of raindrops, flowing water, and wind. From October 1 through June 30, no soils will remain exposed and unworked for more than five days. From July 1 to September 30, no soils will remain exposed and unworked for more than ten days. This stabilization requirement applies to all soils on site, whether at final grade or not.

Soils will be stabilized at the end of the shift before a holiday or weekend, if needed, based on the weather forecast. Applicable practices include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.

Selected soil stabilization measures will be appropriate for the time of year, site conditions, estimated duration of use and the water quality impacts that stabilization agents may have on downstream waters or ground water. Soil stockpiles must be stabilized and protected with sediment trapping measures.

Seeding must be used throughout the project on areas that have reached final grade or that will remain unworked for more than 30 days.

BMPs to be employed in stabilizing soils include:

4.5.1 Mulching (BMP C121)

Mulching is an erosion control practice that uses hay, straw, or wood fibers placed on the soil surface for temporary soil stabilization. In addition to stabilizing soils, mulching can reduce the speed of stormwater runoff, aid in plant growth, and retain moisture in the soil after an area has been planted. Mulch, consisting of weed-free straw, wood fiber, or an approved equivalent, may be applied to disturbed soils to minimize the effects of wind or rain on exposed soils. During rainy conditions, mulch reduces the impact of rainfall by reducing erosion potential and decreasing surface flow velocity.

- Straw mulch will be required in the following areas:
  - within 100 ft. of flowing streams;
  - slopes of 30 to 40 percent with less than 70 percent surface cover; and
  - slopes of 0 to 30 percent with highly wind erodible soils and less than 70 percent surface cover, as directed by the CESCL and SWPPP Team.

If reclamation and seeding is deferred for more than ten days after final grade restoration, all disturbed slopes above waterbodies and wetlands must be temporarily stabilized by applying 3 tons of dry straw mulch per acre for a minimum distance of 100 ft. above the edge of the waterbody or wetland.

After final restoration and seeding, mulch will be applied to all dry sandy sites, slopes greater than 8 percent, and all slopes within 100 ft. of waterbodies to control erosion. Mulch will be spread over the area to a visible coverage of at least 75 percent of the ground surface and at a rate of 2 tons of dry straw (or functional equivalent) per acre.

4.5.2 Temporary and Permanent Seeding (BMP C120)

Following final contouring of the Project Site and installation of permanent erosion control measures, the Project Site must be seeded with a seed mix that is native and appropriate for the local conditions. Due to the dispersed nature of this project, the CESCL, in conjunction with the OCPUD, will determine specific re-vegetation requirements (including seed mixtures and soil amendments) for each site. The Project Site must be seeded within six working days of final grading in accordance with recommended seeding dates, weather and soil conditions permitting. Slopes steeper than 3:1 must be seeded immediately after final grading in accordance with recommended seeding dates, weather permitting.

Prior to seed application, the seedbed will be prepared to a depth of three to four inches using appropriate equipment to provide a firm, smooth seedbed that is free of debris. For broadcast and hydro-seeding, the seedbed will be scarified to ensure sites for seeds to lodge and germinate. The seed will be applied and covered uniformly per local soil conservation authorities' recommendations for the seed mixture being applied. A range drill will be used on many of the disturbed sites; however, broadcast or hydro-seeding may also be used at double the recommended seeding rates.

Seed will be purchased in accordance with the Pure Live Seed (PLS) specifications for seed mixes and used within 12 months of testing. PLS is an agricultural industry standard that omits dust, chaff, and empty seed, weed and other crop seed in the calculation of the weight and

value of purchased seed. Specifics on the calculation of PLS can be found at http://www.dot.state.tx.us/mnt/wildflower/pls/explanation.htm. Legume seed will be treated with a species-specific inoculate per manufacturer's specifications.

4.5.3 Matting/Netting

Where determined necessary by the CESCL, erosion control matting will be installed along banks of flowing streams and steep slopes (greater than 33 percent) after final grade restoration to reduce rain impacts on soils, to control erosion, and to stabilize steep slopes and waterbody banks.

As it is unrolled, matting will be anchored to prevent stretching of the material and inadequate ground contact. Anchoring is critical in the success of the matting and netting. For stream bank installations, mats will be laid parallel (upper mat overlapping lower mat in a shingle pattern) to the waterbody to a point above the top of the bank. Native materials (e.g., rocks, logs, etc.) may be used in conjunction with the matting to aid in bank stabilization.

During regular erosion control monitoring, erosion control matting must be inspected for washouts, adequate staking, and loss of matting. Damaged or undermined matting will be repaired or replaced, as necessary.

4.6 Protect Slopes

Fill and cut slopes will be part of the construction activities on the Project Site. These will include access ramps, permanent and temporary fill and excavation slopes. Slopes must be constructed in accordance with applicable codes and regulations.

Cut and fill slopes will be constructed in a manner that will minimize erosion. Slopes exceeding 100 ft. in length must be terraced. No more than five acres of slopes will be exposed at any given time. All surface runoff will be routed away from exposed slopes using curbs and interceptor dikes, and conveyed to the base of the slope using slope drains. Slopes will be track walked when at finish grade or whenever they will be left unworked for 30 days or more. Final stabilization BMPs must be installed within two days of slope completion.

Temporary erosion control measures must be installed where needed immediately following significant soil disturbance and must be maintained throughout the course of construction. In general, temporary erosion control measures will be removed during cleanup activities after permanent erosion control measures have been installed. Permanent erosion control measures are designed to minimize erosion and sedimentation after construction until re-vegetation efforts have effectively stabilized the construction area.

BMPs to be employed in stabilizing slopes include:

4.6.1 Waterbars (BMP C203)

Waterbars are utilized in various forms (e.g., rolling dips on access roads, drivable berms across travel ways, waterbars on slopes, etc.) during project construction and after final grade restoration. Waterbars are intended to intercept water traveling down a disturbed slope and divert water off disturbed soil into stable, well-vegetated, or adjacent rocky areas.

Waterbars will be installed near the base of slopes adjacent to wetlands and drainageways, except at those specific sites where, in the judgment of the CESCL, waterbars are not necessary to prevent discharge of sediment into sensitive resources. The general spacing for temporary and permanent waterbars is as follows:

- 300 ft. for slopes of 5 to 15 percent
- 200 ft. for slopes of 15 to 30 percent
- 100 ft. for slopes greater than 30 percent

The CESCL can modify the final spacing of waterbars in the field. Waterbar spacing is based on a site-specific evaluation of the Project Site and standard construction protective measures. This spacing takes into account the soils, timing of construction, and area of disturbance anticipated for construction of the project. Except for site-specific situations as determined by the CESCL (e.g., extremely long slopes with highly erodible soils), waterbars will not be constructed on slopes with less than a 5 percent gradient.

Earthen waterbars must be constructed of existing suitable material and compacted to increase durability. Alternatives to waterbars may include a series of tightly abutted straw bales (constructed as per Section 4.4.1), excelsior logs, or abutted burlap bags filled with native sand/soil. The installation angle will be 2 to 8 percent down slope (as measured by a hand-held clinometer or level) and will extend to, or slightly beyond, the edge of the disturbed construction area, but within the boundaries of the Project area.

Where possible, waterbars will discharge into stable, non-erosive (vegetated or rocky) receiving areas. In isolated instances where waterbars discharge into unstable or highly erosive areas without rock or vegetation, flow energy dissipators or “J-hook” shaped sediment barriers may be positioned at the waterbar outlet. Additionally, in highly erodible soils, the spacing between waterbars may be decreased to further slow the velocity of water. Whenever feasible, waterbars will be sited so that they do not drain into sensitive resource areas (e.g., cultural sites, rare plant sites, drainages, waterbodies, wetlands, etc.).

The General Contractor must regularly inspect and repair waterbars during construction to maintain their effectiveness. Waterbars worn down by heavy construction traffic or filled with sediments must be repaired, as needed, and sediment must be spread on the disturbed area uphill of the waterbar.

4.6.2 Check Dams (BMP C207)

Where determined necessary by the CESCL, the General Contractor will install check dams in bar ditches or other intermittent drainages to minimize the transport of sediment from the construction zone. Check dams will be constructed of staked straw bales or stacked sand bags just inside the drainage area edge. The center of the structure must be lower than the ends to channel water and create a sediment dump immediately upstream of the structure. The structure, and any deposited sediment, will be removed following final restoration of the site.

4.6.3 Surface Roughening (BMP C130)

Surface roughening involves tracking ground surface with heavy machinery creating a series of shallow depressions running parallel to the ground surface contours. Surface roughening

assists in controlling erosion by reducing the speed of storm water runoff, increasing infiltration, and trapping sediment.

4.7 Protect Drain Inlets

Inlet protection must be provided to prevent coarse sediment from entering drainage systems prior to permanent stabilization of the disturbed area. Protection should be provided for all culvert and drain inlets downslope and within 500 ft. of a disturbed or construction area, unless the runoff that enters the culvert or drain will be conveyed to a sediment pond or trap. Inlet protection may be used anywhere to protect the drainage system. BMPs to be used for protection of drain inlets include straw bales, silt fences, and straw wattles.

4.8 Stabilize Channels and Outlets

Temporary diversions will be located to prevent erosion of slopes, prevent run-on to disturbed areas, and divert runoff away from existing inlets. Temporary conveyance channels must be designed for the two-year, 24-hour storm event. Riprap will be placed at the locations shown on the drawings for minimizing and preventing additional and future erosion. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent streambanks, slopes, and downstream reaches must be provided at the outlets of all conveyance systems. Other riprap uses may include slope stabilization or channel check dams, etc. Relocation and use of practices will occur as construction progresses.

4.9 Control Pollutants

All pollutants, including waste material and demolition debris, that occur on the site during construction will be handled and disposed of in a manner that does not cause contamination of stormwater. Woody debris may be chopped and spread on site. No hazardous or toxic substances, except vehicle fueling and lubricants, will be utilized for the work on this Project. Vehicle fueling and maintenance must occur in a staging area as identified on the drawings.

Accidental leaks and spills of chemicals or fluids (including petroleum-based products) from equipment and machinery, wet concrete, concrete leachate or particulates, or demolition debris in the construction area could release potentially toxic substances directly to surface water, or to soil areas within the margins of the active channel. This would potentially violate water quality standards or impact aquatic resources. A site-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan to be submitted by the General Contractor will address these potential problems and methods for avoiding them on the Project Site. The SPCC Plan will include, at minimum, the following measures to protect water quality:

- Refueling of construction equipment and vehicles in the staging area will only occur within a designated, paved, and bermed area where possible spills can be contained. Fuel storage would be in double contained areas, capable of holding 125 percent of the volume of fuel being stored.

- Truck and cement equipment wash-down will not occur in the ordinary high water area of the channel.

- Equipment and vehicles operated within the ordinary high water will be checked and maintained daily to prevent leaks of fuels, lubricants, or other fluids to the stream.

- Litter and construction debris will be removed from below the ordinary high water line daily and disposed of at an appropriate site. All litter, debris, and unused materials, equipment or supplies would be removed from the construction staging areas above ordinary high water at the end of the construction season.

- At the end of each workday, all construction equipment will be moved to the staging area to Protect against accidental spills.

- All vehicles carrying over 150 gallons of fuel will have a fuel spill prevention plan and all materials required to clean up a spill if it were to occur in transit. In some cases, a vehicle following the fuel truck would carry the clean-up equipment.

4.10 Control De-Watering

The intake canal, powerhouse, and tailrace will be dewatered during construction. During this phase of the construction project, silt screens will be used to minimize the spread of construction-related turbidity. De-watering water will be discharged into a controlled conveyance system prior to discharge to a sediment pond or sediment trap. Monitoring and maintenance of these devises will be ongoing, and the failure of any of these devices must be rectified immediately. Details on the design and installation specifications can be found in Ecology 2004.

4.11 Maintain BMPs

Temporary and permanent erosion and sediment control BMPs must be maintained and repaired as needed to assure continued performance of their intended function.

The General Contractor and the CESCL must inspect sediment control BMPs weekly. In addition, BMPs should be inspected as soon as is practical after runoff producing storm events during the dry season and daily during the wet season. Maintenance activities will be completed within 24 hours of the inspection. An inspection and maintenance report will be prepared following each inspection. Specific maintenance requirements for each BMP must be performed according to the maintenance guidelines in the Ecology's Stormwater Management Manual for Eastern Washington.

Temporary erosion and sediment control BMPs must be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer deemed necessary by the CESCL. Trapped sediment must be removed or stabilized on site and disturbed soil resulting from removal of BMPs or vegetation must be permanently stabilized.

The General Contractor and the CESCL will review daily the location of silt fences and drainage swales where active construction is occurring to ensure that silt fences and swales are properly located and functioning. If any turbid discharges are observed, the OCPUD must be notified immediately and corrective actions will be prescribed. Where deficiencies exist, additional BMPs will be installed as directed by the CESCL.

4.12 Manage the Project

The construction of sedimentation and erosion control features are planned to proceed in the following sequence of activities:

- Install filtration best management practices (BMP);
- Install gravel access (ingress/egress) road;
- Construct and install diversion structures;
- Excavate area;
- Construct facilities;
- Finish grade;
- Re-vegetate and landscape; and
- Remove BMPs when no longer required.

The sequence and methods planned must be reviewed periodically and adjusted as necessary to minimize and control disturbed areas.

5. INSPECTIONS AND MONITORING

All BMPs must be inspected, maintained, and repaired by the CESCL and General Contractor as needed to assure continued performance of the intended function. Whenever inspection and/or monitoring reveals that BMPs identified in the SWPPP are inadequate due to actual or potential discharge of a significant amount of any pollutant, the SWPPP must be modified by the CESCL as appropriate, in a timely manner.

Inspections must be carried out as follows: routine inspections must be performed by the CECSL at least weekly and within 24 hours after a rain event greater than 0.5 inches in a 24 hour period. All weekly written reports must include active construction activities as well as restored areas until re-vegetation is established. All inspections must be documented using the "Routine Inspection Form" located in Attachment F.

Any noncompliance or discharge that may seriously endanger health or the environment must be reported immediately, and no later than 24 hours from the time OCPUD first becomes aware of the circumstance. The report must be made to the appropriate agency in accordance with the SPCC Plan and will be made to the U.S. EPA Emergency Response Branch and the appropriate state agency. In addition to verbal notification, a written submission to both the USEPA and the state agency must be provided within 5 days of the time that OCPUD becomes aware of the circumstances. The submission will contain the following:

- Description of the noncompliance and the cause;
- Period of noncompliance, including exact dates and times;
- Estimated time noncompliance is expected to continue, if it has not been corrected; and
- Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

5.1 Location and Implementation of Construction SWPPP

The SWPPP must be kept on file at the construction site and be available for review. The SWPPP will be reviewed and evaluated by the CESCL, General Contractor, and appropriate agencies and any changes must be approved by the Professional Engineer. This document must be appropriately amended whenever there are changes in construction operation.

5.2 Construction Management

Overall project control will be under a Construction Manager who will have personnel on-site. Included in the Construction Manager's responsibility will be monitoring of work completed including implementation of BMPs as specified in the SWPPP. The Construction Manager will also have responsibility for Quality Assurance/Quality Control including verification of the effectiveness of implemented BMPs.

6. RECORDKEEPING

Copies of this SWPPP and all documentation will be retained within this SWPPP for at least three years from the date of construction. The following records must be retained:

- A copy of this SWPPP;
- All reports and actions required by the Construction General Permit (CGP)(USEPA 2005), including a copy of the construction site notice; and
- All data required to complete the Notice of Intent for coverage under the GCP.

7. TRAINING

Any employee working at the Project Site has the potential to cause pollution to the stormwater. Therefore, all employees must receive annual training on the SWPPP. The dates and attendees must be documented at each training class. Copies of the training documentation will be retained by OCPUD.

All personnel involved in the Project will attend an environmental training program that will include a discussion on general erosion and sediment control requirements, proper clearing and grading methods, and the importance of protecting sensitive resources on the project. Crews specializing in erosion control tasks will be given additional training on proper installation and maintenance of erosion and sediment control measures.

It will be the responsibility of OCPUD, the General Contractors, and their employees to read, understand, and comply with the requirements and commitments set forth in this SWPPP.

8. COMPLETION PROCEDURES

8.1 Final Termination

Final stabilization in the *NPDES General Permit for Stormwater Discharges from Construction Activities* (GCP) is defined as:

- "All soil disturbing activities have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas not covered by permanent structures, or equivalent permanent stabilization measures (such as rip-rap, gabions, or geotextiles) have been employed" (USEPA 2005).

- "In some parts of the country, background vegetation will cover less than 50 percent of the ground (i.e., arid areas). Establishing at least 70 percent of the native vegetation cover criteria for final stabilization (e.g., if the native vegetation covers 50 percent of the ground), 70 percent of the 50 percent would require 35 percent total cover for final stabilization." (USEPA 2005).

8.2 Notice of Termination

Following completion of construction activities and final stabilization of disturbed areas, a Notice of Termination (NOT) will be submitted to federal, state, and local authorities. The NOT serves as notification that permit coverage of storm water discharges associated with the construction activities under the general NPDES Permit have been terminated.

8.3 Long-term Stormwater Management

Following completion of construction activities at the Project Site, all disturbed areas must be stabilized either through re-vegetation or other appropriate measures. After construction areas are adequately stabilized and a NOT has been filed, no additional stormwater management will be undertaken.

9. LITERATURE CITED

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USEPA, 2005. NPDES General Permit for Stormwater Discharges from Construction Activities. Construction General Permit (CGP) 2003. Modified January 21, 2005. http://www.epa.gov/npdes/pubs/cgp2003_entirepermit.pdf

Villalobos, H. 1982. Master's Thesis: Engineering geology reconnaissance of five dam sites and reservoir study areas, Similkameen River, Okanogan County, Washington. San Jose State University, San Jose, California.

Ecology, 2004. Stormwater Management Manual for Eastern Washington. Washington Department of Ecology Water Quality Program. September 2004. Publication #: 04-10-076

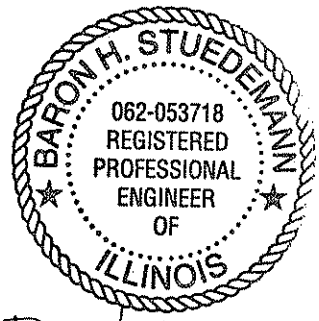
10. STORM WATER POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Baron H. Stuedemann

Mr. Baron H. Stuedemann, P.E.
Senior Consultant
ENTRIX, Inc.

7/28/08
Date



Baron H. Stuedemann
Exp. 11/30/2009

Attachment B

SWPPP Team

Certified Erosion and Sediment Control Lead (CESCL)	
Support Member #1 Housekeeping and Monitoring	
Support Member #2 Implementation and Integrity of BMPs	