Stormwater Pollution Prevention Plan

For
Parker Horn Dewatering Pond

Prepared For
Eastern Regional Office
North 4601 Monroe
Spokane, WA 99205-1295
509-329-3400

Owner	Developer	Operator/Contractor
Moses Lake Irrigation & Rehabilitation District	~	Moses Lake Irrigation & Rehabilitation District
P.O. Box 98	~	P.O. Box 98
Moses Lake, WA 98837	~	Moses Lake, WA 98837

Project Site Location
Parker Horn – North of intersection of 3rd Ave. & Broadway Ave. - Moses Lake, Washington

Certified Erosion and Sediment Control Lead
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SWPPP Prepared By
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SWPPP Preparation Date
March 24, 2011

Approximate Project Construction Dates
June 1, 2011
September 1, 2011

Contents

Appendix A Site plans

- Vicinity map (with all discharge points)
- Site plan with TESC measures

Appendix B Construction BMPs

- Possibly reference in BMPs, but likely it will be a consolidated list so that the applicant can photocopy from the list from the SWMM.

Appendix C Alternative Construction BMP list

- List of BMPs not selected, but can be referenced if needed in each of the 12 elements

Appendix D General Permit

Appendix E Site Log and Inspection Forms

Appendix F Engineering Calculations (if necessary)

- Flows, ponds, etc…

1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared as part of the NPDES stormwater permit requirements for the Parker Horn Dewatering Pond construction project in Moses Lake, Washington. The site is located north of the intersection of 3rd Avenue and Broadway Avenue and is north of the Moses Lake central business district. The existing site is 4.0 acres which is currently unimproved land. The proposed development consists of the construction of a temporary dewatering pond, haul roads and dredge material re-handling area.

Construction activities will include stripping, grading, embankment earthwork, dredging lake sediments, and transporting dredged spoils by pipeline to a dewatering pond. The dredged spoils will be hauled by tuck to a re-handling area where they will be stored until transported by truck to a disposal site locaated at Connelly Park north of Moses Lake. 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:

1. 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.

2. Prevent violations of surface water quality, ground water quality, or sediment management standards.

3. 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 July 2, 2005. This SWPPP was prepared based on the requirements set forth in the Construction Stormwater General Permit, Stormwater Management Manual for Western Washington (SWMMWW 2005) and in the Stormwater Management Manual for Eastern Washington (SWMMEW 2004). 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 (SWMMEW 2004).

- 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
Appendix F – Engineering Calculations

2.0 Site Description

2.1 Existing Conditions

The proposed site is located north of the intersection of 3rd Avenue and Broadway Avenue in Moses Lake, Washington. A site vicinity map and coordinates are provided in Appendix A. The site which includes haul roads is 4.0 acres in size and includes a temporary dewatering/confinement pond, haul roads and a dredge material re-handling area. The maximum dike height will be eight feet. The volume of dredged material that will be placed at the dewatering pond during each dredging-dewatering-emptying cycle is 3,000 cubic yards. The topography of the site and surrounding properties gently slopes to the west. Site soils are a silty sand with gravel (classified SM under the Unitifed Soils Cassifcation System). The site is well drained and groundwater lies approximately 15 feet below the surface.

Runoff from the site generally drains from south to north to Moses Lake.

There are no critical areas on the site such as high erosion risk areas, streams, or steep slopes (potential landslide area). There is a wetland along the shoreline refer to the shoreline zone as indicated on the site plan in Appendix A.

2.2 Proposed Construction Activities

The proposed development includes the construction of a temporary dewatering/confinement pond, haul roads and a dredge material re-handling area. A dewatering/confinement pond will be constructed south of the wetlands (shoreline zone) and will hold up to 3,000 cubic yards of dredge material. Once the material is dewatered it will be loaded into trucks and transported on a haul road and stored at the re-handling area. The material will then be transported by truck to a disposal area off-site.

Construction activities will include site clearing, earthwork, construction of temporary dikes, and haul roads. At the completion of dredging operations the temporary dikes, haul roads and storage areas will be razed, the ground surfaces returned to original contours and ground cover restored.

The following summarizes details regarding site areas:

- Total site area: 4.0 acres
- Percent impervious area before construction: 0 %
- Percent impervious area after construction: 0 %
- Disturbed area during construction: 4.0 acres
- Disturbed area that is characterized as impervious during construction (i.e., access roads, staging, pond): 2.1 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:

- Preserving Natural Vegetation (BMP C101)

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 stabilized construction entrance shall be located so that all vehicles must pass over the BMP to entering public roads.

3.1.3 Element #3 – Control Flow Rates

In order to protect the properties and waterways downstream of the project site, stormwater discharges from the site would be controlled. Sediment controls, identified in the next section,

would be used to control both sediment and runoff from the construction site. Additional BMPs would be implemented by the certified erosion and sediment control lead to control flow rates as necessary.

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.

3.1.4 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:

- Materials on Hand (BMP C150) Materials for straw bale barrier (BMP C230) should be maintained on site should the need arise for additional control of runoff.Straw bale barrier may be used in two ways: to create a barrier to pond water for treatment prior to discharging from the site and/or to prevent erosion, the bales would be taken apart and spread onto the bare ground. Straw wattles (BMP C235) may be kept on site and used to assist with other BMPs to reduce erosion from newly disturbed soils or newly constructed slopes as necessary.

- Silt fence (BMP C233) A silt fence would be used downslope of the dewatering/confinement pond along the length of the pond and primary storage areas.

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).

In some cases, sediment discharge in concentrated runoff can be controlled using permanent stormwater BMPs (e.g., infiltration swales, ponds, trenches). Sediment loads can limit the effectiveness of some permanent stormwater BMPs, such as those used for infiltration or biofiltration; however, those BMPs designed to remove solids by settling (wet ponds or detention ponds) can be used during the construction phase. When permanent stormwater BMPs will be used to control sediment discharge during construction, the structure will be protected from excessive sedimentation with adequate erosion and sediment control BMPs. Any accumulated sediment shall be removed after construction is complete and the permanent stormwater BMP will be restabilized with vegetation per applicable design requirements once the remainder of the site has been stabilized.

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)

3.1.5 Element #5 – Stabilize Soils

Exposed and unworked 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:

- No BMPs to be implemented

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 in the Central Basin east of the Cascade Mountain Crest. As such, no soils shall remain exposed and unworked for more than 30 days during the dry season (July 1 to

September 30) and 15 days during the wet season (October 1 to June 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:

- No BMPs to be implemented

3.1.7 Element #7 – Protect Drain Inlets

There are no drain inlets identified along the construction site. In the event that drain inlets are encountered, they would be protected with the following: Storm Drain Inlet Protection (BMP C220) Prevent course sediment from entering drainage systems prior to permanent stabilization of the disturbed area. Protect storm drain inlets as needed.

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.

3.1.8 Element #8 – Stabilize Channels and Outlets

There are no identified channels or outlets along the construction site. In the event that channels or outlets are encountered, they should be protected. The specific BMPs for channel and outlet stabilization that would be used include:

- Outlet Protection (BMP C209)
- Materials on Hand (BMP C150)

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.

The project site is located east of the Cascade Mountain Crest. As such, all temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the expected peak flow velocity of a 2-year, 24-hour recurrence interval storm for the developed condition. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent streambanks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.

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. The construction equipment used on the site is subject to fuel and lubricant spills and leakage. The goal is to achieve three objectives - prevent spills, contain a spill that occurs, and clean up the spill. 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.

Other:

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

The facility is not transportation-related and therefore subject to the criteria for determining if a Spill Prevention, Control, and Countermeasure (SPCC) Plan is required under the Federal regulations of the Clean Water Act (CWA).

The facility 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, nonturbid 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.

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.

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)
- Infiltration
- Use of a sedimentation bag, with outfall to a ditch or swale for small volumes of localized dewatering.
- Alternative BMP not included in the SWMMWW (2005) or SWMMEW (2004)

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 east 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, to the maximum extent practicable, the transport of sediment from the development site during construction. Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities during each phase.
- Clearing and grading activities will be conducted only as pursuant to a site development plan approved by the local jurisdiction that establishes permitted areas of clearing, grading, cutting, and filling. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as required by the local jurisdiction, are delineated on the site plans and shall be delineated at the construction site.

Seasonal Work Limitations

- The local permitting authority may impose a seasonal limitation on site disturbance. This decision may be based upon local weather conditions

and/or other information provided including site conditions, the extent and nature of the construction activity, and the proposed erosion and sediment control measures.

- 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 Contractors

- 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.
- A Certified Erosion and Sediment Control Lead shall be on-site or on-call at all times.
- Sampling and analysis of the stormwater discharges from the construction site may be necessary to ensure compliance with standards. It is recognized that the local permitting authority may establish monitoring and reporting requirements when necessary.
- Whenever inspection and/or monitoring reveals that the BMPs identified in the this SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, the SWPPP shall be modified, as appropriate, in a timely manner.

Maintenance of the 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 significant change in the design, construction, operation, or maintenance of any BMP.

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.

3.3 Additional Advanced BMPs

The following BMPs are advanced and are only recommended if construction activities are complex enough to warrant them, or if the site has potential for significant impacts to water quality.

- Sediment Trap (BMP C240)
- Temporary Sediment Pond (BMP C241)
- Outlet Protection (BMP C209)

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.

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 east of the Cascade Mountain Crest. As such, the dry season is considered to be from July 1 to September 30 and the wet season is considered to be from October 1 to June 30.

- Mobilize equipment on site: June 1, 2011
- Mobilize and store all ESC and soil stabilization products: June 1, 2011
- Install ESC measures: ~
- Install stabilized construction entrance: June 1, 2011
- Begin clearing and grubbing: June 1, 2011
- Raze temporary pond, haul roads and re-handling area: September 1, 2011
- Restore surface contours and ground cover: September 15, 2011

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 that is the site owner or representative of the site owner than can be contacted if required.
- 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.

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	Dan Stall	(509) 766-1226
Resident Engineer	~	~

Emergency Ecology Contact	**Jeremy** Ryf	**(509)** 329-3610
Emergency Owner Contact	**Curt** Carpenter	**(509)** 750-6901
Non-Emergency Ecology Contact	**Jeremy** Ryf	**(509)** 329-3610
Monitoring Personnel	**Dan** Stall	**(509)** 766-1226

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 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:

1. Ensure all BMPs specified in this SWPPP are installed and functioning as intended.

2. Assess whether additional BMPs should be implemented, and document revisions to the SWPPP as necessary.

3. 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:

1. Notify Ecology by phone within 24 hours of analysis (see Section 5.0 of this SWPPP for contact information).

2. Continue daily sampling until the turbidity is less than 25 NTU (or transparency is greater than 32 cm).

3. Initiate additional treatment BMPs such as off-site treatment, infiltration, filtration and chemical treatment within 24 hours of the first 250 NTU exceedance.

4. Implement additional treatment BMPs as soon as possible, but within 7 days of the first 250 NTU exceedance.

5. 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.

The construction site is less than one acre in size, and does not discharge to an impaired water body, and is therefore not subject to the general water quality monitoring requirements set forth in the 2005 Construction Stormwater General Permit (Appendix D).

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.

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

[Prior to October 2008] If cumulative soil disturbance is smaller than 5 acres: Discharge Monitoring Report (DMR) forms will not be submitted to Ecology because water quality sampling is not being conducted at the site.

If cumulative soil disturbance is 5 acres or larger: Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. Of there was no discharge during a given monitoring period, the Permittee shall submit the form as required, with the words "No discharge" entered in the place of monitoring results. The DMR due date is 15 days following the end of each month.

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:

6. Ecology will be immediately notified of the failure to comply.

7. 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.

8. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

In accordance with permit condition S2.A, a complete application form will be submitted to Ecology and the appropriate local jurisdiction (if applicable) to be covered by the General Permit.

Appendix A – Site Plans

Technical Memorandum 1-11-009

Moses Lake Irrigation and Rehabilitation District Parker Horn Dredging Project, Site Suitability Criteria per the Stormwater Management Manual for Eastern Washington (SMMEW) Section 5.4.3

Introduction

This Technical Memorandum addresses the City of Moses Lake's comment #5 on the grading permit for dredging. *Section 5.4.3 General Considerations for Infiltration and Bio-Infiltration Facilities* requires the consideration of seven (7) Site Suitability Criteria (SCC) when selecting a site for use as an infiltration system.

SSC-1 Setback Criteria

The proposed dewatering site meets the setback criteria set forth in SSC-1. Specifically, the facilities are to be 100' from wells, septic tanks or drain fields, and springs used for drinking water. There are none of these facilities known to be on site. The dewatering area is setback 100' from the south property line to maintain greater than the required distance from any potential offsite drain field.
There are no buildings foundations within 20' downslope and 100' upslope.
There are no NGPE's within 20'.
There are no steep slopes within 50'.

SSC-2 Groundwater Protection Areas

The site is not located in a Groundwater Protection Area.

SCC-3 Soil Infiltration Rate/Drawdown Time

The site is infiltrating water from the lake that will infiltrate back to the lake due to the hydraulic gradient and proximity to Moses Lake. The runoff is not anticipated to contain contaminants and the infiltration facility is not planned to provide water quality treatment, just provide a conduit for the water to return to the lake.
SCC-3 requires a drawdown time of 72 hours in order to restore hydraulic capacity to receive runoff from a new storm. This facility does not receive stormwater runoff and the amount of material placed in the facility for dewatering is monitored and controlled. Therefore, this requirement does not apply to this operation.

SCC-4 Depth to Bedrock, Water Table, or Impermeable Layer

The depth to bedrock or other impermeable layer, in conjunction with the soil permeability, is important when considering the adequacy of the capacity to prevent overtopping of the pond. Previous studies (Coast and Harbor Technical Memo – Parker Horn Dredging Proposal – City of Moses Lake Comment Letter – November 22, 2010) show that the depth to any confining layers are greater than the minimum of 5'.

SCC-5 Soil Physical and Chemical Suitability for Treatment

The soils are not being considered for treatment.

SCC-6 Seepage Analysis and Control

The seepage is anticipated to infiltrate the ground in the dewatering area and then follow the downward gradient toward Moses Lake approximately 200 west. No adverse affects are anticipated by the seepage.

SCC-7 Construction Monitoring

The construction of the dewatering facility will be monitored and evaluated by a professional engineer.

Prepared By:

Mark Keller, PE

Columbia Northwest Engineering
249 N. Elder Street
Moses Lake, WA 98837

COAST & HARBOR
ENGINEERING

Technical Memorandum

Moses Lake Irrigation and Rehabilitation District Parker Horn Dredging Project, Dredged Material Disposal Confinement Design

1. Introduction

This Technical Memorandum presents basis for the design of a temporary confinement for dredged material disposal for the Parker Horn dredging project. The confinement dike design permit drawings are attached (Attachment 1). Dredged material will be placed in the confined disposal area, dewatered, and removed by truck for beneficial use. These operations (placement of dredged material, dewatering, and emptying disposal site) will repeat through the duration of the Parker Horn dredging project. Confinement provides dewatering and temporary storage of dredged material for each of the cycles during the entire period of dredging.

The design of the confinement was conducted based on the standards established by the United States Army Corps of Engineers (USACE) as referenced in the Engineering Manual for Design of Confined Disposal of Dredged Material (EM 1110-2-5027) dated September 30, 1987. Detailed guidelines including characterization of existing and dredged soils, investigation of groundwater impacts, and stability of the main retaining structures (perimeter dike) were used as a basis for the design of the dewatering site.

2. Input Parameters for Design of the Confinement

- A topographic survey of the disposal area was completed by Prairie Land Surveying on April 7, 2009 (See Attachment 2).
- Area of the disposal site for confinement.
- Soil foundation conditions were sampled and analyzed by Western Pacific Engineering and Survey. Soils are presented by silty sand with gravel. Grain size analysis is in Attachment 3.
- Slurry concentration was obtained based on numerical modeling of the dredge production rate – concentration of 340 grams per liter for 120 cubic yards per hour (Attachment 4).
- Dredge production rate (see above).
- Volume of dredged material to be placed at disposal site during each dredging-dewatering-emptying cycle – 3,000 CY.

3. Confinement Dike Dimensions

Confinement height was determined based on a required volume of dredged material for each dredging-dewatering-emptying cycle. Considering the area of the disposal site, the maximum height of the dike is designed at 8 ft (see Attachment 5 with sketches and calculations).

Confinement dike crest width was designed to accommodate the construction method and minimize the volume of material to be used for construction. The first lift of the dike will be constructed from local material by initial excavation of the disposal site area. Equipment to be used for construction may include a dozer, excavator, scraper, or other equipment. From a perspective of constructability, the minimum crest width of the dike is estimated at approximately 3 ft.

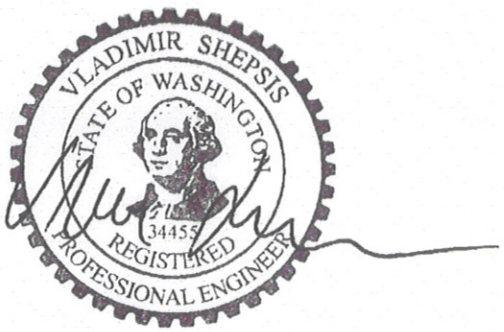
4. Sideslopes

Sideslopes of the confinement dike were designed to provide stability against slope failure or settlement. The design slopes are at 3H:1V. The analysis of slope stability was conducted using standard procedure outline in U.S. Army Corps of Engineers Manual ER 1110-2-1902 and 1110-2-1913. The results of computations are shown in Attachment 4.

5. Construction Methods

The methods chosen to construct the containment and maintenance during use will dictate how well the dewatering area will perform. It is preferred that the coarsest of material be used for construction, especially the foundation of the perimeter dike. Temporary precautions, such as lowering the pumping rate while constructing the perimeter containment, will be followed to ensure no material or water is lost outside of the permitted dewatering or stockpile areas. The area where the dewatering site is located should be sufficiently cleared and grubbed to remove debris that would interfere with the integrity of the containment. Prior to dredging, a thin layer of soil from within the interior footprint of the dewatering area should be scraped and used to construct the first lift of the containment, as well as serve as a ponding area while the containment is being constructed. The soil should be placed in several lifts, with each getting sufficient compaction with an overall height of no more than 8 ft. The limits and footprint of the containment on the plans indicate a typical setup for these types of structures, and may require adjustment to the dike dimensions or construction of additional interior dikes to create multiple "cells" within the dewatering area.

Prepared by:



Vladimir Shepsis, Ph.D., P.E.

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ENGINEERING

110 Main Street, Suite 103
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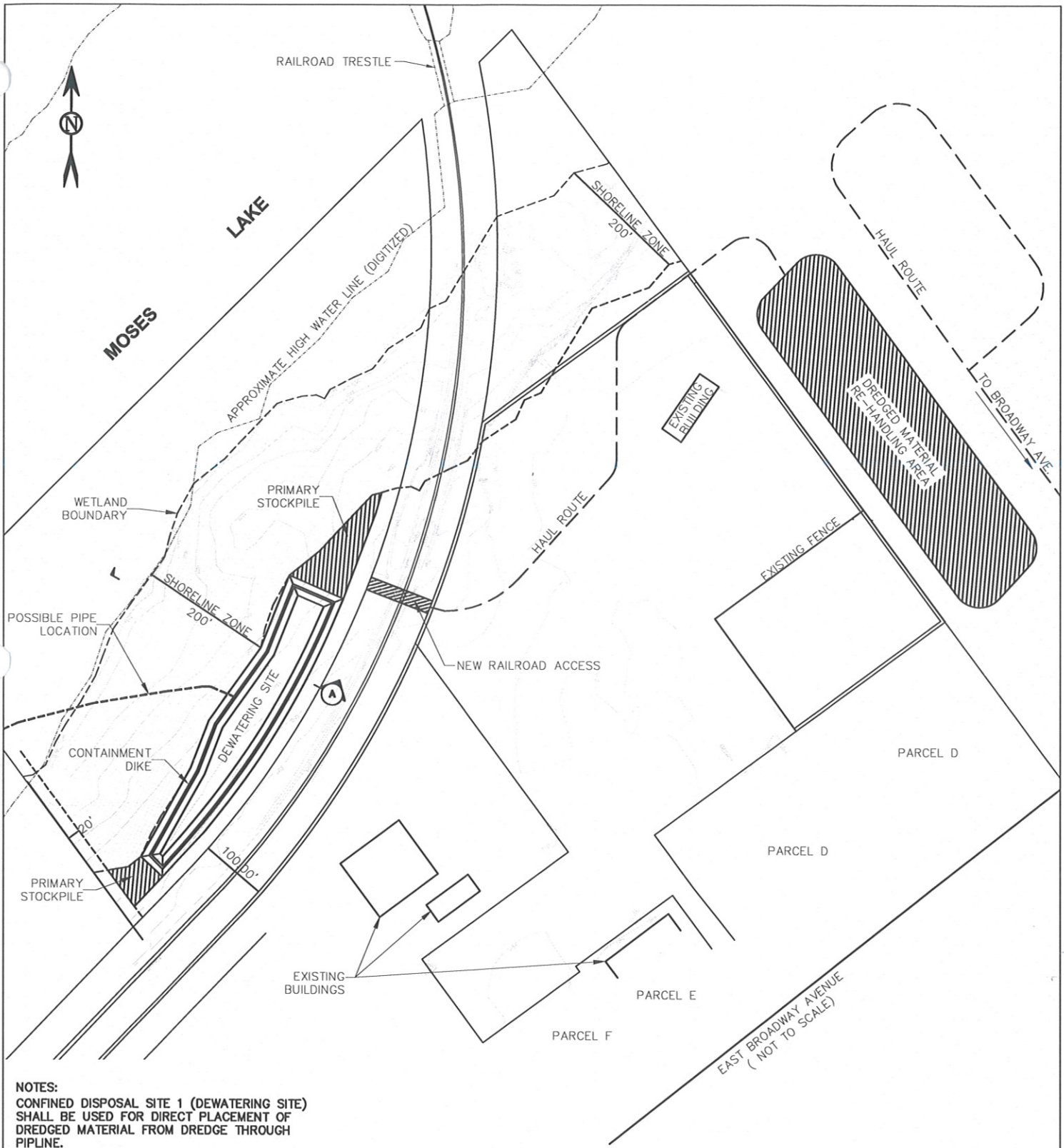
Ph 425 778.6733
Fax 425 977.7416



NOTES:
CONFINED DISPOSAL SITE 1 (DEWATERING SITE) SHALL BE USED FOR DIRECT PLACEMENT OF DREDGED MATERIAL FROM DREDGE THROUGH PIPLINE.

THE PRIMARY AND SECONDARY STOCKPILES SITE SHALL BE USED FOR TEMPORARY STORAGE OF THE DEWATERED DREDGED MATERIAL FROM SITE 1.

0 100 200
SCALE IN FEET

PURPOSE: DREDGING AND CONFINED DISPOSAL
DATUM: LOCAL CONTROL, USBR
ADJACENT PROPERTY OWNERS:

COLUMBIA BASIN RAILROAD CO. INC.
ATT: TODD LEINBACH
YAKIMA, WA 98901

DESERT INVESTMENT CORP.
P.O. BOX 850
MOSES LAKE, WA 98837

CARLOS TYLER
253 KARL RD. NE
MOSES LAKE, WA 98837

MOSES LAKE, WA DREDGED MATERIAL DISPOSAL SITE

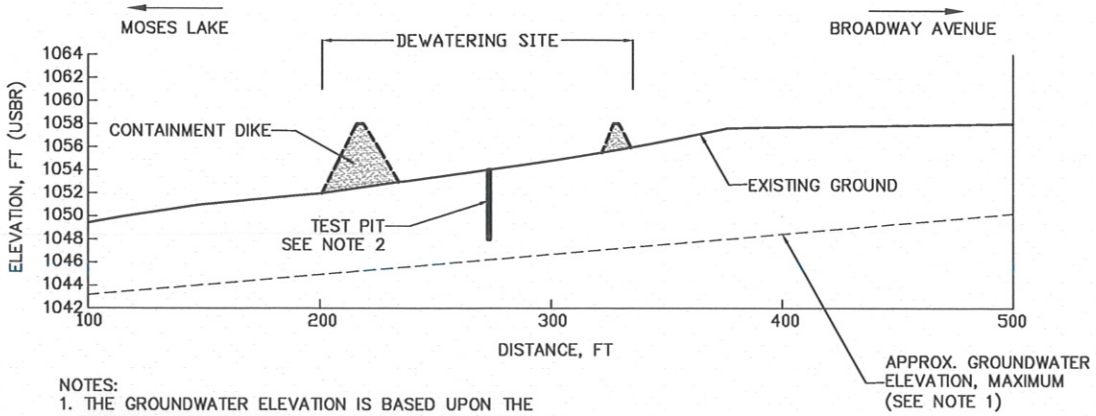
APPLICATION BY: MLIRD

PROPOSED: DREDGING DISPOSAL SITES
IN: MOSES LAKE
AT: MOSES LAKE
COUNTY: CHELAN

DATE: 7/21/09
REVISED: 11/10/10

SHEET 4 OF 5

SECTION A



NOTES:

1. THE GROUNDWATER ELEVATION IS BASED UPON THE INTERPOLATION BETWEEN THE WATER TABLE (OBSERVED ON 01/19/2010) IN A WELL LOCATED ON BROADWAY AVENUE AND THE LEVEL OF MOSES LAKE.
2. ON 10/1/2010, THIS TEST PIT WAS DUG BY THE MLIRD TO A DEPTH OF 6 FFET BELOW THE GROUND SURFACE. NO GROUNDWATER WAS ENCOUNTERED AT ANY POINT DURING THE TEST. THE APPROXIMATE LAKE LEVEL ON THIS DAY WAS 1047.7 FT (USBR)

HORIZ. 0 40 80

VERT. 0 8 16

SCALE IN FEET

PURPOSE: DREDGING AND CONFINED DISPOSAL
DATUM: LOCAL CONTROL, USBR
ADJACENT PROPERTY OWNERS:

COLUMBIA BASIN RAILROAD CO. INC.
ATT: TODD LEINBACH
YAKIMA, WA 98901

DESERT INVESTMENT CORP.
P.O. BOX 850
MOSES LAKE, WA 98837

CARLOS TYLER
253 KARL RD. NE
MOSES LAKE, WA 98837

MOSES LAKE, WA DREDGED MATERIAL DISPOSAL SITE

APPLICATION BY: MLIRD

PROPOSED: DREDGING DISPOSAL SITE
IN: MOSES LAKE
AT: MOSES LAKE
COUNTY: CHELAN

SHEET 5 OF 5 DATE: 1/22/10

wpe
ENGINEERS MATERIAL TESTERS PLANNERS SURVEYORS
WESTERN PACIFIC ENGINEERING AND SURVEY MOSES LAKE ELLENSBURG

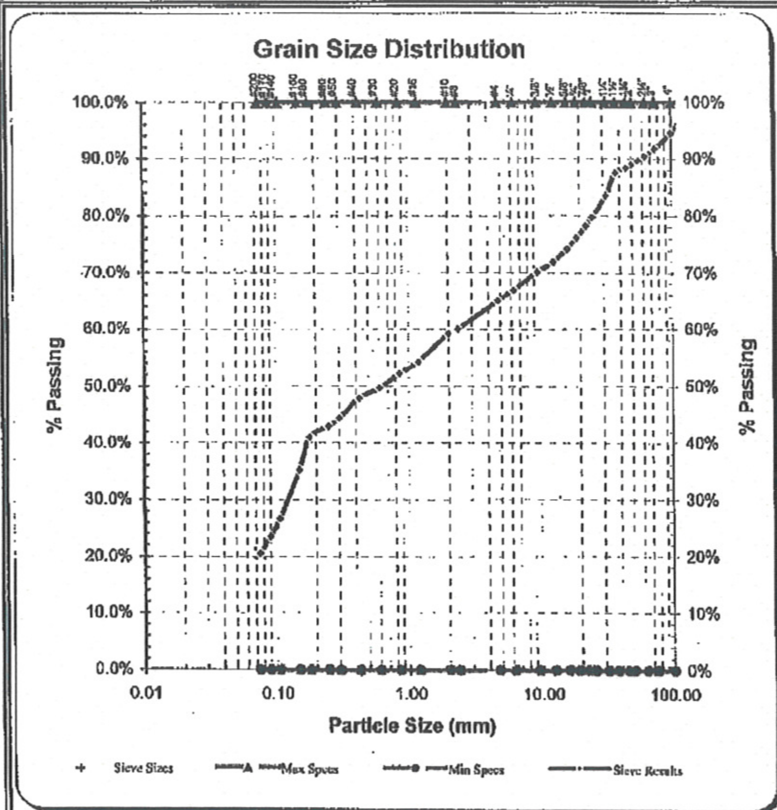
PIONEER WAY PROFESSIONAL CENTER
1328 E. HUNTER PLACE
MOSES LAKE, WASHINGTON 98837
OFFICE: (509) 765-1023
FAX: (509) 765-1298

Date Received: Oct. 1, 2010
Sample #: 169
Project No.: 10611
Source: 0" to 32" in test pit
Specifications
No Specs
Sample Meets Specs ? Yes

ASTM D-2487 Unified Soils Classification System
SM, Silty Sand with Gravel

$D_{(10)}$= 0.037 mm	% Gravel = 35.0%	Coeff. of Curvature, C_C = 0.18
$D_{(30)}$= 0.124 mm	% Sand = 44.5%	Coeff. of Uniformity, C_U = 64.76
$D_{(60)}$= 2.367 mm	% Silt & Clay = 20.5%	Fineness Modulus= 3.66
Liquid Limit= 0.0%	Plastic Limit= 0.0%	Plasticity Index= 0.0%

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
6.00"	150.00	100%	100%	100%	0%
4.00"	100.00		94%	100%	0%
3.00"	75.00		92%	100%	0%
2.50"	63.00		90%	100%	0%
2.00"	50.00		89%	100%	0%
1.75"	45.00		88%	100%	0%
1.50"	37.50	88%	88%	100%	0%
1.25"	31.50	84%	84%	100%	0%
1.00"	25.00		80%	100%	0%
7/8"	22.40		78%	100%	0%
3/4"	19.00	76%	76%	100%	0%
5/8"	16.00		74%	100%	0%
1/2"	12.50	72%	72%	100%	0%
3/8"	9.50	70%	70%	100%	0%
1/4"	6.30	67%	67%	100%	0%
#4	4.75	65%	65%	100%	0%
#8	2.360		60%	100%	0%
#10	2.000	59%	59%	100%	0%
#16	1.180		54%	100%	0%
#20	0.850	52%	52%	100%	0%
#30	0.600		50%	100%	0%
#40	0.425	48%	48%	100%	0%
#50	0.300		44%	100%	0%
#60	0.250		43%	100%	0%
#80	0.180	41%	41%	100%	0%
#100	0.150		35%	100%	0%
#140	0.106		27%	100%	0%
#170	0.090		23%	100%	0%
#200	0.075	20.5%	20.5%	100.0%	0.0%



ENGINEERS MATERIAL TESTERS PLANNERS SURVEYORS
WESTERN PACIFIC ENGINEERING AND SURVEY
MOSES LAKE
ELLENSBURG

PIONEER WAY PROFESSIONAL CENTER
1328 E. HUNTER PLACE
MOSES LAKE, WASHINGTON 98837
OFFICE: (509) 765-1023
FAX: (509) 765-1298

Date Received: Oct. 1, 2010
Sample #: 170
Project No.: 10611
Source: 32" to 44" in test pit
Specifications
No Specs
Sample Meets Specs ? Yes

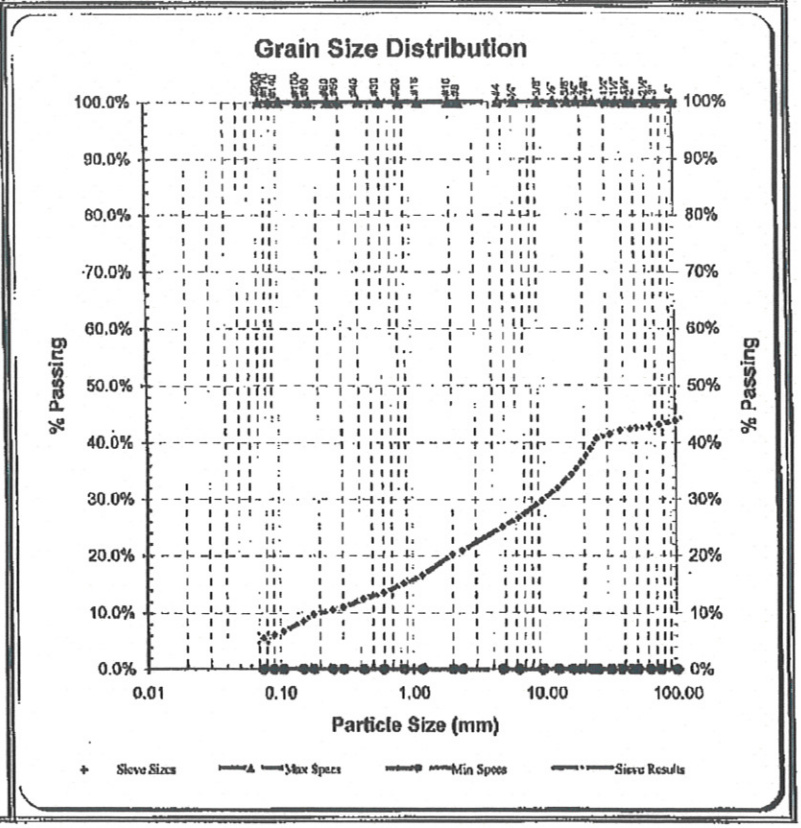
ASTM D-2487 Unified Soils Classification System
GP-GM, Poorly graded Gravel with Silt and Sand

$D_{(10)}$= 0.205 mm
$D_{(30)}$= 9.797 mm
$D_{(60)}$= mm
Liquid Limit= 0.0%

% Gravel = 74.9%
% Sand = 19.6%
% Silt & Clay = 5.5%
Plastic Limit= 0.0%

Coeff. of Curvature, C_C =
Coeff. of Uniformity, C_U =
Fineness Modulus= 7.53
Plasticity Index= 0.0%

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
6.00"	150.00	45%	45%	100%	0%
4.00"	100.00		44%	100%	0%
3.00"	75.00		43%	100%	0%
2.50"	63.00		43%	100%	0%
2.00"	50.00		43%	100%	0%
1.75"	45.00		42%	100%	0%
1.50"	37.50	42%	42%	100%	0%
1.25"	31.50		41%	100%	0%
1.00"	25.00	41%	41%	100%	0%
7/8"	22.40		39%	100%	0%
3/4"	19.00	37%	37%	100%	0%
5/8"	16.00		34%	100%	0%
1/2"	12.50	32%	32%	100%	0%
3/8"	9.50	30%	30%	100%	0%
1/4"	6.30	27%	27%	100%	0%
#4	4.75	25%	25%	100%	0%
#8	2.360		21%	100%	0%
#10	2.000	20%	20%	100%	0%
#16	1.180		17%	100%	0%
#20	0.850	15%	15%	100%	0%
#30	0.600		14%	100%	0%
#40	0.425	12%	12%	100%	0%
#50	0.300		11%	100%	0%
#60	0.250		11%	100%	0%
#80	0.180	10%	10%	100%	0%
#100	0.150		9%	100%	0%
#140	0.106		7%	100%	0%
#170	0.090		6%	100%	0%
#200	0.075	5.5%	5.5%	100.0%	0.0%



ENGINEERS MATERIAL TESTERS PLANNERS SURVEYORS
WESTERN PACIFIC ENGINEERING AND SURVEY
MOSES LAKE
ELLENSBURG

PIONEER WAY PROFESSIONAL CENTER
1320 E. HUNTER PLACE
MOSES LAKE, WASHINGTON 98837
OFFICE: (509) 765-1023
FAX: (509) 765-1298

Date Received: Oct. 1, 2010
Sample #: 171
Project No.: 10611
Source: 44" to bottom of 6' test pit
Specifications
No Specs
Sample Meets Specs ? Yes

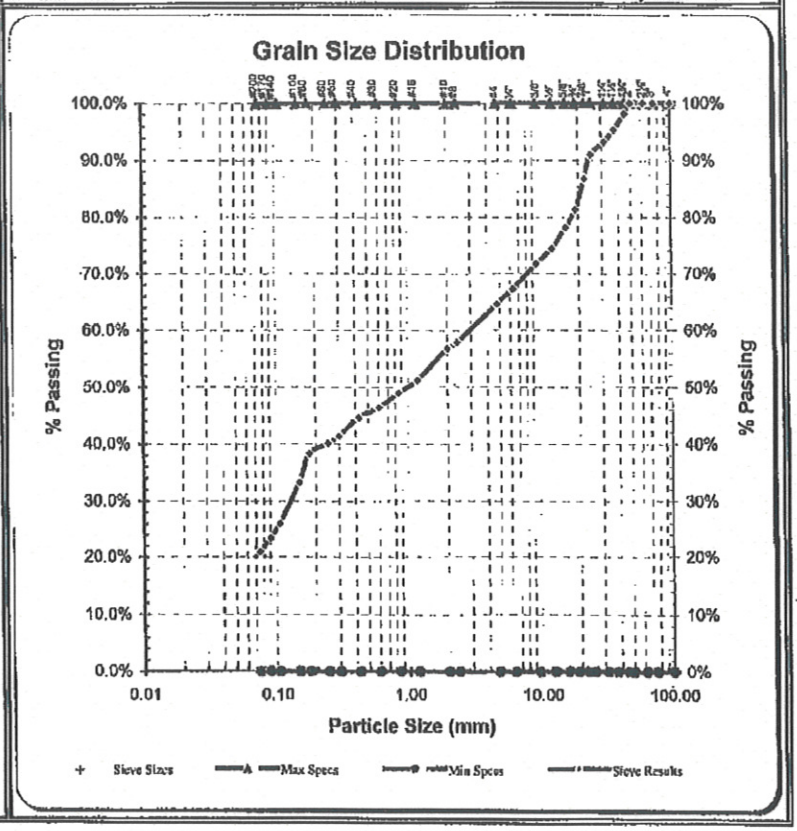
ASTM D-2487 Unified Soils Classification System
SM, Silty Sand with Gravel

$D_{(10)}$= 0.036 mm
$D_{(30)}$= 0.130 mm
$D_{(60)}$= 3.111 mm
Liquid Limit= 0.0%

% Gravel = 35.3%
% Sand = 43.8%
% Silt & Clay = 20.9%
Plastic Limit= 0.0%

Coeff. of Curvature, C_c = 0.15
Coeff. of Uniformity, C_t = 86.70
Fineness Modulus= 3.37
Plasticity Index= 0.0%

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
6.00"	150.00		100%	100%	0%
4.00"	100.00		100%	100%	0%
3.00"	75.00		100%	100%	0%
2.50"	63.00	100%	100%	100%	0%
2.00"	50.00	100%	100%	100%	0%
1.75"	45.00		98%	100%	0%
1.50"	37.50	95%	95%	100%	0%
1.25"	31.50		93%	100%	0%
1.00"	25.00	91%	91%	100%	0%
7/8"	22.40		87%	100%	0%
3/4"	19.00	81%	81%	100%	0%
5/8"	16.00		78%	100%	0%
1/2"	12.50	74%	74%	100%	0%
3/8"	9.50	72%	72%	100%	0%
1/4"	6.30	67%	67%	100%	0%
#4	4.75	65%	65%	100%	0%
#8	2.360		58%	100%	0%
#10	2.000	57%	57%	100%	0%
#16	1.180		51%	100%	0%
#20	0.850	49%	49%	100%	0%
#30	0.600		46%	100%	0%
#40	0.425	45%	45%	100%	0%
#50	0.300		41%	100%	0%
#60	0.250		40%	100%	0%
#80	0.180	38%	38%	100%	0%
#100	0.150		33%	100%	0%
#140	0.106		26%	100%	0%
#170	0.090		23%	100%	0%
#200	0.075	20.9%	20.9%	100.0%	0.0%



Confined Disposal of Dredged Material (EM 1110-2-5027)
Moses Lake 2/17/11
AH

	input	
V(Initial Volume to be dredged, In-situ)	2,300	CY
Gs (Specific Gravity of solids)	2.1	
Dw(Water Density)	1000	g/l
Cd(design Concentration)	340	Assumed
Sd (degree of saturation, percent, 100%)	1	
w (water content of material)	0.82	Assumed
% of sediment is coarse-grained (>No.200 sieve)	20%	
eo (average void ratio in containment area)	5.2	
ei (in-situ void ratio)	1.722	

Vsd (Volume of coarse-grained)	460	CY
Vi (volume of Fine channel sediments)	1,840	CY
Vf (fine grained volume in containment area)	2,336	CY
Vtotal (total volume required in containment)	**2,796**	**CY**

Hdk(max) (maximum height of dike)	8	Ft	Assumed
Hpd (ponding depth)	1		
Hfb (freeboard)	2	ft	Assumed
Hdm (max) (max height material can be placed)	**5**	**ft**	

Ads (design surface area for storage)	15,099	Square Feet	0.35	acre
Available surface area	15,446	Square Feet	0.35	acre
Is surface area adequalte for volume?	**YES**			

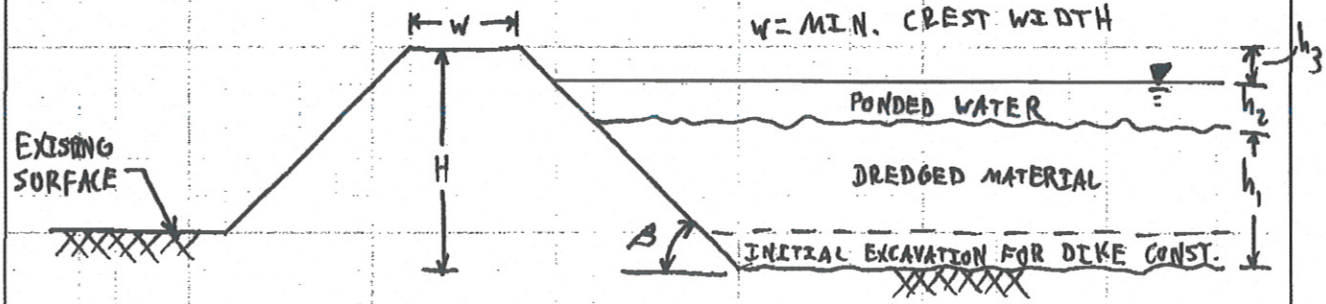
Work	8	hr/day
Hourly production rate(based on 3,000 ft line)	120	CY/hr
Production rate	960	CY/day
Days to complete	**3**	**days**

COAST & HARBOR ENGINEERING www.coastharboreng.com	Edmonds, WA Austin, TX San Francisco, CA North Palm Beach, FL	Engineer: AH	Date: 2/24/11	File No.:
		Checked By:	Date:	Page: 1/2
Client: MLIRD		Project: PARKER HORN DREDGING		
Notes: DEWATERING SITE CONFINEMENT SLOPE STABILITY				

REFERENCES

EM 1110-2-1902 (USACE)
EM 410-2-1913 (USACE)
DREDGING DESIGN AND PRACTICE (ICE)

H = MAX. HEIGHT OF DIKE
h_1 = MAX. HEIGHT OF DREDGED MAT.
h_2 = PONDING DEPTH
h_3 = FREEBOARD
W = MIN. CREST WIDTH

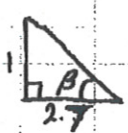


CONTAINMENT DIKE SECTION (N.T.S)

ASSUMPTIONS

- NON-COHESIVE, HOMOGENEOUS SOIL
- NO SURCHARGE
- WATER OUTSIDE SLOPE
- FRICTION ANGLE, $\phi = 45^\circ$
- STILL WATER CONDITION (NO FLOW)

SUBMERGED SIDESLOPE - USE 2.7H:1V SLOPE (ICE)



$\tan\beta = \frac{1}{2.7}$ $\beta = 20.33$

$r_u = \left(\frac{\gamma_w}{\gamma_s}\right)\left(\frac{1}{1+\tan\beta\tan\theta}\right)$ WHERE $\beta = \theta$

$r_u = \left(\frac{62.4\ pcf}{125\ pcf}\right)\left(\frac{1}{1+\tan 20.33\tan 20.33}\right)$

$r_u = 0.44$

COAST & HARBOR ENGINEERING www.coastharboreng.com	Edmonds, WA Austin, TX San Francisco, CA North Palm Beach, FL	Engineer: AH	Date: 2/24/11	File No.:
		Checked By:	Date:	Page: 2/2
Client:		Project:		
Notes:				

$b = \cot\beta$

$b = 2.7$

FROM EM 1110-2-1902, $A = 0.47$

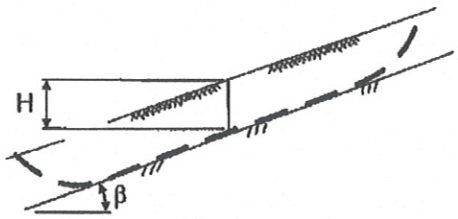
$B = 3$

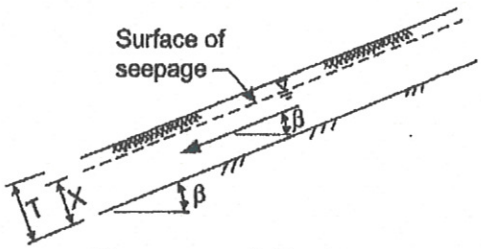
FACTOR OF SAFETY, $F = A\frac{\tan\phi}{\tan\beta} + B\frac{C}{\gamma H}$

$= 0.47\left(\frac{\tan 45^\circ}{\tan 20.33}\right) + 0$ ($C = 0$ FOR NON-COHESIVE SOIL)

$F = 1.3$ MIN. REQUIRED FOS = 1.3 (EM 1110-2-1913)

SUGGESTED MIN SLOPE = 3H:1V (FOS = 1.4)





γ = total unit weight of soil

γ_w = unit weight of water

c' = cohesion intercept

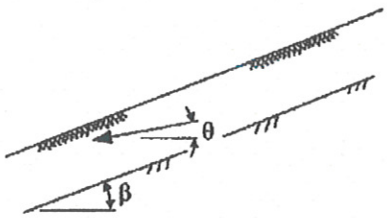
ϕ' = friction angle

r_u = pore pressure ratio = $u/\gamma H$

u = pore pressure at depth H

Seepage parallel to slope

$$r_u = \frac{X}{T}\frac{\gamma_w}{\gamma}\cos^2\beta$$

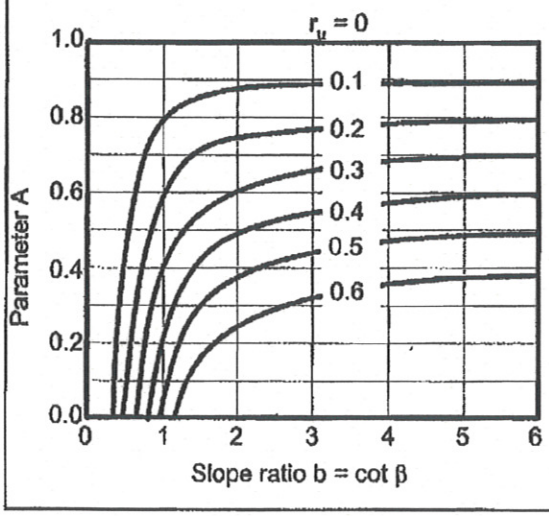


Seepage emerging from slope

$$r_u = \frac{\gamma_w}{\gamma}\frac{1}{1+\tan\beta\tan\theta}$$

Steps:

1. Determine r_u from measured pore pressure or formulas at right.
2. Determine A and B from charts below.
3. Calculate $F = A\dfrac{\tan\phi'}{\tan\beta} + B\dfrac{c'}{\gamma H}$ (c'/γH goes to zero for cohesionless soil)



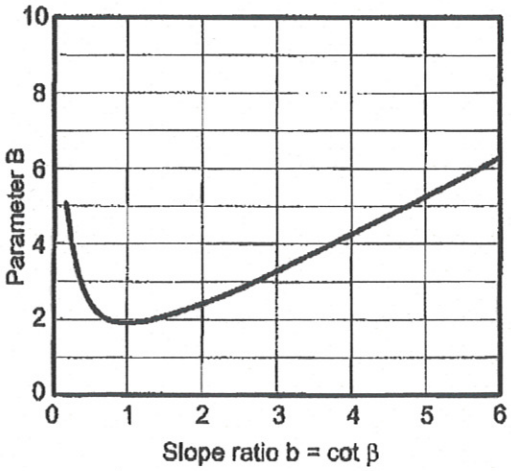


Figure E-7. Slope stability charts for infinite slopes (after Duncan, Buchlanani, and DeWet 1987)

Appendix B – Construction BMPs

Preserving Natural Vegetation (BMP C101)

Alternative BMP not included in the SWMMWW (2005) or SWMMEW (2004)Stabilized Construction Entrance (BMP C105)

Materials on Hand (BMP C150)

Silt Fence (BMP C233)

7.3.1 Source Control BMPs

BMP C101: Preserving Natural Vegetation Purpose

Purpose: The purpose of preserving natural vegetation is to reduce erosion wherever practicable. Limiting site disturbance is the single most effective method for reducing erosion. For example, conifers can hold up to about 50 percent of all rain that falls during a storm. Up to 20-30 percent of this rain may never reach the ground but is taken up by the tree or evaporates. Another benefit is that the rain held in the tree can be released slowly to the ground after the storm.

Conditions of Use:

- Natural vegetation should be preserved on steep slopes, near perennial and intermittent watercourses or swales, and on building sites in wooded areas.
- As required by jurisdiction.

Design and Installation Specifications: Natural vegetation can be preserved in natural clumps or as individual trees, shrubs and vines.

The preservation of individual plants is more difficult because heavy equipment is generally used to remove unwanted vegetation. The points to remember when attempting to save individual plants are:

- Is the plant worth saving? Consider the location, species, size, age, vigor, and the work involved. Local governments may also have ordinances to save natural vegetation and trees.
- Fence or clearly mark areas around trees that are to be saved. It is preferable to keep ground disturbance away from the trees at least as far out as the dripline.

Plants need protection from three kinds of injuries:

- Construction Equipment - This injury can be above or below the ground level. Damage results from scarring, cutting of roots, and compaction of the soil. Placing a fenced buffer zone around plants to be saved prior to construction can prevent construction equipment injuries.
- Grade Changes - Changing the natural ground level will alter grades, which affects the plant's ability to obtain the necessary air, water, and minerals. Minor fills usually do not cause problems although sensitivity between species does vary and should be checked. Trees can tolerate fill of 6 inches or less. For shrubs and other plants, the fill should be less.

  When there are major changes in grade, it may become necessary to supply air to the roots of plants. This can be done by placing a layer of gravel and a tile system over the roots before the fill is made. A tile system protects a tree from a raised grade. The tile system should be laid out on the original grade leading from a dry well around the tree trunk. The system should then be covered with small stones to allow air to circulate over the root area.

  Lowering the natural ground level can seriously damage trees and shrubs.

The highest percentage of the plant roots are in the upper 12 inches of the soil and cuts of only 2-3 inches can cause serious injury. To protect the roots it may be necessary to terrace the immediate area around the plants to be saved. If roots are exposed, construction of retaining walls may be needed to keep the soil in place. Plants can also be preserved by leaving them on an undisturbed, gently sloping mound. To increase the chances for survival, it is best to limit grade changes and other soil disturbances to areas outside the dripline of the plant.

- Excavations - Protect trees and other plants when excavating for drainfields and power, water, and sewer lines. Where possible, the trenches should be routed around trees and large shrubs. When this is not possible, it is best to tunnel under them. This can be done with hand tools or with power augers. If it is not possible to route the trench around plants to be saved, then the following should be observed:
  - Cut as few roots as possible. When you have to cut, cut clean. Paint cut root ends with a wood dressing like asphalt base paint.
  - Backfill the trench as soon as possible.
  - Tunnel beneath root systems as close to the center of the main trunk to preserve most of the important feeder roots.

Some problems that can be encountered are:

- In general, most trees native to Eastern Washington do not readily adjust to major changes in environment and special care should be taken to protect these trees.
- The danger of windthrow increases where dense stands of coniferous trees have been thinned.
- Cottonwoods, maples, and willows have water-seeking roots. These can cause trouble in sewer lines and infiltration fields. On the other hand, they thrive in high moisture conditions that other trees would not.
- Thinning operations in pure or mixed stands of Grand fir, Pacific silver fir, Noble fir, Sitka spruce, Western red cedar, Western hemlock, Pacific dogwood, and Red alder can cause serious disease problems. Disease can become established through damaged limbs, trunks, roots, and freshly cut stumps. Diseased and weakened trees are also susceptible to insect attack.

Maintenance Standards:

- Inspect flagged and/or fenced areas regularly to make sure flagging or fencing has not been removed or damaged. If the flagging or fencing has been damaged or visibility reduced, it shall be repaired or replaced immediately and visibility restored.
- If tree roots have been exposed or injured, "prune" cleanly with an appropriate pruning saw or loppers directly above the damaged roots and recover with native soils.

BMP C105: Stabilized Construction Entrance

Purpose: Construction entrances are stabilized to reduce the amount of sediment transported onto paved roads by vehicles or equipment by constructing a stabilized pad of quarry spalls at entrances to construction sites.

Conditions of Use:

- Construction entrances shall be stabilized wherever traffic will be leaving a construction site and traveling on paved roads or other paved areas within 1,000 feet of the site.
- On large commercial, highway, and road projects, the designer should include enough extra materials in the contract to allow for additional stabilized entrances not shown in the initial Construction SWPPP. It is difficult to determine exactly where access to these projects will take place; additional materials will enable the contractor to install them where needed.

Design and Installation:

- See Figure 7.3.2 for details.
- The surface material shall be 4"-8" quarry spalls. Smaller crushed rock such as base course may be appropriate in some situations but, since it is more likely to be tracked off-site, must be approved by the local jurisdiction.
- A separation geotextile shall be placed under the spalls to prevent fine sediment from pumping up into the rock pad. The geotextile shall meet the following standards:

Grab Tensile Strength (ASTM D4751)	200 psi min.
Grab Tensile Elongation (ASTM D4632)	30% max.
Mullen Burst Strength (ASTM D3786-80a)	400 psi min.
AOS (ASTM D4751)	20-45 (U.S. standard sieve size)

- If site conditions do not warrant the use of geotextile, it is not required.

Maintenance Standards: Quarry spalls (or hog fuel) shall be added if the pad is no longer in accordance with the specifications.

- If the entrance is not preventing sediment from being tracked onto pavement, then alternative measures to keep the streets free of sediment shall be used. This may include street sweeping, an increase in the dimensions of the entrance, or the installation of a wheel wash.
- Any sediment that is tracked onto pavement shall be removed by shoveling or street sweeping. The sediment collected by sweeping shall be removed or stabilized on site. The pavement shall not be cleaned by washing down the street, except when sweeping is ineffective and there is a threat to public safety. If it is necessary to wash the streets, the construction of a small sump shall be considered. The sediment would then be washed into the sump where it can be controlled.

- Any quarry spalls that are loosened from the pad, which end up on the roadway shall be removed immediately.
- If vehicles are entering or exiting the site at points other than the construction entrance(s), fencing (see BMPs C103 and C104) shall be installed to control traffic.
- Upon project completion and site stabilization, all construction accesses intended as permanent access for maintenance shall be permanently stabilized.

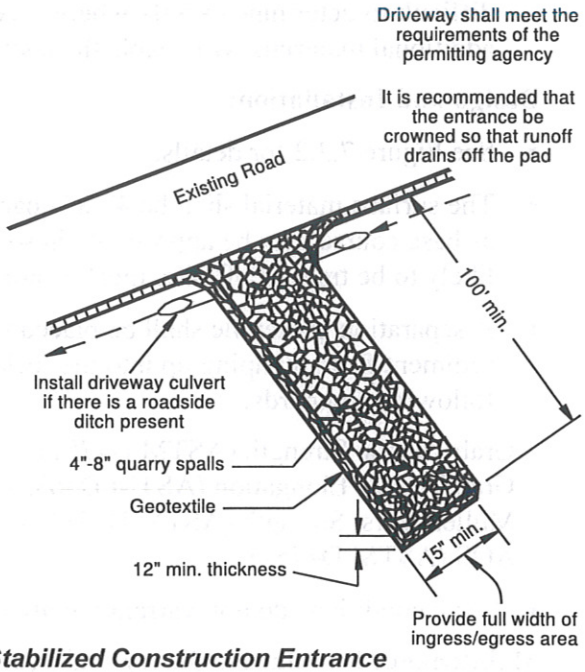


Figure 7.3.2 - Stabilized Construction Entrance

BMP C150: Materials On Hand

Purpose: Quantities of erosion prevention and sediment control materials can be kept on the project site at all times to be used for emergency situations such as unexpected heavy summer rains. Having these materials on-site reduces the time needed to implement BMPs when inspections indicate that existing BMPs are not meeting the Construction SWPPP requirements. In addition, contractors can save money by buying some materials in bulk and storing them at their office or yard.

Conditions for Use:

- Construction projects of any size or type can benefit from having materials on hand. A small commercial development project could have a roll of plastic and some gravel available for immediate protection of bare soil and temporary berm construction. A large earthwork project, such as highway construction, might have several tons of straw, several rolls of plastic, flexible pipe, sandbags, geotextile fabric and steel "T" posts.
- Materials are stockpiled and readily available before any site clearing, grubbing, or earthwork begins. A large contractor or developer could keep a stockpile of materials that are available to be used on several projects.
- If storage space at the project site is at a premium, the contractor could maintain the materials at their office or yard. The office or yard must be less than an hour from the project site.

Design and Installation Specifications: Depending on project type, size, complexity, and length, materials and quantities will vary. A good minimum that will cover numerous situations includes:

Material	Measure	Quantity
Clear Plastic, 6 mil	100 foot roll	1-2
Drainpipe, 6 or 8 inch diameter	25 foot section	4-6
Sandbags, filled	each	25-50
Straw Bales for mulching,	approx. 50# each	10-20
Quarry Spalls	ton	2-4
Washed Gravel	cubic yard	2-4
Geotextile Fabric	100 foot roll	1-2
Catch Basin Inserts	each	2-4
Steel "T" Posts	each	12-24

Maintenance Standards:

- All materials with the exception of the quarry spalls, steel "T" posts, and gravel should be kept covered and out of both sun and rain.
- Re-stock materials used as needed.

BMP C233: Silt Fence

Purpose: Use of a silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow. See Figure 7.3.20 for details on silt fence construction.

Conditions of Use:

- Silt fence may be used downslope of all disturbed areas. Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Any concentrated flows must be conveyed through the drainage system to a sediment pond. The only circumstance in which overland flow can be treated solely by a silt fence, rather than by a sediment pond, is when the area draining to the fence is one acre or less and flow rates are less than 0.5 cfs.
- Silt fences should not be constructed in streams or used in V-shaped ditches. They are not an adequate method of silt control for anything deeper than sheet or overland flow.

Design and Installation Specifications: Drainage area of 1 acre or less or in combination with sediment basin in a larger site.

- Maximum slope steepness (normal (perpendicular) to fence line) 1:1.
- Maximum sheet or overland flow path length to the fence of 100 feet.
- No flows greater than 0.5 cfs.
- The geotextile used shall meet the following standards. All geotextile properties listed below are minimum average roll values (i.e., the test result for any sampled roll in a lot shall meet or exceed the values shown in Table 7.3.10).

Table 7.3.10 Geotextile Standards

Polymeric Mesh AOS (ASTM D4751)	0.60 mm maximum for slit film wovens (#30 sieve). 0.30 mm maximum for all other geotextile types (#50 sieve). 0.15 mm minimum for all fabric types (#100 sieve).
Water Permittivity (ASTM D4491)	0.02 sec^{-1} minimum
Grab Tensile Strength (ASTM D4632)	180 lbs. Minimum for extra strength fabric. 100 lbs minimum for standard strength fabric.
Grab Tensile Strength (ASTM D4632)	30% maximum
Ultraviolet Resistance (ASTM D4355)	70% minimum

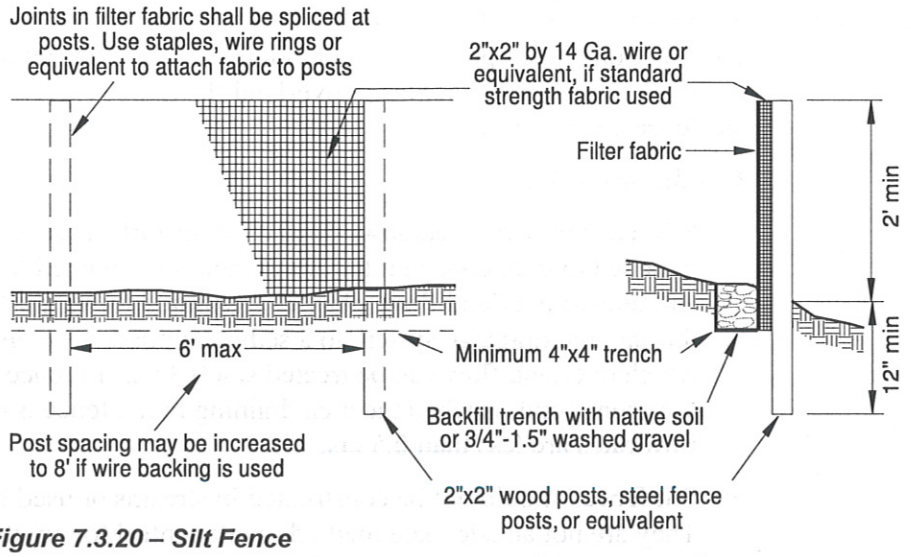


Figure 7.3.20 – Silt Fence

Design and Installation Specifications:

- Standard strength fabrics shall be supported with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the fabric. Silt fence materials are available that have synthetic mesh backing attached.
- Filter fabric material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0°F. to 120°F.
- 100 percent biodegradable silt fence is available that is strong, long lasting, and can be left in place after the project is completed, if permitted by local regulations.
- The contractor shall install and maintain temporary silt fences at the locations shown in the Plans. The silt fences shall be constructed in the areas of clearing, grading, or drainage prior to starting those activities. A silt fence shall not be considered temporary if the silt fence must function beyond the life of the contract. The silt fence shall prevent soil carried by runoff water from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence.
- The minimum height of the top of silt fence shall be 2 feet and the maximum height shall be 2½ feet above the original ground surface.
- The geotextile shall be sewn together at the point of manufacture, or at an approved location as determined by the Engineer, to form geotextile lengths as required. All sewn seams shall be located at a support post. Alternatively, two sections of silt fence can be overlapped, provided the Contractor can

demonstrate, to the satisfaction of the Engineer, that the overlap is long enough and that the adjacent fence sections are close enough together to prevent silt laden water from escaping through the fence at the overlap.

- The geotextile shall be attached on the up-slope side of the posts and support system with staples, wire, or in accordance with the manufacturer's recommendations. The geotextile shall be attached to the posts in a manner that reduces the potential for geotextile tearing at the staples, wire, or other connection device. Silt fence back-up support for the geotextile in the form of a wire or plastic mesh is dependent on the properties of the geotextile selected for use. If wire or plastic back-up mesh is used, the mesh shall be fastened securely to the up-slope of the posts with the geotextile being up-slope of the mesh back-up support.
- The geotextile at the bottom of the fence shall be buried in a trench to a minimum depth of 4 inches below the ground surface. The trench shall be backfilled and the soil tamped in place over the buried portion of the geotextile, such that no flow can pass beneath the fence and scouring can not occur. When wire or polymeric back-up support mesh is used, the wire or polymeric mesh shall extend into the trench a minimum of 3 inches.
- The fence posts shall be placed or driven a minimum of 18 inches. A minimum depth of 12 inches is allowed if topsoil or other soft subgrade soil is not present and a minimum depth of 18 inches cannot be reached. Fence post depths shall be increased by 6 inches if the fence is located on slopes of 3:1 or steeper and the slope is perpendicular to the fence. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.
- Silt fences shall be located on contour as much as possible, except at the ends of the fence, where the fence shall be turned uphill such that the silt fence captures the runoff water and prevents water from flowing around the end of the fence.
- If the fence must cross contours, with the exception of the ends of the fence, gravel check dams placed perpendicular to the back of the fence shall be used to minimize concentrated flow and erosion along the back of the fence. The gravel check dams shall be approximately 1-foot deep at the back of the fence. It shall be continued perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface behind the fence. The gravel check dams shall consist of crushed surfacing base course, gravel backfill for walls, or shoulder ballast. The gravel check dams shall be located every 10 feet along the fence where the fence must cross contours. The slope of the fence line where contours must be crossed shall not be steeper than 3:1.
- Wood, steel or equivalent posts shall be used. Wood posts shall have minimum dimensions of 2 inches by 2 inches by 3 feet minimum length, and shall be free of defects such as knots, splits, or gouges. Steel posts shall consist of either size No. 6 rebar or larger, ASTM A 120 steel pipe with a

minimum diameter of 1-inch, U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft. or other steel posts having equivalent strength and bending resistance to the post sizes listed. The spacing of the support posts shall be a maximum of 6 feet.

- Fence back-up support, if used, shall consist of steel wire with a maximum mesh spacing of 2 inches, or a prefabricated polymeric mesh. The strength of the wire or polymeric mesh shall be equivalent to or greater than 180 lbs. grab tensile strength. The polymeric mesh must be as resistant to ultraviolet radiation as the geotextile it supports.
- Silt fence installation using the slicing method specification details follow. Refer to Figure 7.3.21 for slicing method details.
- The base of both end posts must be at least 2 to 4 inches above the top of the silt fence fabric on the middle posts for ditch checks to drain properly. Use a hand level or string level, if necessary, to mark base points before installation.
- Install posts 3 to 4 feet apart in critical retention areas and 6 to 7 feet apart in standard applications.
- Install posts 24 inches deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
- Install posts with the nipples facing away from the silt fence fabric.
- Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. In addition, each tie should be positioned to hang on a post nipple when tightening to prevent sagging.
- Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
- No more than 24 inches of a 36-inch fabric is allowed above ground level.
- The rope lock system must be used in all ditch check applications.
- The installation should be checked and corrected for any deviation before compaction. Use a flat-bladed shovel to tuck fabric deeper into the ground if necessary.
- Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips.

Maintenance Standards:

- Any damage shall be repaired immediately.
- If concentrated flows are evident uphill of the fence, they must be intercepted and conveyed to a sediment pond.

- It is important to check the uphill side of the fence for signs of the fence clogging and acting as a barrier to flow and then causing channelization of flows parallel to the fence. If this occurs, replace the fence or remove the trapped sediment.
- Sediment deposits shall either be removed when the deposit reaches approximately one-third the height of the silt fence, or a second silt fence shall be installed.
- If the filter fabric (geotextile) has deteriorated due to ultraviolet breakdown, it shall be replaced.

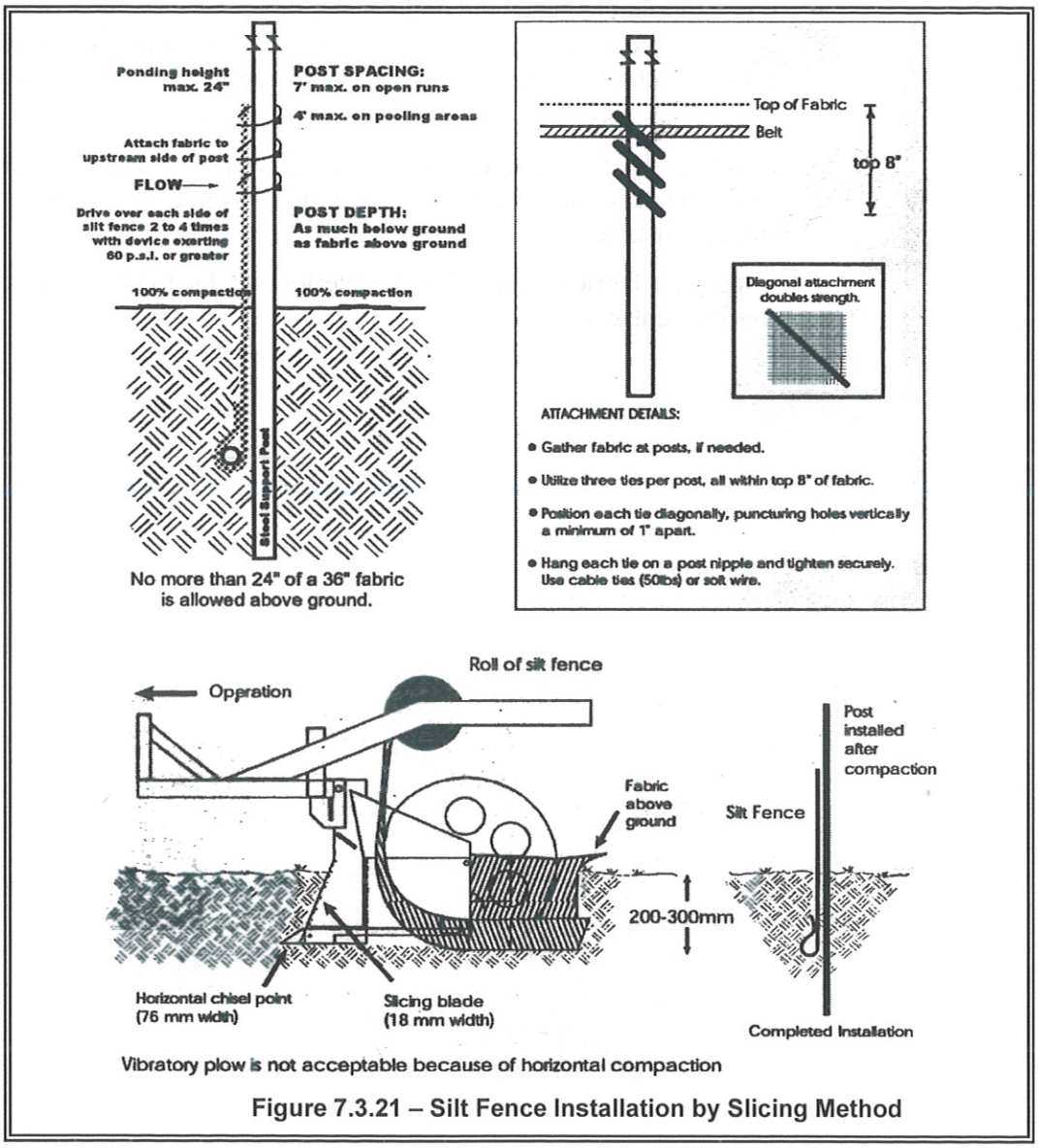


Figure 7.3.21 – Silt Fence Installation by Slicing Method

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.

Sediment Trap (BMP C240)

Temporary Sediment Pond (BMP C241)

Outlet Protection (BMP C209)

BMP C240: Sediment Trap

Purpose: A sediment trap is a small temporary ponding area with a gravel outlet used to collect and store sediment from sites cleared and/or graded during construction. Sediment traps, along with other perimeter controls, shall be installed before any land disturbance takes place in the drainage area.

Conditions of Use: Prior to leaving a construction site, stormwater runoff must pass through a sediment pond or trap or other appropriate sediment removal best management practice. Non-engineered sediment traps may be used on-site prior to an engineered sediment trap or sediment pond to provide additional sediment removal capacity.

It is intended for use on sites where the tributary drainage area is less than 3 acres, with no unusual drainage features, and a projected build-out time of six months or less. The sediment trap is a temporary measure (with a design life of approximately 6 months) and shall be maintained until the site area is permanently protected against erosion by vegetation and/or structures.

Sediment traps and ponds are only effective in removing sediment down to about the medium silt size fraction. Runoff with sediment of finer grades (fine silt and clay) will pass through untreated, emphasizing the need to control erosion to the maximum extent first.

Whenever possible, sediment-laden water shall be discharged into onsite, relatively level, vegetated areas (see BMP C234 – Vegetated Strip). This is the only way to effectively remove fine particles from runoff unless chemical treatment or filtration is used. This can be particularly useful after initial treatment in a sediment trap or pond. The areas of release must be evaluated on a site-by-site basis in order to determine appropriate locations for and methods of releasing runoff. Vegetated wetlands shall not be used for this purpose. Frequently, it may be possible to pump water from the collection point at the downhill end of the site to an upslope vegetated area. Pumping shall only augment the treatment system, not replace it, because of the possibility of pump failure or runoff volume in excess of pump capacity.

All projects that are constructing permanent facilities for runoff quantity control should use the rough-graded or final-graded permanent facilities for traps and ponds. This includes combined facilities and infiltration facilities. When permanent facilities are used as temporary sedimentation facilities, the surface area requirement of a sediment trap or pond must be met. If the surface area requirements are larger than the surface area of the permanent facility, then the trap or pond shall be enlarged to comply with the surface area requirement. The permanent pond shall also be divided into two cells as required for sediment ponds.

Either a permanent control structure or the temporary control structure (described in BMP C241, Temporary Sediment Pond) can be used. If a permanent control structure is used, it may be advisable to partially restrict the lower orifice with gravel to increase residence time while still allowing dewatering of the pond. A shut-off valve may be added to the control structure to allow complete retention

of stormwater in emergency situations. In this case, an emergency overflow weir must be added.

A skimmer may be used for the sediment trap outlet if approved by the Jurisdiction.

Design and Installation Specifications:

See Figures 7.3.23 and 7.3.24 for details.

If permanent runoff control facilities are part of the project, they should be used for sediment retention.

To determine the sediment trap geometry, first calculate the design surface area (SA) of the trap, measured at the invert of the weir. Use the following equation:

$SA = FS(Q_2/Vs)$

Where,

Q_2 = Design inflow based on the peak discharge from the developed 2-year runoff event from the contributing drainage area as computed in the hydrologic analysis. The 10-year peak flow shall be used if the project size, expected timing and duration of construction, or downstream conditions warrant a higher level of protection. If no hydrologic analysis is required, the Rational Method may be used.

V_s = The settling velocity of the soil particle of interest. The 0.02 mm (medium silt) particle with an assumed density of 2.65 g/cm^3 has been selected as the particle of interest and has a settling velocity (Vs) of 0.00096 ft/sec.

FS = A safety factor of 2 to account for non-ideal settling.

Therefore, the equation for computing surface area becomes:

$SA = 2 \times Q_2/0.00096$ or 2080 square feet per cfs of inflow

Note: *Even if permanent facilities are used, they must still have a surface area that is at least as large as that derived from the above formula. If they do not, the pond must be enlarged.*

- To aid in determining sediment depth, all sediment traps shall have a staff gauge with a prominent mark 1-foot above the bottom of the trap.
- Sediment traps may not be feasible on utility projects due to the limited work space or the short-term nature of the work. Portable tanks may be used in place of sediment traps for utility projects.

Maintenance Standards:

- Sediment shall be removed from the trap when it reaches 1-foot in depth.
- Any damage to the pond embankments or slopes shall be repaired.

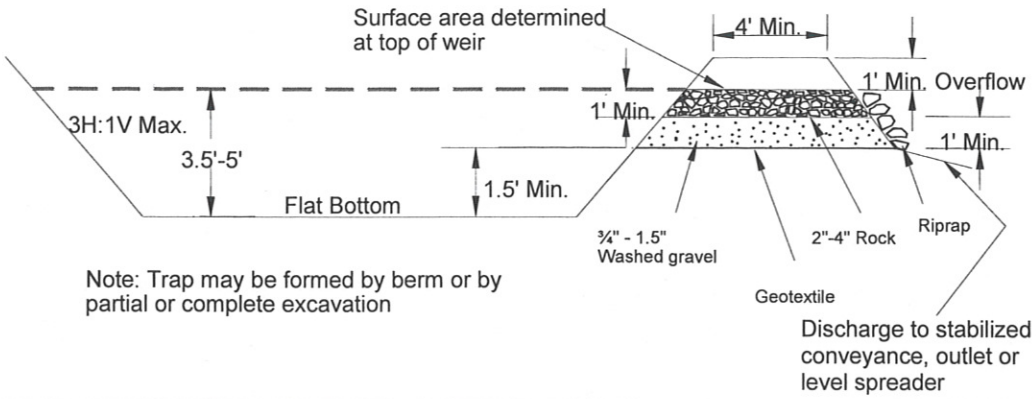


Figure 7.3.23 Cross-Section of Sediment Trap

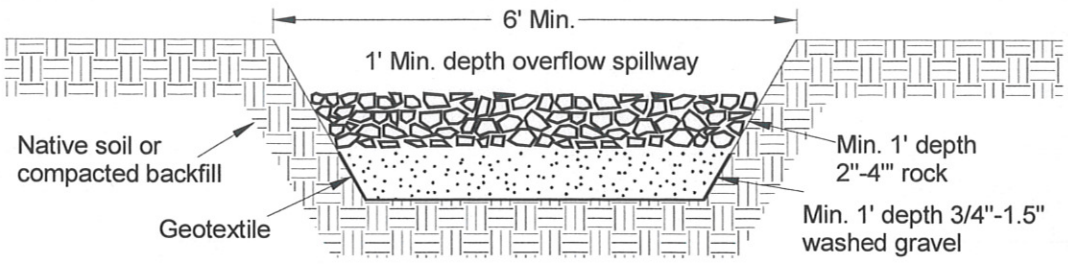


Figure 7.3.24 Sediment Trap Outlet

BMP C241: Temporary Sediment Pond

Purpose: Sediment ponds remove sediment from runoff originating from disturbed areas of the site. Sediment ponds are typically designed to remove sediment no smaller than medium silt (0.02 mm). Consequently, they usually reduce turbidity only slightly.

Conditions of Use

Conditions of Use: Prior to leaving a construction site, stormwater runoff must pass through a sediment pond or other appropriate sediment removal best management practice.

A sediment pond shall be used where the contributing drainage area is 3 acres or more. Ponds must be used in conjunction with erosion control practices to reduce the amount of sediment flowing into the basin.

Design and Installation Specifications: Sediment basins should be installed only on sites where failure of the structure would not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities. Also, sediment traps and ponds are attractive to children and can be very dangerous. Compliance with local ordinances regarding health and safety must be addressed. If fencing of the pond is required, the type of fence and its location shall be shown on the ESC plan.

- Structures having a maximum storage capacity at the top of the dam of 10 acre-ft (435,600 ft3) or more are subject to the Washington Dam Safety Regulations (Chapter 173-175 WAC).
- See Figures 7.3.25, 7.3.26, and 7.3.27 for details.
- If permanent runoff control facilities are part of the project, they should be used for sediment retention. The surface area requirements of the sediment basin must be met. This may require enlarging the permanent basin to comply with the surface area requirements. If a permanent control structure is used, it may be advisable to partially restrict the lower orifice with gravel to increase residence time while still allowing dewatering of the basin.
- Use of infiltration facilities for sedimentation basins during construction tends to clog the soils and reduce their capacity to infiltrate. If infiltration facilities are to be used, the sides and bottom of the facility should only be rough excavated to a minimum of 2 feet above final grade. Final grading of the infiltration facility shall occur only when all contributing drainage areas are fully stabilized. The infiltration pretreatment facility should be fully constructed and used with the sedimentation basin to help prevent clogging.

Determining Pond Geometry

The storage capacity of the basin may be sized by obtaining the discharge from the hydrologic calculations of the peak flow for the 2-year runoff event (Q2). The 10-year peak flow should be used if the project size, expected timing and duration of construction, or downstream conditions warrant a higher level of protection. If no hydrologic analysis is required, the Rational Method may be used.

Alternatively, the sediment basin, as measured from the bottom of the basin to the

principal outlet, shall have at least a capacity equivalent to 3,600 cubic feet of storage per acre draining into the sediment basin.

Determine the required surface area at the top of the riser pipe with the equation:

$SA = 2 \times Q_2/0.00096$, or 2080 square feet per cfs of inflow

See BMP C240 for more information on the derivation of the surface area calculation. The basic geometry of the pond can now be determined using the following design criteria:

- Required surface area SA (from Step 2 above) at top of riser.
- Minimum 3.5-foot depth from top of riser to bottom of pond.
- Maximum 3:1 interior side slopes and maximum 2:1 exterior slopes. The interior slopes can be increased to a maximum of 2:1 if fencing is provided at or above the maximum water surface.
- One foot of freeboard between the top of the riser and the crest of the emergency spillway.
- Flat bottom.
- Minimum 1-foot deep spillway.
- The length of the basin, as determined by measuring the distance between the inlet and the outlet, shall be between 3 and 6 times the width of the basin.

Sizing of Discharge Mechanisms

The outlet for the basin consists of a combination of principal and emergency spillways. These outlets must pass the peak runoff expected from the contributing drainage area for a 100-year storm. If, due to site conditions and basin geometry, a separate emergency spill-way is not feasible, the principal spillway must pass the entire peak runoff expected from the 100-year storm. However, an attempt to provide a separate emergency spillway should always be made. The runoff calculations should be based on the site conditions during construction. The flow through the dewatering orifice cannot be utilized when calculating the 100-year storm elevation because of its potential to become clogged; therefore, available spillway storage must begin at the principal spillway riser crest.

The principal spillway designed by the procedures contained in this standard will result in some reduction in the peak rate of runoff. However, the riser outlet design will not adequately control the basin discharge to the predevelopment discharge limitations. However, if the basin for a permanent stormwater detention pond is used for a temporary sedimentation basin, the control structure for the permanent pond can be used to maintain predevelopment discharge limitations. The size of the basin, the expected life of the construction project, the anticipated downstream effects and the anticipated weather conditions during construction, should be considered to determine the need for additional discharge control. See Figure 7.3.28 for riser inflow curves.

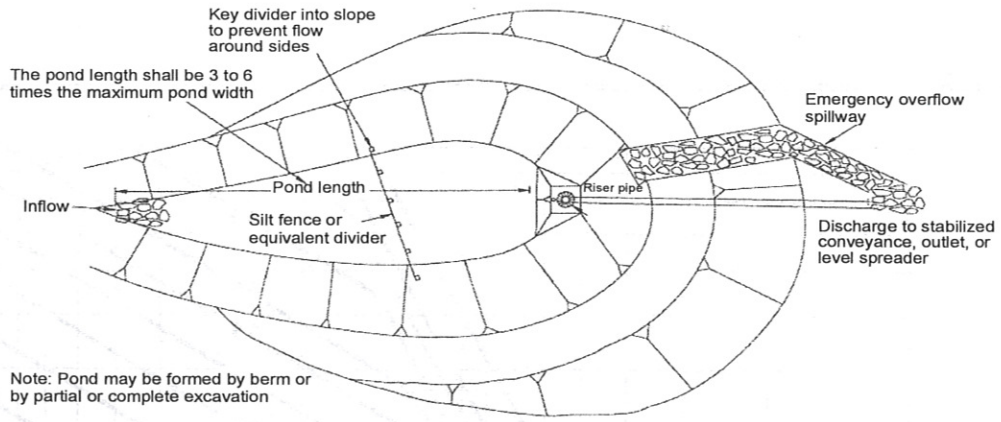


Figure 7.3.25 – Sediment Pond Plan View

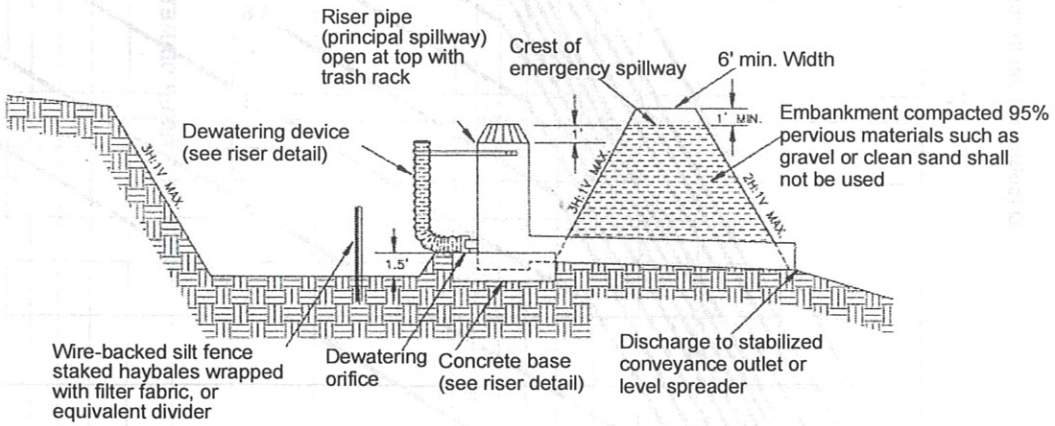


Figure 7.3.26 - Sediment Pond Cross Section

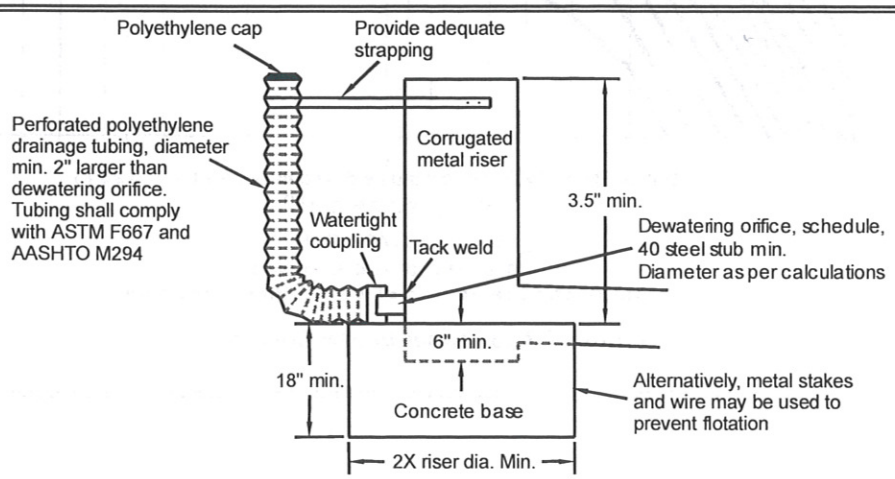


Figure 7.3.27 – Sediment Pond Riser Detail

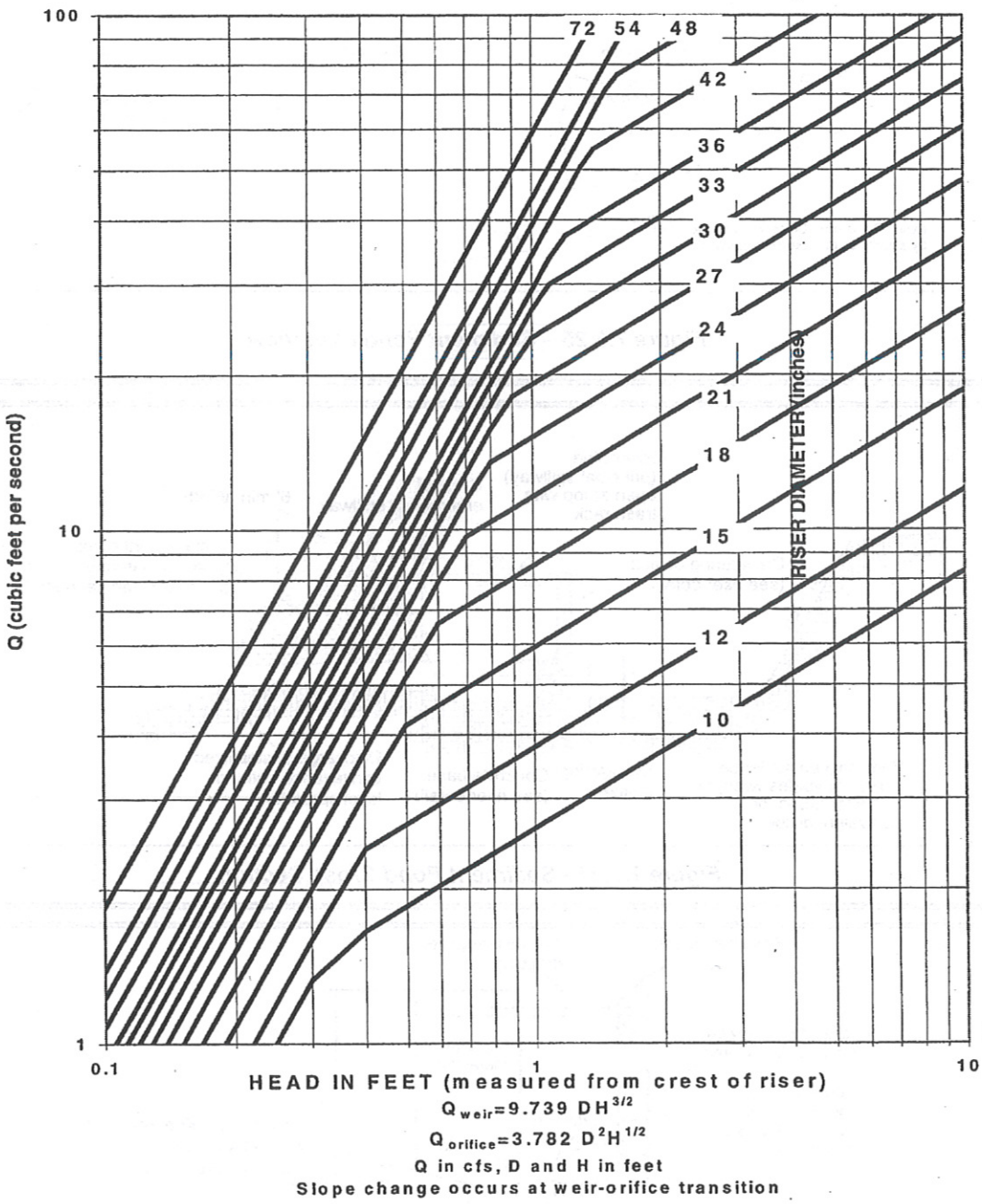


Figure 7.3.28 - Riser Inflow Curves

Principal Spillway: Determine the required diameter for the principal spillway (riser pipe). The diameter shall be the minimum necessary to pass the pre-developed 10-year peak flow (Q10). Use Figure 4.28 to determine this diameter (h = 1-foot). Note: A permanent control structure may be used instead of a temporary riser.

Emergency Overflow Spillway: Determine the required size and design of the emergency overflow spillway for the developed 100-year peak flow using the method contained in Chapter 4.

Dewatering Orifice: Determine the size of the dewatering orifice(s) (minimum 1-inch diameter) using a modified version of the discharge equation for a vertical orifice and a basic equation for the area of a circular orifice. Determine the required area of the orifice with the following equation:

$$A_o = \frac{A_s(2h)^{0.5}}{0.6\text{x}3600Tg^{0.5}}$$

where Ao = orifice area (square feet)

As = pond surface area (square feet)

h = head of water above orifice (height of riser in feet)

T = dewatering time (24 hours)

g = acceleration of gravity (32.2 feet/second2)

Convert the required surface area to the required diameter D of the orifice:

The vertical, perforated tubing connected to the dewatering orifice must be at least 2 inches larger in diameter than the orifice to improve flow characteristics. The size and number of perforations in the tubing should be large enough so that the tubing does not restrict flow. The orifice should control the flow rate.

Additional Design Specifications

The pond should be divided into two roughly equal volume cells by a permeable divider that will reduce turbulence while allowing movement of water between cells. The divider should be at least one-half the height of the riser and a minimum of one foot below the top of the riser. Wire-backed, 2- to 3-foot high, extra strength filter fabric supported by treated 4"x4"s can be used as a divider. Alternatively, staked straw bales wrapped with filter fabric (geotextile) may be used. If the pond is more than 6 feet deep, a different mechanism must be proposed. A riprap embankment is one acceptable method of separation for deeper ponds. Other designs that satisfy the intent of this provision are allowed as long as the divider is permeable, structurally sound, and designed to prevent erosion under or around the barrier.

To aid in determining sediment depth, one-foot intervals should be prominently marked on the riser.

If an embankment of more than 6 feet is proposed, the pond must comply with the criteria contained in Chapter 5 regarding dam safety for detention BMPs.

The most common structural failure of sedimentation basins is caused by piping. Piping refers to two phenomena: (1) water seeping through fine-grained soil, eroding the soil grain by grain and forming pipes or tunnels; and, (2) water under pressure flowing upward through a granular soil with a head of sufficient magnitude to cause soil grains to lose contact and capability for support.

The most critical construction sequences to prevent piping will be:

- Tight connections between riser and barrel and other pipe connections.
- Adequate anchoring of riser.
- Proper soil compaction of the embankment and riser footing.
- Proper construction of anti-seep devices.

Maintenance Standards:

- Sediment shall be removed from the pond when it reaches 1–foot in depth.
- Any damage to the pond embankments or slopes shall be repaired.

BMP C209: Outlet Protection

Purpose: Outlet protection prevents scour at conveyance outlets and minimizes the potential for downstream erosion by reducing the velocity of concentrated stormwater flows.

Conditions of Use: Outlet protection is required at the outlets of all ponds, pipes, ditches, or other conveyances, and where runoff is conveyed to a natural or manmade drainage feature such as a stream, wetland, lake, or ditch.

Design and Installation Specifications: The receiving channel at the outlet of a culvert shall be protected from erosion by rock lining a minimum of 6 feet downstream and extending up the channel sides a minimum of 1–foot above the maximum tailwater elevation or 1-foot above the crown, whichever is higher. For large pipes (more than 18 inches in diameter), the outlet protection lining of the channel is lengthened to four times the diameter of the culvert.

- Standard wingwalls, and tapered outlets and paved channels should also be considered when appropriate for permanent culvert outlet protection. (See WSDOT Hydraulic Manual, available through WSDOT Engineering Publications).
- Organic or synthetic erosion blankets, with or without vegetation, are usually more effective than rock, cheaper, and easier to install. Materials can be chosen using manufacturer product specifications. ASTM test results are available for most products and the designer can choose the correct material for the expected flow.
- With low flows, vegetation (including sod) can be effective.
- The following guidelines shall be used for riprap outlet protection:
- If the discharge velocity at the outlet is less than 5 fps (pipe slope less than 1 percent), use 2-inch to 8-inch riprap. Minimum thickness is 1-foot.
- For 5 to 10 fps discharge velocity at the outlet (pipe slope less than 3 percent), use 24-inch to 4-foot riprap. Minimum thickness is 2 feet.
- For outlets at the base of steep slope pipes (pipe slope greater than 10 percent), an engineered energy dissipator shall be used.
- Filter fabric or erosion control blankets should always be used under riprap to prevent scour and channel erosion.
- New pipe outfalls can provide an opportunity for low-cost fish habitat improvements. For example, an alcove of low-velocity water can be created by constructing the pipe outfall and associated energy dissipator back from the stream edge and digging a channel, over-widened to the upstream side, from the outfall. Overwintering juvenile and migrating adult salmonids may use the alcove as shelter during high flows. Bank stabilization, bioengineering, and habitat features may be required for disturbed areas. See Chapter 6 for more information on outfall system design.

Maintenance Standards:

- Inspect and repair as needed.
- Add rock as needed to maintain the intended function.
- Clean energy dissipator if sediment builds up.

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 r 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	Functioning Y	Functioning N	Functioning NIP	Problem/Corrective Action

BMP:

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

Element 2: Establish Construction Access

BMP:

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

BMP:

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

Element 3: Control Flow Rates

BMP:

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

BMP:

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

Element 4: Install Sediment Controls

BMP:

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

BMP:

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

BMP:

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

BMP:

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

BMP:

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

Element 5: Stabilize Soils

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

Element 6: Protect Slopes

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

BMP:

Location | Inspected Y N | Functioning Y N NIP | Problem/Corrective Action

Element 7: Protect Drain Inlets

BMP:

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

BMP:

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

BMP:

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

Element 8: Stabilize Channels and Outlets

BMP:

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

BMP:

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

BMP:

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

BMP:

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

Element 9: Control Pollutants

BMP:

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

BMP:

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

Element 10: Control Dewatering

BMP:

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

BMP:

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

BMP:

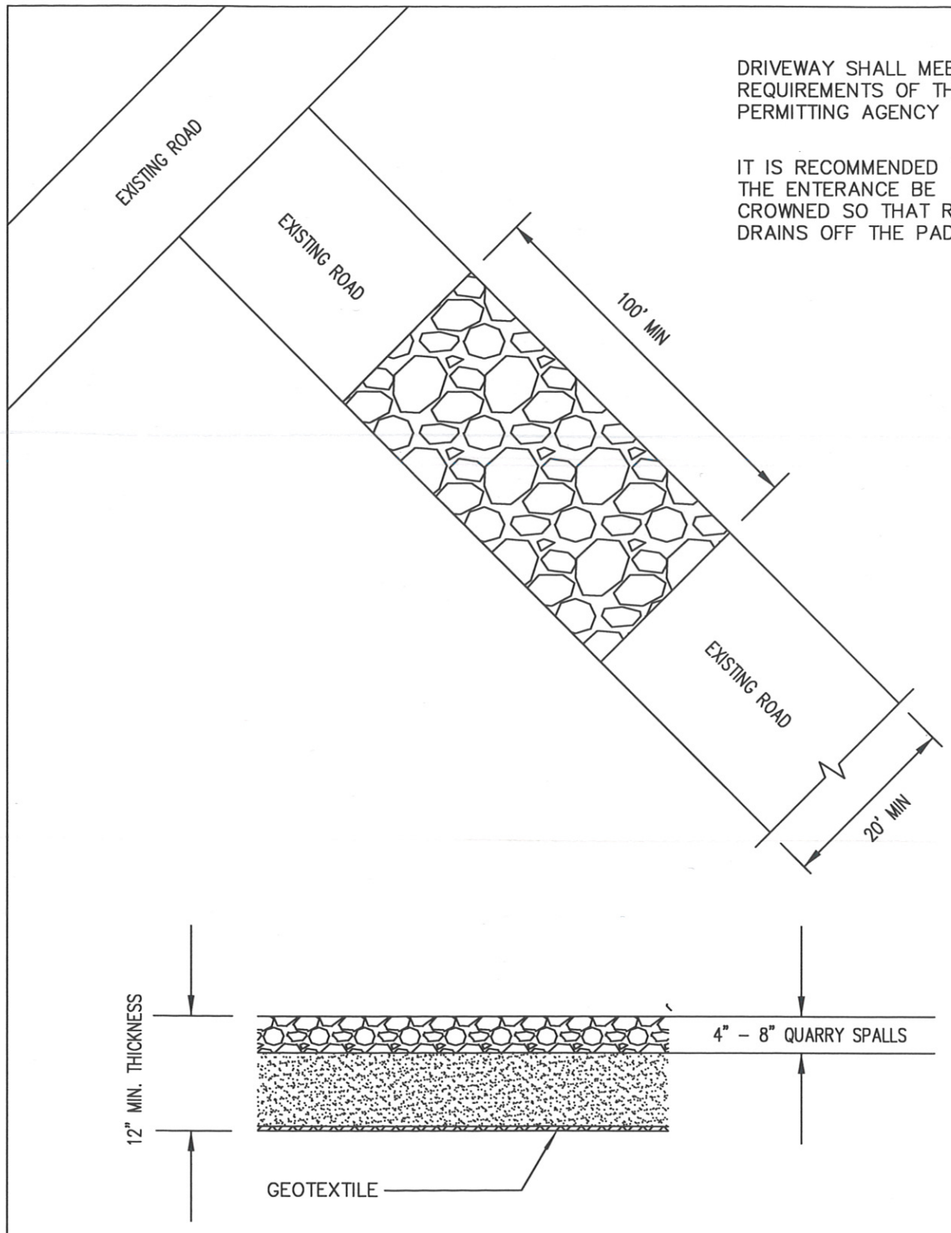
Location	Inspected Y	Inspected N	Functioning Y	Functioning N	Functioning NIP	Problem/Corrective Action

Stormwater Discharges From the Site			
	Observed? Y	N	Problem/Corrective Action
Location			
Turbidity			
Discoloration			
Sheen			
Location			
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 taken, describe photos below:

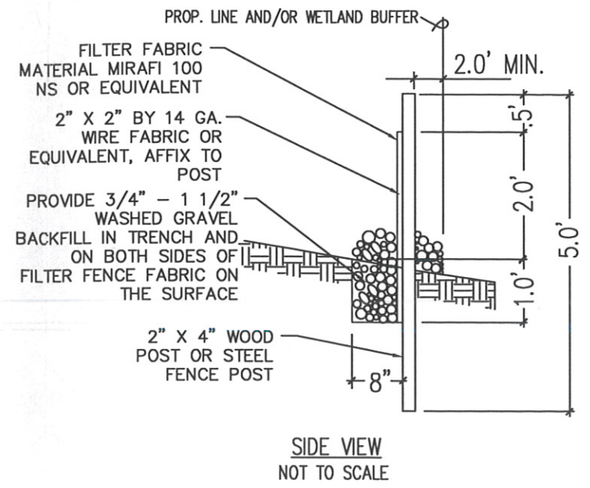
Appendix F – Engineering Calculations

None

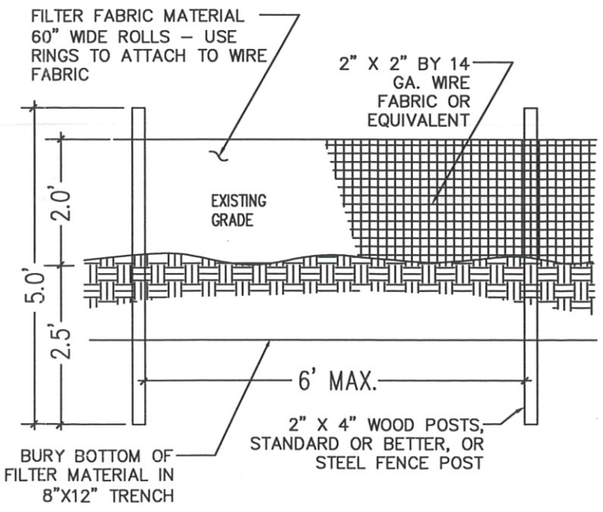


STABILIZED CONSTRUCTION ENTRANCE

DETAIL NO. SCE–1



SIDE VIEW
NOT TO SCALE



FRONT VIEW
NOT TO SCALE

NOTES:

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM SIX INCH (6") OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS (WHERE FEASIBLE). THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF SIX FEET (6') APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF THIRTY INCHES (30").
3. A TRENCH SHALL BE EXCAVATED, ROUGHLY EIGHT INCHES (8") WIDE AND TWELVE INCHES (12") DEEP, UPSLOPE AND ADJACENT TO THE WOOD POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY–DUTY WIRE STAPLES AT LEAST ONE INCH (1") LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF FOUR INCHES (4") AND SHALL NOT EXTEND MORE THAN THIRTY–SIX INCHES (36") ABOVE THE ORIGINAL GROUND SURFACE.
5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND TWENTY INCHES (20") OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN THIRTY–SIX INCHES (36") ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. WHEN EXTRA–STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF STANDARD NOTE(S) APPLYING.
7. THE TRENCH SHALL BE BACKFILLED WITH THREE–QUARTER INCH (¾") MINIMUM DIAMETER WASHED GRAVEL.
8. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
9. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

TYPICAL SILTATION FENCE

DETAIL NO. SF–1

DRAWN	JKA
CHECK	DMS
SCALE	N.T.S.
DATE	1/04

Columbia NW Engineering, PS
CNW ENG
engineering ~ surveying ~ planning
249 North Elder Street, Moses Lake, WA 98837
Ph: 509-766-1226 Fax: 509-766-6754

DRAWN	WCO
CHECK	DMS
SCALE	N.T.S.
DATE	1/04

Columbia NW Engineering, PS
CNW ENG
engineering ~ surveying ~ planning
249 North Elder Street, Moses Lake, WA 98837
Ph: 509-766-1226 Fax: 509-766-6754

K:\Projects–Map\1–11–009__Parker Horn Dewatering Pond\dwg\MosesLake20110216permit.dwg

TESC PLAN

MARK D. KELLER — STATE OF WASHINGTON — 37604 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	BY
1		
2		
3		
4		
5		

REVISIONS

Columbia NW Engineering, PS
CNW ENG
engineering ~ surveying ~ planning
249 North Elder Street, Moses Lake, WA 98837
Ph: 509-766-1226 Fax: 509-766-6754

PARKER HORN DEWATERING POND
SWPPP APPENDIX A
FOR: MURD
MOSES LAKE, WA 98837

APR	
DRAWN BY	MDK
CHECKED BY	03/24/11
PLOT DATE	AS NOTED
PLOT SCALE	1–11–009
PROJ. NO.	
REVISION NO.	
SHEET	2 OF 2

TOPOGRAPHIC SURVEY

IN PORTIONS OF SECTION 14, TOWNSHIP 19 NORTH, RANGE 28 EASE, W.M., GRANT COUNTY, WA.

INDEX DATA

	X	X	
	X	X	

SEC. 14 TWP. 19 N. RNG. 28 E.

VERTICAL DATUM

THE VERTICAL DATUM FOR THIS SITE IS BASED ON THE ELEVATION OF 1052.89 FEET ON THE NORTH ONE QUARTER CORNER OF SECTION 14, AS SHOWN ON THE UNITED STATES BUREAU OF RECLAMATION LAND CLASSIFICATION MAP FOR SECTION 14 DATED 8-5-38. THIS CORNER HAS BEEN USED BECAUSE IT APPEARS TO HAVE BEEN UNDISTURBED AND UNDER PROTECTIVE COVER OVER THE YEARS. THE POINT IS A UNITED STATES BUREAU OF RECLAMATION BRASS CAP 1.5' DEEP, JUST NORTH OF A DIRT DRIVE, AND HAS A LARGE METAL COVER ON THE TOP.

0 80' 160'

BASIS OF BEARING

THE BEARING OF S36°17'19"E ON THE EASTERLY LINE OF PARCEL I OF BROADWAY BUSINESS PARK NORTH II MAJOR PLAT, LOT 1, COMMERCIAL BINDING SITE PLAN NO. 2, AS RECORDED IN BOOK 1 OF BINDING SITE PLANS AT PAGES 48 AND 49, RECORDS OF GRANT COUNTY, WA., IS THE SAME AS SHOWN ON THE RECORD PLAT MAP OF SAID MAJOR PLAT.

ALL BEARINGS AND DISTANCES ARE AS SHOWN ON THE RECORD PLAT MAP OF SAID MAJOR PLAT

EQUIPMENT

TOPCON 3100 TOTAL STATION-
1" THEODOLITE AND COMBINED ELECTRONIC DISTANCE METER

METHOD OF SURVEY

FIELD TRAVERSE AND SIDE TIES WITH A CLOSURE EXCEEDING 1:10,000

NOTE:
A TOPOGRAPHIC SURVEY WAS PERFORMED BY PRAIRIE LAND SURVEYING FOR MOSES LAKE IRRIGATION DISTRICT ON THE PARCEL ABUTTING AND NORTHEASTERLY OF THE NORTHEASTERLY BOUNDARY OF THIS SURVEY. THE SURVEY IS TITLED "TOPOGRAPHIC AND BOUNDARY RESURVEY" AND IS DATED FEBRUARY 2, 2009. SAID SURVEY IS CONNECTED WITH THE PARCELS SHOWN ON THIS SURVEY ALONG WITH THE TOPOGRAPHY AND IS NEEDED TO SHOW SURVEY MONUMENTATION AND OTHER DATA RELATED TO THIS SURVEY.

LEGAL DESCRIPTION

(EXHIBIT "A" OF PLAT CERTIFICATE ISSUED BY SECURITY TITLE GUARANTY, MOSES LAKE, WA. UNDER ORDER NO. 83049, WITH AN EFFECTIVE DATE OF MARCH 26, 2009) ***

PARCEL I OF BROADWAY BUSINESS PARK NORTH II MAJOR PLAT, LOT 1, COMMERCIAL BINDING SITE PLAN NO. 2, VOLUME 1 OF BINDING SITE PLANS, PAGE 48, GRANT COUNTY, WASHINGTON.

AND

THAT PORTION OF SECTION 14, TOWNSHIP 19 NORTH, RANGE 28 E. W.M., GRANT COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE MOST NORTHERLY CORNER OF BLOCK 105 OF SUID-PENHALLURICK ADDITION AS RECORDED IN VOLUME 4 OF PLATS, PAGE 53, RECORDS OF GRANT COUNTY; THENCE NORTH 36°17'19" WEST 50.00 FEET TO AN INTERSECTION WITH THE CENTERLINE OF STATE SIGN ROUTE 171, ALSO KNOWN AS EAST BROADWAY EXTENDED AND FORMERLY KNOWN AS GRANT COUNTY ROAD #821; THENCE NORTH 53°42'41" EAST, FOLLOWING SAID CENTERLINE, 40.00 FEET TO A MONUMENT IN CASE MARKING THE INTERSECTION OF SAID CENTERLINE WITH THE CENTERLINE OF FIG STREET, SAID POINT BEARS SOUTH 53°42'41" WEST, 2518.05 FEET FROM A MONUMENT IN CASE MARKING SAID CENTERLINE; THENCE NORTH 36° 17'19" WEST, 50.00 FEET TO AN INTERSECTION WITH THE NORTHERLY BOUNDARY OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED UNDER AUDITOR'S FILE NO. 575988, SAID POINT BEING MARKED BY A 5/8 INCH REBAR WITH SURVEYOR'S CAP AND IS THE TRUE POINT OF BEGINNING, SAID POINT BEING ALSO THE MOST SOUTHERLY CORNER OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED AS PARCEL 1 UNDER AUDITOR'S FILE NO. 9203260019, RECORDS OF GRANT COUNTY; THENCE CONTINUING NORTH 36° 17'19" WEST FOLLOWING THE SOUTHERLY BOUNDARY OF SAID PARCEL 715.93 FEET TO THE MOST WESTERLY CORNER OF SAID PARCEL. SAID POINT BEING ALSO A POINT ON THE EASTERLY RIGHT OF WAY OF THE GOVERNMENT RAILROAD AS DESCRIBED UNDER AUDITOR'S FILE NO. 104763, RECORDS OF GRANT COUNTY, AND IS MARKED BY A ½ INCH REBAR WITH SURVEROR'S CAP, SAID POINT BEING A POINT ON A CURVE, THE CENTER OF WHICH BEARS NORTH 63 °57'31" WEST; THENCE NORTHERLY, FOLLOWING SAID CURVE TO THE LEFT, HAVING A CENTRAL ANGEL OF 12° 21'24", AND A RADIUS OF 1482.40 FEET, 319.70 FEET TO AN INTERSECTION WITH THE SOUTHWESTERLY BOUNDARY OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED AS PARCEL 2, UNDER AUDITOR'S FILE NO. 9203260019, RECORDS OF GRANT COUNTY, SAID POINT BEING MARKED BY A ½ INCH REBAR WITH SURVEYOR'S CAP; THENCE NORTH 36° 17'19" WEST, FOLLOWING SAID SOUTHWESTERLY BOUNDARY, 446.93 FEET TO THE MOST WESTERLY CORNER OF SAID PARCEL, AND A DIAGONAL LINE CONNECTING THE SOUTHWEST CORNER AND THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION, 470.93 FEET; THENCE SOUTH 36° 17'19" EAST 303.79 FEET TO A ½" REBAR WITH SURVEYOR'S CAP; THENCE CONTINUING SOUTH 36° 17'19" EAST, 1108.04 FEET TO AN INTERSECTION WITH THE NORTHWESTERLY BOUNDARY OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED UNDER AUDITOR'S FILE NO. 575990, RECORDS OF GRANT COUNTY, SAID POINT BEING ALSO ON THE SOUTHEASTERLY BOUNDARY OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED AS PARCEL 2 UNDER AUDITOR'S FILE NO. 9203260019, RECORDS OF GRANT COUNTY, SAID POINT BEING MARKED BY A ½ INCH REBAR WITH SURVEYOR'S CAP; THENCE SOUTH 53 42'41" WEST, FOLLOWING SAID BOUNDARIES AND THEIR PROJECTION, 730.49 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THE RIGHT OF WAY FOR THE GOVERNMENT RAILROAD AS CONVEYED BY EASEMENT DEED DATED NOVEMBER 2, 1943, RECORDED JANUARY 14, 1944, UNDER AUDITOR'S FILE NO. 104763 AND AS CONDEMNED IN UNITED STATES DISTRICT COURT, DISTRICT COURT CAUSE NO. 265.

(ADDED BY SURVEYOR–NOT INCLUDED IN SECURITY TITLE GUARANTY LEGAL DESCRIPTION)–IT IS PRESUMED THAT ALSO EXCEPTED IS ALL THAT PORTION OF THE PREVIOUSLY DESCRIBED PARCEL LYING WITHIN SAID BROADWAY BUSINESS PARK NORTH II MAJOR PLAT, LOT 1;

AND THAT PORTION OF THE FOLLOWING DESCRIBED PROPERTY LYING NORTHERLY OF THE RIGHT OF WAY FOR THE GOVERNMENT RAILROAD AS CONVEYED BY EASEMENT DEED RECORDED JANUARY 14, 1944, UNDER AUDITOR'S FILE NO. 104763 AND AS CONDEMNED IN UNITED STATES DISTRICT COURT CAUSE NO. 265:

THAT PORTION OF SECTION 14, TOWNSHIP 19 NORTH, RANGE 28 E., W.M., GRANT COUNTY, WASHINGTON DESCRIBED AS FOLLOWS:

BEGINNING AT THE MOST NORTHERLY CORNER OF BLOCK 105 PENHALLURICK ADDITION TO THE CITY OF MOSES LAKE, WASHINGTON, AS RECORDED IN VOLUME 4 OF PLATS, PAGE 53, RECORDS OF GRANT COUNTY, WASHINGTON; THENCE NORTH 53° 42' EAST ALONG THE NORTHWESTERLY BOUNDARY LINE OF SAID BLOCK 105 EXTENDED A DISTANCE OF 380 FEET; THENCE NORTH 36° 18' WEST, A DISTANCE OF 70 FEET TO THE NORTHWESTERLY BOUNDARY LINE OF GRANT COUNTY ROAD NO. 821; THENCE NORTH 53° 42' EAST ALONG SAID ROAD BOUNDARY, A DISTANCE OF 242.32 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 53° 42' EAST, A DISTANCE OF 557.68 FEET TO THE MOST EASTERLY CORNER OF THE PROPERTY HEREIN DESCRIBED; THENCE NORTH 36° 18' WEST, A DISTANCE OF 1369.48 FEET, MORE OR LESS, TO A POINT ON A DIAGONAL LINE CONNECTING THE NORTHEAST CORNER AND THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF NORTHWEST QUARTER OF SECTION 14, SAID POINT BEING HEREBY DESIGNATED "B"; BEGINNING AGAIN AT THE TRUE POINT OF BEGINNING; THENCE NORTH 72° 50' WEST, A DISTANCE OF 407.10 FEET; THENCE NORTH 36° 18' WEST A DISTANCE OF 725.54 FEET, MORE OR LESS, TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 14; THENCE NORTH 00° 12'40" EAST ALONG SAID WEST LINE A DISTANCE OF 272.90 FEET, MORE OR LESS TO THE NORTHWEST CORNER THEREOF; THENCE NORTHEASTERLY 645.31 FEET, MORE OR LESS, TO THE POINT HEREINBEFORE DESIGNATED "B"

SURVEY NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO PROVIDE TOPOGRAPHY FOR THE PROPERTY DEFINED BY GRANT COUNTY ASSESSOR'S PARCEL NUMBERS 110475013, 110422000, AND 90775218. A PLAT CERTIFICATE WAS PROVIDED BY SECURITY TITLE GUARANTY, MOSES LAKE, WA. UNDER ORDER NO. 83049, WITH AN EFFECTIVE DATE OF MARCH 26, 2009, WITH A LEGAL DESCRIPTION WHICH ENCOMPASSED THE THREE PARCELS.

THE TOPOGRAPHY WAS OBTAINED WITH A FIELD SURVEY UTILIZING A 50 FOOT GRID, AND BASED ON A VERTICAL DATUM AS DEFINED ON THIS DRAWING.

A COMPLETE AND VERIFIED BOUNDARY SURVEY WAS NOT PART OF THE REQUIREMENTS OF THIS SURVEY. THE BOUNDARY SHOWN IS BASED ON THE LEGAL DESCRIPTION PROVIDED BY SECURITY TITLE GUARANTY, ALONG WITH A COPY OF THE RECORD PLAT MAP OF BROADWAY BUSINESS PARK NORTH II MAJOR PLAT, LOT 1, COMMERCIAL BINDING SITE PLAN NO. 2, AS RECORDED IN VOLUME 1 OF BINDING SITE PLANS, PAGES 48 AND 49, RECORDS OF GRANT COUNTY, WASHINGTON. CORNERS FOUND ARE DEFINED ON THIS SURVEY AND REFLECT THE CORNERS SET ON SAID MAJOR PLAT WITH THE EXCEPTION OF THE ½" REBAR AND CAP LS 12491.

NOTE: PRIOR TO UTILIZATION OF THE SITE, THE BOUNDARY SHOULD BE FINALIZED IN ORDER TO VERIFY THE ACCURATE LOCATIONS OF THE BOUNDARY LINES.

NO DETERMINATION AS TO OWNERSHIP RIGHTS HAS BEEN MADE ON THIS SURVEY FOR THE NORTHWESTERLY PORTION OF THE SITE WHICH MAY LAY WITHIN THE BOOUNDARY OF THE LAKE OF MOSES LAKE.

THE RAILROAD IS AN EXISTING LINE. THE RIGHT OF WAY WIDTH OF THE RAILROAD WITHIN THE NORTHWEST QUARTER OF SECTION 14 IS SHOWN AS 100 FEET WIDE ON THIS SURVEY, HOWEVER, THE DOCUMENTS UNDER AUDITOR'S FILE NUMBERS 104763 AND 715530 DO NOT SPECIFY THE WIDTH, AND OTHER DOCUMENTS WOULD BE NEEDED TO VERIFY THE LIMITS OF THE RIGHT OF WAY. THE ALIGNMENT OF THE RAILROAD IS TAKEN FROM SAID RECORD PLAT MAP OF BROADWAY BUSINESS PARK NORTH II MAJOR PLAT, AND SAID ALIGNMENT APPEARS TO FIT THE EXISTING TRACK LOCATION OF THE RAILROAD WITHIN ACCEPTABLE LIMITS.

NO UTILITY LOCATES OR MARKINGS WERE OBTAINED, AND ONLY UTILITIES WHICH WERE VISIBLE ON THE SITE IN THE COURSE OF OBTAINING TOPOGRAPHY ARE SHOWN.

IN THE PLAT CERTIFICATE FROM SECURITY TITLE GUARANTY, THE FOLLOWING EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHTS OF WAY ARE LISTED UNDER THE FOLLOWING AUDITOR'S FILE NUMBERS: 86178, 99581, 106074, 145013, 172218, 370993, 9507180/46, 167332, 167340, 581127, 821897, 1017858, AND 1017813. THOSE EASEMENTS WHICH COULD BE LOCATED BY DESCRIPTION HAVE BEEN SHOWN ON THIS SURVEY. PRIOR TO UTILIZATION OF THIS SITE, IT IS THE RESPONSIBILITY OF PERSONS USING THE SITE TO CONTACT RELATIVE UTILITY COMPANIES FOR LOCATIONS OF ANY EXISTING FACILITIES AND/OR EASEMENTS.

RECORDED AND UNRECORDED DOCUMENTS, MAPS, DEEDS, PRESCRIPTIONS, VERBAL CONTRACTS, AND EASEMENTS MAY EXIST THAT MAY AFFECT THE MAPPED PARCELS OF THIS TOPOGRAPHIC MAP. NO ATTEMPT WAS MADE TO PLAT ANY OF THE AFOREMENTIONED BEYOND THOSE SHOWN.

SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A TOPOGRAPHIC SURVEY MADE BY ME OR UNDER MY DIRECTION AT THE REQUEST OF MOSES LAKE IRRIGATION DISTRICT IN MARCH, 2009-APRIL 2009.

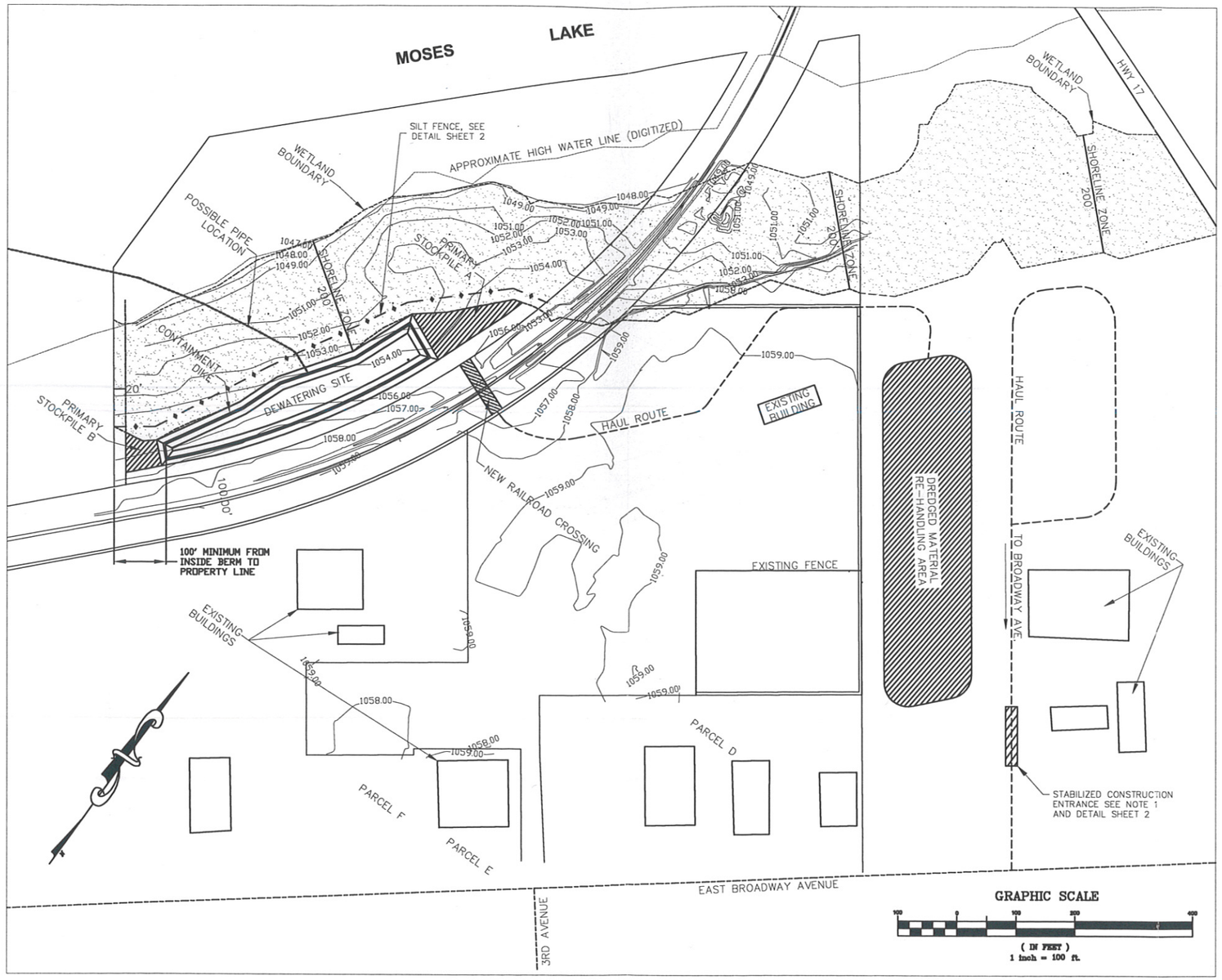
JAMES E. KEYES P.L.S.
CERTIFICATE NO. 16210

DATE:_____

PRAIRIE LAND SURVEYING
5134 RD E.7 NE,
MOSES LAKE, WA. 98837 (PH: 509-750-9133)

TOPOGRAPHIC SURVEY
PREPARED FOR: MOSES LAKE IRRIGATION DISTRICT
822 E. WHEELER ROAD
MOSES LAKE, WA. 98837

SCALE: 1" = 80'
DATE: 04-07-09
JOB NO: 09-009
SHEET NO: 1 OF 1



SITE PLAN

SITE COORDINATES
LATITUDE 47°08'15" N
LONGITUDE 119°16'17" W

NOTES:

1. ALL CONSTRUCTION EQUIPMENT MUST PROCEED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE BEFORE DEPARTING THE SITE.
2. CONTRACTOR SHALL INSTALL THE PROTECTIVE MEASURES INDICATED ON THIS SHEET.
3. DEWATERING SITE AND REHANDLING AREA SHALL BE RESTORED TO ORIGINAL GRADE AND STABILIZED WHEN OPERATION IS COMPLETE.
4. CONTRACTOR SHALL CONTROL FUGITIVE DUST FROM LEAVING THE SITE. TYPICAL METHODS KNOWN TO REDUCE FUGITIVE DUST ARE: REDUCED VEHICLE SPEEDS, APPLICATION OF WATER TO EXPOSED SOIL, AND THE PLACEMENT OF GRAVEL ON HAUL ROADS. ADDITIONAL MEASURES CAN BE FOUND IN THE **STORM WATER MANAGEMENT MANUAL FOR EASTER WASHINGTON, BMP C140: DUST CONTROL.**

MARK D. KELLER — STATE OF WASHINGTON — 37604 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	BY	REVISIONS
1			
2			
3			
4			
5			

Columbia NW Engineering, PS
CNW ENG
engineering ~ surveying ~ planning
249 North Elder Street, Moses Lake, WA 98837
Ph: 509-766-1226 Fax: 509-766-8754

PARKER HORN DEWATERING POND
SWPPP APPENDIX A
FOR: MURD MOSES LAKE, WA 98837

APR	DRAWN BY
MDK	CHECKED BY
03/24/11	PLOT DATE
AS NOTED	PLOT SCALE
1-11-009	PROJ. NO.
	REVISION NO.
SHEET 1 OF 2	

K:\Projects-Map\1-11-009__Parker Horn Dewatering Pond\dwg\MosesLake20110216permit.dwg

TESC PLAN

Electronic Signature Agreement Form

ESAF

DEPARTMENT OF ECOLOGY
State of Washington

Washington State Department of Ecology
Water Quality Program

Headquarters: (360) 407-6600
Web site: www.ecy.wa.gov/programs/wq

For Ecology Use Only	Date Received:		
Form	Reviewed	Entered	Verified
ESAF			

1. Site Location Information

If you are applying for multiple facilities/permits, please include a list containing the site location information and permit numbers for all requested facilities/permits.

Site/Facility Name: Parker Horn Dredge Site
Site Location Address: 892 E. Broadway
City/State/Zip: Moses Lake, WA 98837
Permit Number: WAR124816

2. Electronic Signer Contact Information

Role: [X] Facility Signer [ ] Facility Coordinator
Signature Account User Name: Christopher J Wilson
Full Name: Christopher Jacob Wilson
Work Mailing Address: Po Box 98
City/State/Zip: Moses Lake, WA 98837
Work Phone No. (Ext): (509) 765-8716
Work Email Address: MLIRDOPS@MLIRD.ORG

3. Proof of Identity

Please include a copy of one of the following documents, with your name on the document, with your ESAF to prove your association with the facility-(ies).

- Your permit's letter of coverage
- Your permit's cover sheet
- A previously submitted DMR
- A correspondence from Ecology that has both the facility name and permit number on the same page
- Signature authority delegation letter signed by the permittee (responsible official).

4. Electronic Signature Agreement and Certification Statement

By completing and submitting this form to Ecology, I agree to follow the rules and procedures governing the Electronic Signature account. I also agree that the reports and documents I submit under my Electronic Signature will be used as the corresponding paper report would. I want to submit the following report(s) or document(s) using WAWebDMR with an electronic signature.

- Discharge Monitoring Reports

5. Clean Water Act Certification Statement

All submittals to the Department of Ecology under this WAWebDMR application are subject to the following certification, as required by federal and state regulations:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

original mailed 5/18/11

6. Certification Statement

I agree that I will:	I agree that I will *not*:
• Protect my Electronic Signature account, which includes my answers to the verification questions and my password; • Review the content and meaning of my submitted Annual Reports and Notifications; • Within 24 hours of discovery, report to Ecology if: o My Electronic Signature account is lost, stolen or used by someone else; o There is any difference between the information I submitted and the information displayed in WebDMR; o My role as a signer for this organization changes. Agree: CW (initial here)	• Let anyone else use my Electronic Signature account. Agree: CW (initial here)

I, Christopher Wilson (print Electronic Signer's name), understand that:

1. My electronic signature is legally the same as my handwritten signature for the purpose of compliance with the relevant environmental regulations;
2. A failure to timely notify Ecology of a possible misuse of my Electronic Signature account may result in my liability for the information submitted;
3. There are significant penalties for submitting false information, including possible fines and imprisonment, related to the federal Department of Justice and federal environmental program;
4. I will be asked to verify that I am following the rules outlined in this agreement when I electronically submit documents.

7. Signature of Electronic Signer

This form cannot be processed without a handwritten signature.

Christopher Wilson
Electronic Signer's Signature

5/18/11
Date

Christopher J. Wilson
Name (print or type)

Operations & Lead Maint. Tech.
Title

8. Signature of Permittee (Responsible Official)

This form cannot be processed without a handwritten signature.

I, Curt Carpenter (insert name of permittee or responsible official) acknowledge that the individual named above works at/for Parker Horn Dredge Site (insert site/facility name) and is authorized to submit documents on the site's/facility's behalf. I understand that I will be contacted by Ecology to validate the account holder's employment at the site/facility name listed above.

Signature

05-18-2011
Date

Curt J. Carpenter
Name (print or type)

General Manager
Title

Note: If the responsible official has written a delegation letter, with signature, to accompany this form or if the responsible official is the person completing this form, then this section may be skipped.

If you need this document in a version for the visually impaired call the Water Quality Program at 360-407-6401. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

Mail the signed electronic signature agreement and additional document(s) to one of the following Ecology office.

For permit numbers starting with WAR######, please contact one of the following Department of Ecology Units:

Major Industrial Unit

Washington Department of Ecology
Water Quality Program Major Industrial Unit
P.O. Box 47600
Olympia, WA 98504-7600
360-407-6945

Stormwater Permit Facilities - Industrial and Construction Stormwater

Washington Department of Ecology
Water Quality Program Stormwater Unit
P.O. Box 47696
Olympia, WA 98504-7696
360-407-6600

For all other permits, please contact one of the follow offices.

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties

Washington Department of Ecology
Water Quality Program - SWRO
PO Box 47775
Olympia, WA 98504-7775
360-407-6300

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties

Washington Department of Ecology
Water Quality Program - ERO
N. 4601 Monroe
Spokane, WA 99205-1295
509-329-3400

Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties

Washington Department of Ecology
Water Quality Program - CRO
15 West Yakima Ave -- Suite 200
Yakima, WA 98902-3452
509-575-2490

Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties

Washington Department of Ecology
Water Quality Program - NWRO
ATTN: Chris Smith
3190 - 160th Ave. SE
Bellevue, WA 98008-5452
425-649-7000

Mlirdops

From: CROMMERUserNotification@ecy.wa.gov
Sent: Wednesday, May 18, 2011 8:30 AM
To: mlirdops@mlird.org
Subject: Washington State Dept of Ecology confirmation: Your Electronic Signature Account application has been received
Attachments: ESAF Template.pdf

Importance: High

Washington State Dept of Ecology confirmation:

Your Electronic Signature Account application has been received. You have applied for an Electronic Signature Account with the Washington State Department of Ecology.

Before you can submit documents with your Electronic Signature, please do the following:

1) Print, read, and sign the attached Electronic Signature Account Agreement.

2) Send to the address on the Electronic Signature Account Agreement.

3) If you have questions, contact Ecology staff listed on the Electronic Signature Account Agreement.

4) Wait for email notification. When your Electronic Signature Account has been approved, you will receive an email.

Regards,

Washington State Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 13, 2011

Curt Carpenter
Moses Lake Irrigation & Reclamation District
PO Box 98
Moses Lake WA 98837-0016

Parker Horn Dredging
900 Broadway Ave
Moses Lake
WAR124816

RE: Sampling under the Construction Stormwater General Permit (CSWGP), and WAWebDMR

Dear Curt Carpenter:

The Washington State Department of Ecology's (Ecology) records indicate your site is covered under Ecology's Construction Stormwater General Permit (CSWGP). Permittees covered under the CSWGP must submit monthly discharge monitoring reports (DMRs) using Ecology's secure, online program, WAWebDMR (formerly WebDMR) - **even if there was no discharge**. According to our records, the site identified above **has not been registered** in WAWebDMR as required by permit condition S5.B.

To sign up for WAWebDMR, and for locations, dates, and times of available WAWebDMR training, go to our website at www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. If you are unable to submit electronically, you must contact Ecology to request a waiver. A waiver will generally only be granted to those permittees without internet access.

Questions related to WAWebDMR should be directed to Ecology's WAWebDMR staff at WAWebDMR@ecy.wa.gov, or (360) 407-7097 (locally), or (800) 633-6193/option 3

If you have other questions, are no longer a permittee on a site, or if the site no longer requires coverage, contact your permit administrator, Shawn Hopkins at (360) 407-6442 or shop461@ecy.wa.gov, to ensure we have the most up-to-date site information.

If you have site-specific questions, or require sampling assistance, contact your regional inspector, Jeremy Ryf at (509) 329-3610, or JRYF461@ecy.wa.gov.

Sincerely,

Bill Moore, P.E.
Program Development Services Section Manager
Water Quality Program

Enclosure