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DEPARTMENT OF ECOLOGY

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WATER QUALITY PROGRAM

LEVELS 2 AND 3 SOURCE CONTROL REPORT HAMBLETON LUMBER COMPANY

Prepared for

HAMBLETON LUMBER COMPANY, LLC

December 3, 2009

Project No. 0512.01.02



Prepared by

Maul Foster & Alongi, Inc.

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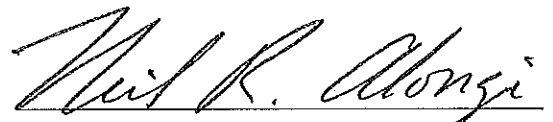
Vancouver, WA 98665

LEVELS 2 AND 3 SOURCE CONTROL REPORT

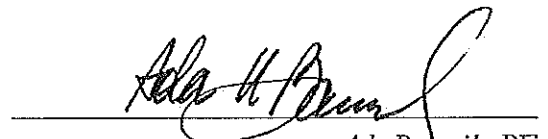
HAMBLETON LUMBER COMPANY

*The material and data in this report were prepared
under the supervision and direction of the undersigned.*

MAUL FOSTER & ALONGI, INC.



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FOLLOWING REPORT:

FIGURES

- 1 SITE LOCATION
- 2 SITE FEATURES AND STORMWATER SYSTEM

ACRONYMS AND ABBREVIATIONS

BMP	best management practice
BOD5	five-day biochemical oxygen demand
CEC	Certified Environmental Consulting, Inc.
Ecology	Washington State Department of Ecology
Hambleton	Hambleton Lumber Co., LLC
MFA	Maul Foster & Alongi, Inc.
Permit	National Pollutant Discharge Elimination System general permit for industrial activities, Number SO3- 000319D

1 INTRODUCTION

1.1 Purpose

The purpose of this Levels 2 and 3 Source Control Report is to address stormwater management at the Hambleton Lumber Co., LLC facility in Washougal, Washington (Site). Hambleton manages stormwater at the Site pursuant to the Industrial Stormwater General Permit No. SO3-002129D (Permit). Section S4 (Monitoring Requirements) of the Permit requires that the permittee prepare and submit a Level 2 Source Control Report to the Washington State Department of Ecology (Ecology) whenever two out of the previous four quarterly results exceed the Permit action levels. Permittees must submit a Level 3 Source Control Report to Ecology whenever any four quarterly results exceed the Permit action levels.

Two out of the last four quarterly results for turbidity exceeded the Permit action level and therefore, a Level 2 Report is required. Four quarterly results for five-day biochemical oxygen demand (BOD₅) and total zinc have exceeded Permit action levels and therefore, a Level 3 Report is required.

This report summarizes potential sources of contamination; evaluates available source control, operational, and treatment best management practices (BMPs); and describes actions taken, planned, and scheduled for implementing BMPs and source control measures to reduce levels of zinc, BOD₅, and turbidity in stormwater effluent.

1.2 Site Location and Description

The Site is located at located at 335 South A Street in Washougal, Washington (see Figure 1) and has been in operation since 1960. The Site is approximately 17 acres and is bordered by the Columbia River to the south, SR-14 to the north, an undeveloped property to the east and a commercial development to the west. A portion of the Site is impervious and covered by asphalt and buildings, while the majority of the Site is pervious and covered by graveled surface or partially-vegetated soil. The ground surface is relatively flat with the exception of a steep drop off at the south property line adjacent to the Columbia River.

Hambleton specializes in the milling of large-dimension lumber and the Site includes storage areas for raw logs and finished lumber products, as well as a sawmill, an office building, and equipment and scrap material storage areas.

2 STORMWATER MANAGEMENT

2.1 Stormwater System Overview

Stormwater at the Site infiltrates in the pervious areas and/or sheet-flows or drains towards a stormwater outfall that discharges to the Columbia River (see Figure 2). Stormwater drains toward a storm manhole located just south of the Mill and is routed through a newly installed Contech StormFilter® treatment facility prior to discharge to the river via Outfall 2. Much of the area draining to Outfall 2 is paved, however stormwater runoff in this drainage area tends to mobilize sawdust and other wood particulates as it drains toward the collection system.

2.2 Monitoring

In accordance with Permit requirements, Hambleton has been conducting quarterly monitoring of stormwater at Outfall 2 (see Appendix A). The Permit benchmark values and action levels are summarized in the Table 2.1.

Table 2.1 Stormwater Sampling Requirements

Parameter	Benchmark Value	Action Level	Sampling Frequency	Reporting Frequency
Turbidity	25 NTU	50 NTU	Quarterly	Quarterly
pH	6–9 SU	5–10 SU	Quarterly	Quarterly
Petroleum—Oil & Grease	15 mg/L	30 mg/L	Quarterly	Quarterly
Total Zinc	117 µg/L	372 µg/L	Quarterly	Quarterly
Total Copper	63.6 µg/L	149 µg/L	Quarterly	Quarterly
Total Lead	81.6 µg/L	159 µg/L	Quarterly	Quarterly
Hardness	NA	NA	Quarterly	Quarterly
BOD ₅	30 mg/L	60 mg/L	Quarterly	Quarterly
NOTES: mg/L = milligrams per liter. µg/L = micrograms per liter. NTU = nephelometric turbidity unit. SU = standard units.				

2.3 Performance

To date, quarterly stormwater sampling and analyses of the Permit parameters have been conducted by Certified Environmental Consulting, Inc. (CEC) of Vancouver, Washington. Several exceedances of the benchmarks and action levels for turbidity,

3 POTENTIAL CONTAMINATION SOURCES

This section outlines potential sources of turbidity, BOD₅, and total zinc.

3.1 Sediment

Much of the Site is pervious and covered by graveled surface or partially vegetated soils. Sediment and soil particles from the pervious areas are mobilized by stormwater runoff and equipment traffic and likely contribute to the elevated turbidity levels in stormwater effluent.

3.2 Wood Waste

Saw dust is stored adjacent to the mill and is mobilized by wind during transport via conveyors. Sawdust that has been blown off the conveyors and accumulated on the ground surface is then mobilized by stormwater runoff and may potentially drain towards Outfall 2. Bark debris, generated by log-handling activities, accumulates in various areas of the Site and is mobilized by vehicle and equipment traffic and stormwater runoff. Hog fuel and bark chips stored onsite also have the potential to come into contact with stormwater runoff.

Although mill equipment (saws, conveyors, etc.) is located primarily indoors and isolated from contact with stormwater, the combined effects of vehicle traffic, wind, and runoff create the potential for stormwater contamination with wood waste fines. The mobilized fines are a potential source of sediment in stormwater and a likely contributor to the elevated turbidity levels. Decomposing organic matter in wood waste likely contributes to the elevated BOD₅ levels in stormwater.

3.3 Metals

The mill building is constructed of galvanized steel and likely leaches zinc into stormwater runoff. Additionally, various scrap metal materials have accumulated throughout the site and likely contribute to the elevated zinc concentrations.

4 EXISTING BEST MANAGEMENT PRACTICES

BMPs selected for use at the Site are based on the presumptive approach, using guidance from the Stormwater Management Manual for Western Washington (2005) and the Industrial Stormwater General Permit Implementation Manual for Log Yards (2004).

Existing BMPs are summarized below. Hambleton has also initiated several additional BMPs in response to recent action level exceedances to prevent, control, or reduce the potential for stormwater contamination from Site operations (see Section 5).

4.1 Source Control BMPs

Source control BMPs reduce contact between stormwater and potential pollutant sources. Source control BMPs implemented at the Site include:

- Areas with high levels of activities are paved to reduce the potential for erosion due to stormwater runoff and vehicle traffic.
- Woodwaste piles are generally located on paved surfaces and pavement slopes were designed to prevent run-on of stormwater into the piles and minimize ponding and leachate formation.
- Material dredged from the log pond is stockpiled on site and covered with plastic sheeting to minimize contact with stormwater runoff.

4.2 Operational BMPs

Operational BMPs reduce the potential for stormwater contamination resulting from site operations. Operational BMPs implemented at the Site include:

- Good housekeeping practices, including sound industry practices for site operations and regular site cleanup.
- Preventative maintenance measures, including regular cleanout of sediment and debris that has accumulated in the drainage structures.
- Inspections and maintenance of the drainage areas and stormwater system.

5 ADDITIONAL BEST MANAGEMENT PRACTICES

This section outlines BMPs and source control measures that have been recently implemented or are under evaluation for implementation to further reduce contaminant levels in stormwater effluent.

These additional BMPs were selected based on the presumptive approach, using guidance from the Stormwater Management Manual for Western Washington (2005) and the Industrial Stormwater General Permit Implementation Manual for Log Yards (2004).

5.1 Source Control BMPs

5.1.1 Sediment Control

Hambleton proposes to use sediment control measures to reduce the solids loads in stormwater at the Site. The amount of sediment and woodwaste (sawdust, chips, bark) from the site operations can negatively impact the quality of stormwater generated at the Site. Installing reusable devices that can trap this material before entering the stormwater system will be beneficial to water quality and to maintenance efforts. An example of a product that may have an application at the Site is the Erosion Eel, by ACF Environmental which consists of washed recycled shredded rubber inside a woven geotextile envelope (see Appendix D for product brochure).

Additionally, Hambleton initiated a week-long general site cleanup program in November 2009 that included scraping of accumulated silt, sediment and bark dust down to the paved or graveled surface. Hambleton anticipates that this measure will reduce the solids load in stormwater runoff.

5.1.2 Removal of Metal Debris

Hambleton has contracted with a metals recycling service to remove scrap metal that has accumulated at the Site. To date, approximately 80 tons of scrap has been removed from the site and Hambleton anticipates that the bulk of the remaining scrap will be removed by January 2010. This measure will reduce the potential for stormwater contamination with metals.

5.2.2 Stormwater System Preventive Maintenance Program

Hambleton contracts with River City Environmental, Inc. to properly maintain the stormwater system components. This includes regular cleanout of the oil/water separator and catch basin sump to remove accumulated solids and oils. Facility staff are inspecting drainage structures on a weekly basis during the wet season to determine whether the current cleanout frequency requires adjustments to improve system operations.

5.2.3 Equipment Maintenance Program

Hambleton is working with facility staff to formally outline equipment maintenance procedures that will reduce the potential for stormwater contamination resulting from these operations. Equipment maintenance areas will be delineated and, to the extent possible, all equipment maintenance activities will be conducted under cover or away from storm drains and stormwater conveyance pathways.

5.2.4 Visual Inspections

Hambleton formalized a pollution prevention team and will be training team members to conduct regular stormwater inspections and visual inspections of the discharge. Team members will properly document all inspections and maintain records on site.

5.3 Treatment BMPs

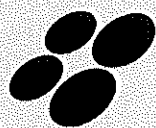
Hambleton will be testing the reliability of the StormFilter® unit to treat stormwater to below permit benchmarks. This evaluation will be based on several stormwater monitoring events. Hambleton is also evaluating pretreatment measures to enhance the treatment efficiency of the StormFilter® and prolong the life of the filtration media. The cost and anticipated performance of the improved treatment system will be evaluated versus the stormwater management option described in Section 6.

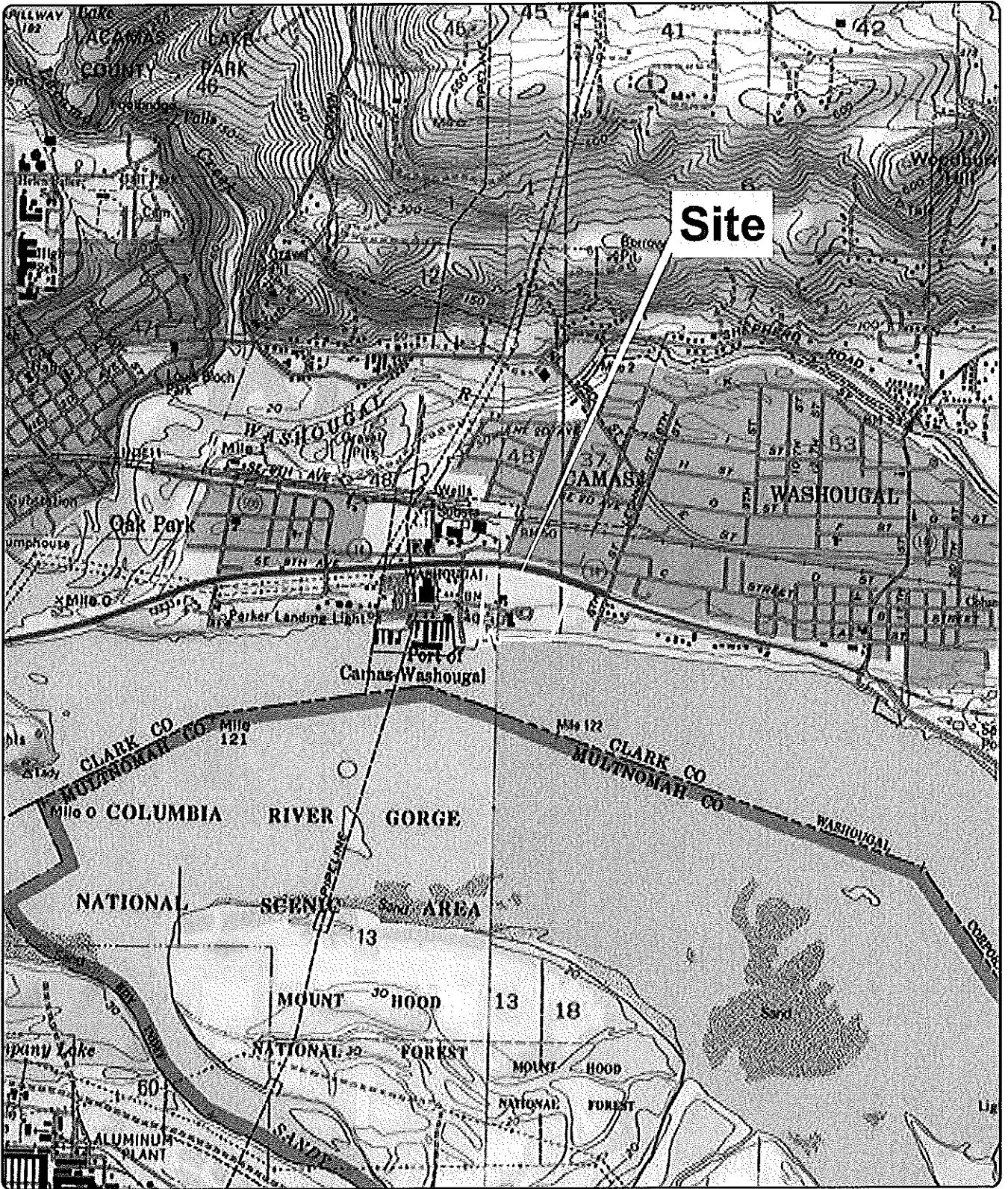
LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

FIGURES





Source: Topographic Quadrangle obtained from
 ESRI, Inc. ArcGIS Online/USGS-NGS TOPDI
 Address: 335 A St, Washougal, WA 98671
 Meridian - 33 (Willamette)
 Township - 001 North
 Range - 003 East
 Section - 012

Legend


 Approximate Site Area

Figure 1
Site Location

Hambleton Lumber Co.
 Washougal, Washington



This product is for informational purposes and may not have been prepared for, or be suitable
 for legal, engineering, or surveying purposes. Users of this information should review or
 consult the primary data and information sources to ascertain the veracity of the information.

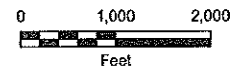




Figure 2 Site Features and Stormwater System

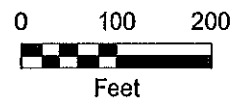
Hambleton Lumber Co.
Washougal, Washington

Legend

-  Sanitary Sewer Manhole
-  Contech StormFilter
-  Storm Manhole
-  Stormwater Outfalls
-  Sanitary Sewer Main
-  Storm Line
-  Topographic Contour
(2-ft Interval)
-  Potential Locations of
Stormwater Management
Facilities
-  Tax Lots

Notes:

1. Extent and location of site storm lines are approximate and based on field observations and/or historical site maps.



Source: Aerial photograph obtained from
ESRI, Inc. ArcGIS Online/Microsoft Virtual
Earth; sanitary sewer data topographic
contours obtained from Clark County



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APPENDIX A

STORMWATER SAMPLING RESULTS



Outfall 2 Stormwater Sampling Results
Hambleton Lumber Co. LLC
Permit Number SO3-002129D
Washougal, Washington

Parameter	Units	Benchmark	Action Level	2004		2006		2007		2008				2009			
				4th Qtr		2nd Qtr	4th Qtr	2nd Qtr ¹	3rd Qtr	4th Qtr	1 Qtr	2 Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr
Turbidity	NTU	25	50	0.32		3.9	0.5 U	3.9	14.7	41.8	8.5	NA	No Discharge	86.4	650	47	No Discharge
pH	s.u.	6 - 9	5 - 10	6.25		6.2	6.0	6.2	6.41	6.5	6.14	7.58	No Discharge	NA	7.0	7.2	No Discharge
Oil & Grease	mg/L	15	30	3 U		3 U	3.3 U	3 U	6.6	10.0	2 U	29	No Discharge	13.9	27	52.4	No Discharge
BOD ₅	mg/L	30	60	3 U		NA	NA	NA	NA	24.8	46	115	No Discharge	90.7	145	123	No Discharge
Copper	µg/L	63.6	149	NA		NA	NA	NA	79.7	22.8	1.69	39.8	No Discharge	32.15	38.5	129	No Discharge
Lead	µg/L	81.6	159	NA		NA	NA	NA	107	15.4	1 U	17.5	No Discharge	33.1	24.8	58.2	No Discharge
Zinc	µg/L	117	372	400		650	500	650	901	232	159	504	No Discharge	257	556	619	No Discharge
Hardness	µg/L	NA	NA	NA		NA	NA	NA	55.0	33.2	35.2	34.2	No Discharge	65.2	29.3	45.0	No Discharge

Notes:

Bold = concentration exceeds benchmark.
Shaded = concentration exceeds action level.
BOD₅ = 5-day biochemical oxygen demand.
mg/L = milligrams per liter.
NA = not available.
s.u. = standard units.
µg/L = micrograms per liter.
U = concentration not detected above the method reporting limit.

¹Laboratory report for the 2nd quarter of 2007 has not been found on record. Data presented in the table was obtained from the Discharge Monitoring Report.

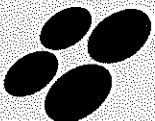
Compliance Requirements

1. All exceedances of benchmark values require a Level 1 response.*
2. If any two out of the four previous quarterly sampling results exceed action levels, a Level 2 response is required.*
3. If any four quarterly samples exceed action levels, a Level 3 response is required.*
4. If zinc exceeds the benchmark for two consecutive quarters additional metal sampling is required.

* These requirements only apply to samples taken after December 31, 2004.

APPENDIX B

LEVEL 1 RESPONSE TO COPPER AND OIL AND GREASE BENCHMARK EXCEEDANCES



Level 1 Response to
Benchmark Exceedances - Second Quarter of 2009
Permit No. SO3-002129D
Hambleton Lumber Co., LLC

Maul Foster & Alongi, Inc. (MFA) prepared this Level 1 Response to benchmark exceedances in stormwater effluent from the Hambleton Lumber Co., LLC (Hambleton) facility in Washougal, Washington (Site). Hambleton manages stormwater at the Site pursuant to the Industrial Stormwater General Permit No. SO3-002129D (Permit). Section S4 (Monitoring Requirements) of the Permit requires that the permittee inspect the facility to evaluate contaminant sources and whether changes are needed in the best management practices (BMPs) implemented at the Site or the Site Stormwater Pollution Prevention Plan (SWPPP) and summarize the results in its quarterly discharge monitoring report (DMR). The benchmarks for copper and for oil and grease were exceeded during the second quarter of 2009, triggering a Level 1 Response.

This response summarizes potential sources of contamination and proposed BMPs to reduce copper and oil and grease levels in stormwater effluent. A copy of this response has been placed in the Site's SWPPP.

Site Inspection and Stormwater Pollution Prevention Plan Review

Hambleton and MFA conducted a site inspection in October 2009 to evaluate the efficacy of the BMPs listed in the SWPPP and determine potential sources of contamination.

MFA and Hambleton reviewed the SWPPP and found that generally, the BMPs outlined in the SWPPP were in place. MFA and Hambleton identified additional BMPs and source control measures that may reduce contaminant levels in stormwater discharging from the Site. These measures are currently under evaluation and will be incorporated into SWPPP updates, planned to be completed by January 1, 2010.

Sources

Scrap metal that is stored on site is a potential source of copper at the site. Additionally, as brake pads in Site equipment deteriorate, small quantities of copper wear off and have the potential to contaminate stormwater runoff.

Site equipment may also leak oil and potentially cause elevated oil and grease concentrations in stormwater effluent. Air condensate from air compressors can also contribute to elevated oil and grease levels in stormwater.

Proposed Actions

Hambleton has contracted with metals recycling service to remove scrap metal that has accumulated at the Site. To date, approximately 80 tons of scrap have been transported to an off-site metal recycling facility and the bulk of the remaining scrap will be removed from the Site by January 2010. This measure will reduce the potential for stormwater contamination with metals.

Hambleton is working to formally outline equipment maintenance procedures that will reduce the potential for stormwater contamination resulting from these operations.

Hambleton is evaluating options for proper collection of condensate generated by the air compressors and off-site disposal at a permitted facility. The condensate will be collected and combined with used oils to be disposed of off-site at an oil-recycling facility.

Hambleton recently installed a Contech StormFilter® treatment facility that filters stormwater prior to discharge to Outfall 2. This treatment unit is designed to remove metals, oils and suspended solids from stormwater and Hambleton will be testing the reliability of this system to consistently reduce contaminant levels to below Permit benchmarks. Hambleton is also evaluating pretreatment measures to enhance the treatment efficiency of the StormFilter® and prolong the life of the filtration media.

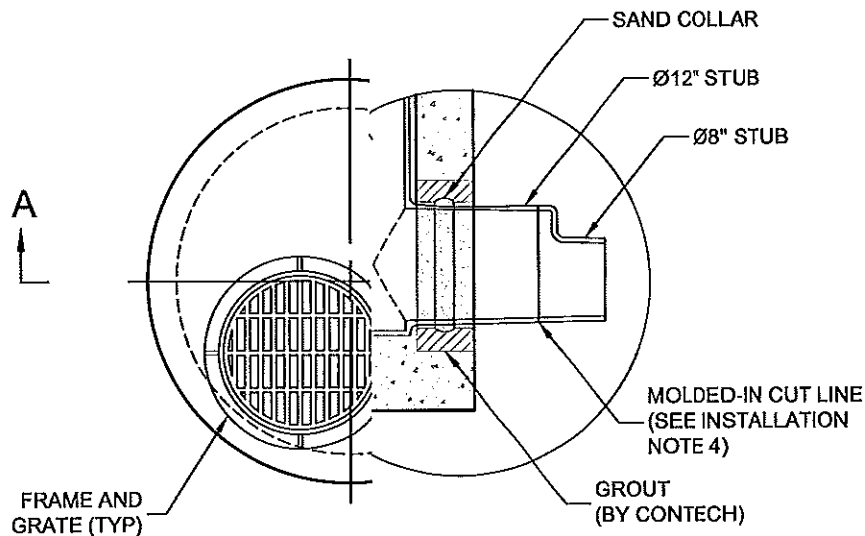
Hambleton anticipates that the above measures will decrease the contaminant levels to below permit benchmarks and reduce the potential for future Permit non-compliance.

APPENDIX C

STORMFILTER DETAIL DRAWINGS



I:\AD.CONTECH\OPI.COM\ROOT\WEL\IN\PROJECT\ACTIVE\400327-1\STORMFILTER\DRAWINGS\CONTRACT\400327-01.MHSF72-SUB.DWG 8/14/2009 10:15 AM



PLAN OUTLET DETAIL

CONTRACTOR TO GROUT
TO FINISHED GRADE
(SEE PLAN FOR LOCATION)

GRADE
RING/RISERS

B

FILTER
CARTRIDGE
FLOW KIT

SITE DESIGN DATA

WATER QUALITY	
FLOW RATE	0.211 cfs
PEAK FLOW	
RATE	<1.5 cfs
RETURN PERIOD	
OF PEAK FLOW	25 yrs
SPECIFIC FLOW RATE	
OF STORMFILTER	2 gpm /sq ft
FILTER MEDIA TYPE	CSF

OTHERWISE.
UNLESS ACTUAL DIMENSIONS MAY VARY.
FOR DIMENSIONS AND WEIGHTS, PLEASE CONTACT
CONTECH. www.contechstormwater.com
IN ACCORDANCE WITH ALL DESIGN DATA AND
OR TO CONFIRM STRUCTURE MEETS REQUIREMENTS

LOAD RATING.
IF PHON ACTUATED, RADIAL FLOW, AND SELF
FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 39

FLOW CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT

ALL PROVISIONS ARE SITE-SPECIFIC DESIGN
FOR RECORD.
LIFTING AND REACH CAPACITY TO LIFT AND SET THE
UNIT).

SECTION STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
THE OUTLET RISER STUB. STORMFILTER EQUIPPED
SAND COLLAR. IF OUTLET PIPE IS LARGER THAN 8 INCHES
MOLDED-IN CUT LINE. COUPLING BY FERNCO OR

PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED

Ø72" MANHOLE STORMFILTER - 400327-01
HAMBLETON LUMBER SAW MILL
WASHOUGAL, WA
SITE DESIGNATION: XXX

This drawing or electronic file is for the purpose of
specifying stormwater treatment equipment to be
furnished by CONTECH Stormwater Solutions (CSS).
Title block information, including the CSS logo and the
stormwater treatment system product designation and
patent number, if applicable, may be deleted if
necessary. Revisions to any part of this drawing,
except as previously noted, without prior coordination
with CSS shall be considered unauthorized use of
proprietary information.



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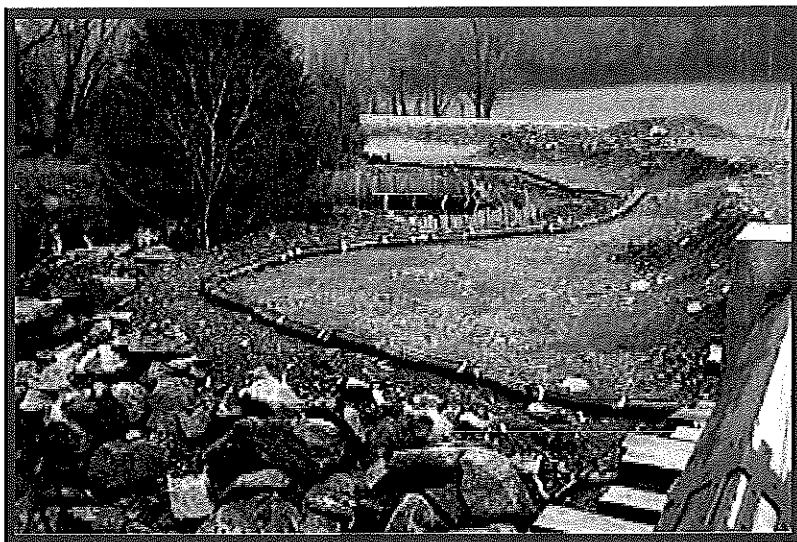
APPENDIX D

EROSION EEL PRODUCT BROCHURE



EROSION EEL™

The Erosion EEL™, by its very nature, functions to help prevent physical degradation of the environment by enhancing water quality.



What Is The ErosionEEL™

The ErosionEEL™ is an environmentally friendly, low impact erosion and sediment control device.

Erosion EEL™

Advantages

- *Easy installation with no trenching required*
- *Replaces silt fence, rock check dams, temporary diversion berms, and storm/inlet drain protection*
- *May be placed over multiple surfaces including soil, asphalt, concrete, and surface rock*
- *DOT Approved in many states*
- *Durable, reusable, and easily moved, thereby making it very cost-effective compared to silt fence and other BMPs*
- *Increased flow rates through the filter material as compared to silt fence preventing localized flooding during storm events*

ErosionEEL™ is reusable within a project and can be moved to other project sites:

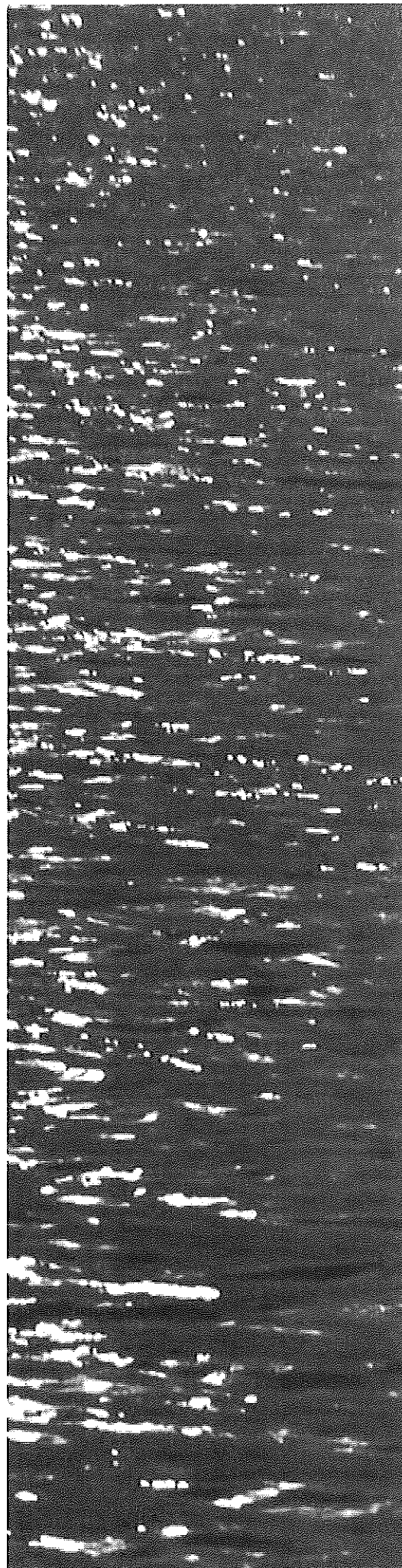
Minimizes the amount of new product manufacturing (involving extraction of natural resources, additional manufactured products into the environment).

At the end of EEL cycle, rubber material is cleaned and reused in new EELs that are produced.

Call ACF Environmental for more information.



800-448-3636



Benefits and Features

- Three-dimensional Filter - Sediment retention roll/tube
Function: Suspended particle capture; flow control
- Woven polypropylene geotextile exterior
- Nominal 9.5" diameter
- Manufactured lengths = Nominal 10ft and 4.5ft
- Internal fill Material Mixture
Washed shredded rubber (metal removed) - Supplier:
MTR AASHTO - specified hardwood chips (0.5" to
0.75" in size)

Environmental Compatibility

Synthetic Precipitation Leach Procedure (SPLP)

pH of 4.2 and pH 7.0 (modified SPLP)

Testing for metals, volatiles, surfactants, base/neutral
extractables, acid extractables

Rubber Fill Material Results

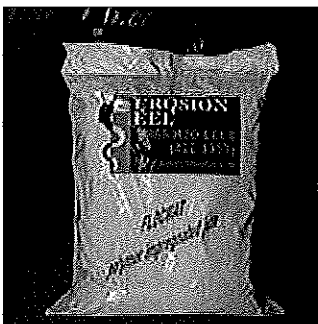
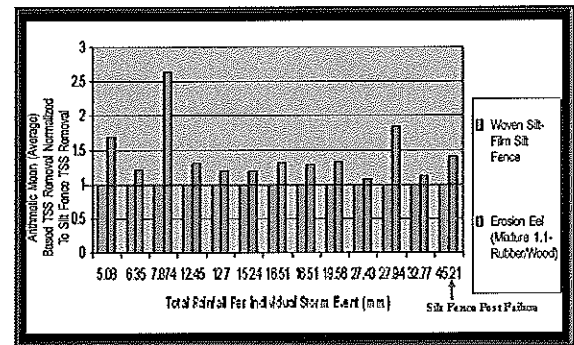
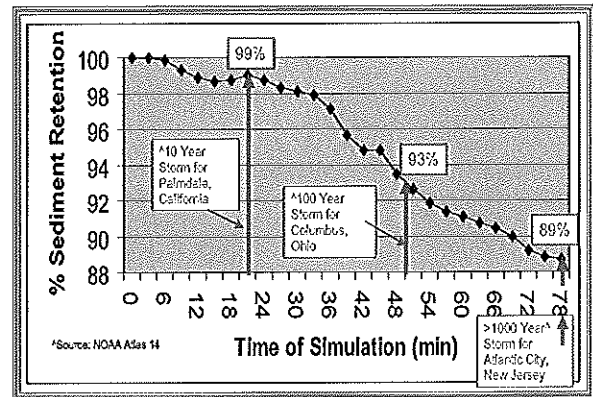
No adverse levels of any constituents have been extracted
(relative to human exposure and aquatic toxicity)

Synthetic Fibers (nylon, PP, PET)

No adverse levels of any constituents have been extracted
(relative to human exposure and aquatic toxicity)

Performance

The test results for the ErosionEEL™ at the San Diego State University Soil Erosion Research Laboratory revealed that the EEL is very resilient under extreme rainfall intensities and slope conditions. The protocol used was designed to fail all BMPs in order to determine the performance limits. However, the ErosionEEL™ retained as high as 89% solids from a 33% barren slope under rainfall conditions at or exceeding the 1000 year storm event.



ACF Environmental

"Complete Source for Storm Water Solutions"



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