

Washington Department of Ecology

Electronic Submission Cover Letter



WQWebSubmittal - Submittal Submission Id: 1610056 - 3/9/2018 1:48:57 PM

Company Name	Signer Name	System Name
Yakima County	David Haws	WQWebPortal

Attachments:

Document Name Or Description	Document Name
WAR046014_5_03052018032846	Appendix A - Annual Outreach S_5_03052018032846
Good Housekeeping O&M Plan_County_11222017	Good Housekeeping O and M Plan_County_11222017
WAR046014_1_03092018103334	RSWMP FY 2018_03092018_1_03092018103334
Submitted Copy of Record for Yakima County	Copy of Record YakimaCounty Friday March 9 2018
Appendix A. thru F. GH_O&M Plan	Appendix A. thru F. GH_O and M Plan
WAR046014_6_03052018032846	Question 6 (S5.B.2.a) Response_6_03052018032846
WAR046014_2_03052018032614	Utility Area_2017_2_03052018032614

Attestation Agreed to at Signing:

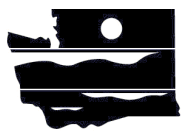
I certify I personally signed and submitted to the Department of Ecology an Electronic Signature Agreement. I understand that use of my electronic signature account/password to submit this information is equal to my written signature. I have read and followed all the rules of use in my Electronic Signature Agreement. I believe no one but me has had access to my password and other account information.

I further certify: I had the opportunity to review the content or meaning of the submittal before signing it; and to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I intend to submit this information as part of the implementation, oversight, and enforcement of a federal environmental program. I am aware there are significant penalties for submitting false information, including possible fines and imprisonment.

For Ecology Use Only



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DEPARTMENT OF
ECOLOGY
State of Washington

Water Quality Program

Permit Submittal Electronic Certification

Permittee: Yakima County

Permit Number: WAR046014

Site Address: 128 N 2ND ST
Yakima, WA 98901

Submittal Name: MS4 Annual Report Phase II Eastern

Version: 1

Due Date: 3/31/2018

Questionnaire

Number	Permit Section	Question	Answer
1	S5.A.3	Attach updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.3)	RSWMP FY 2018_03092018_1_03092018103334
2	S9.D.5	Attach a map and copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period per S9.D.5.	Utility Area_2017_2_03052018032614
3	S5.A.4.a.ii	Tracked the estimated costs of implementation of each component of the SWMP. (S5.A.4.a.ii)	Yes
4	S5.A.5.b	Coordinated among departments within the jurisdiction to eliminate barriers to permit compliance. (S5.A.5.b)	Yes
5	S5.B.1.a and b	Attach description of public education and outreach programs and stewardship activities conducted per S5.B.1.a and b.	Appendix A - Annual Outreach S_5_03052018032846
6	S5.B.2.a	Describe the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. (S5.B.2.a)	Question 6 (S5.B.2.a) Response_6_03052018032846
7	S5.B.2.b	Posted the updated SWMP Plan and latest annual report on your website no later than May 31. (S5.B.2.b)	Yes
7b	S5.B.2.b	List the website address.	http://www.yakimacounty.us/1732/Stormwater-Management
8	S5.B.3.a	Maintained a map of the MS4 that includes the requirements listed in S5.B.3.a.	Yes
9	S5.B.3.b.vi	Implemented a compliance strategy, including informal compliance actions as well as enforcement provisions of the regulatory mechanism described in S5.B.3.b. (S5.B.3.b.vi)	Yes
10	S5.B.3.b.vii	Updated, if necessary, the regulatory mechanism to effectively prohibit illicit discharges into the MS4 per S5.B.3.b.vii. (Required, if applicable, no later than February 2, 2019)	Yes

11	S5.B.3.c	Implemented procedures for conducting illicit discharge investigations in accordance with S5.B.3.c.	Yes
12	S5.B.3.c.iii	Percentage of MS4 coverage area screened in reporting year per S5.C.3.c.i. (Required to screen 40% of MS4 no later than December 31, 2018 and 12% on average each year thereafter, S5.B.3.c.iii)	100
13	S5.B.3.c.iv	Publicized a hotline telephone number for public reporting of spills and other illicit discharges. (S5.B.3.c.iv)	Yes
13b	S5.B.3.c.iv	List the hotline number.	509-574-2300
14	S5.B.3.c.v	Implemented an ongoing illicit discharge training program for all municipal field staff per S5.B.3.c.v.	Yes
15	S5.B.3.c.vi	Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste. (S5.B.3.c.vi)	Yes
15b	S5.B.3.c.vi	Describe actions.	Central Washington State Fair RSWG Booth, Yakima Arboretum Nature Day Stormwater Education Class, and the 'Water on Wheels' Curriculum shared with 9,167 students and 392 teachers across the county in 38 different elementary, intermediate and middle schools.
16	S5.B.3.d	Number of illicit discharges, including illicit connections, eliminated during the reporting period. (S5.B.3.d)	0
17	S5.B.3.d.iv	Attach a summary of actions taken to characterize, trace and eliminate each illicit discharge found by or reported to the permittee. For each illicit discharge, include a description of actions according to required timelines per S5.B.3.d.iv.	Not Applicable
18	S5.B.3.e	Implemented an ongoing illicit discharge training program for all staff responsible for implementing the procedures and program, as described in S5.B.3.e.	Yes
19	S5.B.4.a	Implemented an ordinance or other regulatory mechanism and enforcement procedures for construction site stormwater runoff control as described in S5.B.4.a.	Yes
20	S5.B.4.b	Reviewed Stormwater Site Plans, including construction SWPPPs for all new development and redevelopment projects. S5.B.4.b.	Yes
20b	S5.B.4.b	Number of site plans reviewed during the reporting period.	6
21	S5.B.4.c	Implemented procedures for site inspection and enforcement of construction stormwater pollution control measures. (S5.B.4.c)	Yes

21b	S5.B.4.c.iii	Number of permitted construction sites inspected during the reporting period, (S5.B.4.c.iii)	4
22	S5.B.4.c	Number of enforcement actions taken during the reporting period based on construction phase inspections at new development and redevelopment projects. (S5.B.4.c)	0
23	S5.B.4.b.ii and S5.B	Trained the staff involved in permitting, plan review, field inspections and enforcement for construction site runoff control. (S5.B.4.b.ii and S5.B.4.c.ii)	Yes
24	S5.B.4.d	Provided information to construction site operators and design professionals about training available on how to comply with the requirements in Appendix 1 and the BMPs in the SWMMEW, or an equivalent document. (S5.B.4.d)	Yes
24b	S5.B.4.d	Cite website address, if located on your website.	http://www.yakimacounty.us/1749/Training
25	S5.B.4.e	The number of construction sites that provided their intent to apply for the "Erosivity Waiver" as described in (S5.B.4.e).	2
26	S5.B.4.e	The number of complaints investigated about sites that have received an "Erosivity Waiver" and describe any enforcement actions taken as a result. (S5.B.4.e)	0
27	S5.B.5.a.	Implemented ordinance or other regulatory mechanism and enforcement procedures as described in S5.B.5.a.	Yes
28	S5.B.5.a.ii(a)	Allowed non-structural preventive actions and source reduction approaches such as Low Impact Development techniques to be used. (Required no later than December 31, 2017, S5.B.5.a.ii(a))	Yes
29	S5.B.5.a.ii(b)(2)	Required projects approved under S5.B.5 to retain runoff generate on-site for, at a minimum, the 10-year, 24-hour rainfall event or a local equivalent, using either on-site or regional stormwater facilities. (Required no later than December 31, 2017, S5.B.5.a.ii(b)(2))	Yes
31	S5.B.5.b	Implemented procedures for post-construction site plan review. (S5.B.5.b)	Yes
32	S5.B.5.c.ii	Inspected post-construction stormwater controls, including structural BMPs, during installation at new development and redevelopment projects. (S5.B.5.c.ii)	Yes
32b	S5.B.5.c.ii	Number of sites inspected during the reporting period. (S5.B.5.c.ii)	4
33	S5.B.5.c	Number of enforcement actions taken during the reporting period? (S5.B.5.c)	0
34	S5.B.5.c.iii	Inspected structural BMPs at least once every five years after final installation. (S5.B.5.c.iii)	Yes
34b	S5.B.5.c.iii	Number of BMPs inspected during the reporting period. (S5.B.5.c.iii)	0
35	S5.B.5.d	Trained the staff involved in permitting, plan review, inspection and enforcement for post-construction stormwater control. (S5.B.5.d)	Yes

36	S5.B.6.a	Reviewed and, if needed, updated Operations and Maintenance Plan. (Required no later than August 1, 2017, S5.B.6.a).	Yes
37	S5.B.6.a	Implemented the schedule of Operation and Maintenance activities for municipal operations. (S5.B.6.a)	Yes
38	S5.B.6.a.i (f) and (Have NPDES permit coverage for all applicable Permittee construction projects and industrial facilities. (S5.B.6.a.i (f) and (g))	Yes
39	S5.B.6.a.ii (a)	Inspected stormwater treatment and flow control facilities (except catch basins) owned or operated by the Permittee at least once every two years. (S5.B.6.a.ii (a))	Yes
39b	S5.B.6.a.ii (a)	Number of facilities inspected during the reporting period. (S5.B.6.a.ii (a))	3279
41	S5.B.6.a.ii (b)	If used an alternative to standard schedule for catch basin inspections for all or a portion of the MS4, attach description of the method used. (S5.B.6.a.ii(b))	Not Applicable
42	S5.B.6.a.ii(c)	Conducted spot checks of stormwater facilities after major storms. (S5.B.6.a.ii (c))	Yes
43	S5.B.6.b	Trained the staff with primary construction, operations, or maintenance job functions that are likely to impact stormwater quality. (S5.B.6.b)	Yes
44	S7.A	Complied with the Total Maximum Daily Load (TMDL)-specific requirements identified in Appendix 2. (S7.A)	Not Applicable
45	S7.A	For TMDLs listed in Appendix 2: Attach a summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter(s). (S7.A)	Not Applicable
46	S8.A	Attach a description of any stormwater monitoring or stormwater-related studies as described in S8.A.	Not Applicable
47	S8.B	Participated in the regional group to select, develop and conduct effectiveness studies as described in S8.B.	Yes
48	G3	Notified Ecology in accordance with G3 of any discharge into or from the Permittees MS4 which could constitute a threat to human health, welfare or the environment. (G3)	Yes
49	G3.A	Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A.	Yes
50	G20	Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance. (G20)	Yes
51	G20	Number of non-compliance notifications (G20) provided in reporting year.	0
51b	G20	If applicable, list permit conditions described in non-compliance notification(s).	Not Applicable
52	S4.F.3.d	Attach a summary of the status of implementation of any actions taken pursuant to S4.F.3 and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period. (S4.F.3.d)	Not Applicable

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

David Haws

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Signature

Date

REGIONAL STORMWATER MANAGEMENT PROGRAM

FOR YAKIMA COUNTY

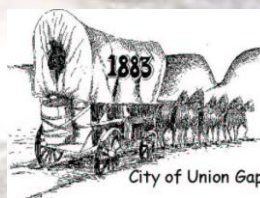
AND THE CITIES OF SELAH, UNION GAP AND SUNNYSIDE

**IN COMPLIANCE WITH THE EASTERN WASHINGTON PHASE II MUNICIPAL
STORMWATER PERMIT**

**WAR04-6008, CITY OF SELAH
WAR04-6009, CITY OF SUNNYSIDE
WAR04-6010, CITY OF UNION GAP
WAR04-6014; YAKIMA COUNTY**

PROGRAM - YEAR 11

APRIL 2018



[Regional Stormwater Management Program](#)

March 9, 2018

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Abbreviations and Acronyms

AKART – All Known, Available, and Reasonable methods of control and Treatment

BMP – Best Management Practice

Co-permittees – Yakima County, City of Yakima, City of Union Gap, City of Sunnyside

DDD - Dichlorodiphenyldichloroethane

DDE – Dichlorodiphenyldichloroethylene

DDT – Dichlorodiphenyltrichloroethane

Ecology – Washington State Department of Ecology

ESA – Endangered Species Act

GIS - IDDE – Illicit Discharge Detection and Elimination

ILA – Interlocal Agreement or Intergovernmental Local Agreement

LID – Low Impact Development

MEP – Maximum Extent Practicable

MS4 – Municipal Separate Storm Sewer System

NOI – Notice of Intent

NPDES – National Pollutant Discharge Elimination System

O&M – Operation and Maintenance

PAH – Polyaromatic Hydrocarbon

POTW – Publicly Owned Treatment Works

RCW – Revised Code of Washington State

RSL – Regional Stormwater Lead

RSWG – Regional Stormwater Working Group

RSWMP – Regional Stormwater Management Program

SWPPP – Stormwater Pollution Prevention Plan

SWMP – Stormwater Management Program

TBD – to be determined

TMDL – Total Maximum Daily Load

TSS – Total Suspended Solids

UA – Urbanized Area

UGA – Urban Growth Area

UIC – Underground Injection Control

USEPA – United States Environmental Protection Agency

VE – Value Engineering

WAC – Washington Administrative Code

YCHD – Yakima County Health District

1 Introduction

The purpose of this document is to provide compliance with the Eastern Washington Phase II Municipal Stormwater Permit issued by the Washington State Department of Ecology (Ecology) that requires written documentation of stormwater management programs (SWMPs) developed and implemented by permittees.

There are five permittees in Yakima County (Yakima County, City of Yakima, City of Selah, City of Union Gap, and City of Sunnyside) that discharge stormwater from their Municipal Separate Storm Sewer Systems (MS4s) and have obtained permit coverage from Ecology. Four municipalities initially were regional co-permittee partners described by an interlocal governmental agreement (ILA) signed July 5, 2007, amended in 2009. As of July 8, 2014, the City of Yakima withdrew from the ILA, and the City of Selah joined the regional partnership July 8, 2014. The current Phase II Municipal Stormwater Permit is set to expire July 31, 2019. Ecology is in the process of updating the existing permit and should be soliciting comments from permittees and the public sometime in the spring of 2018. .

For clarity, this plan will use the term **co-permittees** or **Regional Stormwater Working Group (RSWG)** to refer to those participating regionally. If no jurisdictions are participating regionally, this plan will refer to only those activities that pertain to Yakima County. The lead municipality of the RSWG is the Water Resources Division of Yakima County Public Services Department.

The primary goal of the Regional Stormwater Management Program (RSWMP) and the RSWG is to meet permit regulatory requirements and justify commitment of resources. The permit assumes that compliance with activity-based permit requirements will improve water quality in nearby streams and lakes. A secondary goal is to provide a basis for feedback to the management program.

The geographic area of responsibility for the activities described in this plan for Yakima County is the area that is described in the Yakima County Code 12.09. The geographic area of responsibility for the Cities are the urbanized growth areas for those respective Cities which is commonly described as all of the area that lies within the city limit boundaries. Areas of Union Gap's growth management area and US Census areas that overlap the Yakama Nation reservation are not included since Ecology and Yakima County have limited jurisdictional authority, and the U.S. Environmental Protection Agency (USEPA) regulates the National Pollutant Discharge Elimination System (NPDES) program on reservations. As a result of the 2010 US Census, new areas now meet the definition of "urban" and will be part of the permit program for Yakima County. These areas are also identified in [Figure 1](#).

Permittees must develop SWMPs that contain minimum performance measures in eight required program elements. Descriptions of the performance measures that the regional co-permittees will perform are the core of this document. For context, the regulatory and physical environment as related to stormwater is provided to support the performance measures. Each performance measure identifies whether it is part of the ILA, contains a goal, describes existing or related activities, presents measurable activities to meet the goal, identifies documentation needed for assessment and describes responsibilities.

The RSWMP is based on permit requirements, previous work by consultants and an interlocal governmental agreement between the communities for stormwater permit coverage. It builds on those works by specifying actions, setting measurable activities and identifying how to measure the success of the actions. Full implementation of the stormwater program will be a long-term, iterative process, thus this document is designed as a living document, easily adapted as performance measures are implemented, evaluated, and revised if needed. The Water Resources Division of Yakima County Public Services, in collaboration with other city and county departments developed this document. Copies, and other regional stormwater information, can be obtained in the 4th Floor Courthouse main lobby, [the Regional Stormwater website](#), or by contacting the SWMP at 509-574-2300.

1.1 Regulatory Environment

The Clean Water Act, enacted in 1972, contains the legal requirement for protecting the quality of waters of the nation. The Act authorizes the USEPA Administrator to carry out its requirements. USEPA initially focused water quality improvement efforts on reducing discharges of pollutants from pipes (point sources), primarily wastewater from industrial processes and municipal sewer treatment facilities.

Diffuse sources of pollutants (non-point sources) also contribute to water pollution nationwide. Runoff from stormwater can collect pollutants as it flows across the landscape and discharges to surface and ground water. As a result, USEPA has begun to regulate urban stormwater discharges by requiring municipalities to obtain National Pollutant Discharge Elimination System (NPDES) permits for stormwater.

Phase I of the NPDES Stormwater Program began in 1990. Large and medium size municipalities with populations greater than 100,000 were required to develop and implement SWMPs. Phase II of the regulations requires small municipalities (<100,000) and contiguous areas with smaller – but still urban – communities to develop and implement SWMPs. In February 2007, the Department of Ecology issued the Eastern Washington Phase II Municipal Stormwater Permit, requiring the co-permittees to submit a Notice of Intent (NOI) seeking coverage and to comply with the terms of the permit.

Phase II communities must implement performance measures that reduce pollutants in stormwater to the “maximum extent practicable” (MEP). MEP is the technology-based standard established by Congress in CWA §402(p)(3)(B)(iii). The RSWMP focuses on performance measures that are technically sound and cost effective, while meeting permit requirements.

1.2 Development of the RSWMP

Regional stormwater programs began in 1994 when Yakima County and the City of Yakima completed a Yakima Regional Stormwater Management Plan. Several efforts to regionalize stormwater programs were made over the next 10 years, resulting in the RSWG being formed in 2005. The RSWG consisted of elected officials from the City of Yakima, Union Gap, Sunnyside, and Yakima County whose goal was to review overall program costs and explore mechanisms for further cost savings by regional consolidation. Following Ecology’s issuance of a final Phase II Municipal Stormwater Permit for Eastern Washington in February 2007, the co-permittees signed a three-year ILA for regional permit compliance on July 5, 2007. The original ILA was amended in 2009 for the remaining two permit years. Delay in permit issuance resulted in a subsequent ILA that extends the agreement until the second permit is in effect.

As noted in the introduction, the City of Yakima withdrew from the ILA effective April 1, 2014, and a new ILA was drafted and finalized July 8, 2014 that included the City of Selah.

1.3 Responsible Departments and Officials

As noted, only the City of Selah, City of Sunnyside, City of Union Gap, and Yakima County participated in the 2014 ILA, with Yakima County as the lead for the RSWG. The selected officials listed below are charged with the duties and responsibilities of representing the RSWG from each municipality:

Table 1. RSWG Responsible Personnel under the ILA

Yakima County	City of Selah
David Haws Water Resources Supervisor 128 N. 2 nd St. Fourth Floor Courthouse Yakima, WA 98901 Telephone: (509) 574-2277 Email: david.haws@co.yakima.wa.us	Erin Barnett Stormwater Program Lead 222 S. Rushmore Rd. Selah, WA 98942 Telephone: (509) 698-7331 Email: ebarnett@selahwa.gov
Brian Morgenroth Natural Resources Specialist 128 N. 2 nd St. Fourth Floor Courthouse Yakima, WA 98901 Telephone: (509) 574-2355 Email: brian.morgenroth@co.yakima.wa.us	Joe Henne Public Works Director 222 S. Rushmore Rd. Selah, WA 98942 Telephone: (509) 698-7365 Email: jhenne@selahwa.gov
City of Sunnyside	City of Union Gap
Shane Fisher Public Works Director 818 E. Edison Ave. Sunnyside, WA 98944 Telephone: (509) 837-5206 Email: sfisher@sunnyside-wa.gov	Dennis Henne Director of Public Works & Community Development 3106 1 st St. Union Gap, WA 98903 Telephone: (509) 248-0430 Email: dennis.henne@uniongapwa.gov

1.4 Physical and Economic Environment

Yakima County lies east of the Cascade Range in the south-central region of Washington ([Figure 1](#)). The terrain ranges from the steep, forested slopes of the Cascade Range to relatively flat agricultural lands lying south of Ahtanum Ridge and west of the Yakima River, centered on the town of Harrah. Four generally west-northwest to east trending ridges (Umtanum, Yakima, Toppenish and Ahtanum) bisect the Yakima River basin, creating broad valleys separated by ridgeline gaps. The altitude of the County ranges from 8,184 ft. above sea level in the Cascade Range to about 630 ft. along the Yakima River near Grandview. The Yakima River basin contains a variety of landforms, including the glaciated peaks and deep valleys of the Cascade Range, broad river valleys, and the lowlands of the Columbia Plateau.

Much of the county land area is undeveloped. Agriculture, urban development, and most of the population are concentrated in a 10- to 15-mile-wide band along the Yakima River. Agricultural production ranks first in Washington with a value of \$1.64 billion per year and is the base of the county economy. Fertile silt-loam soils of the Yakima River Valley and the availability of irrigation yield a diversified range of farm products.

Farm and forest production in the county supports a variety of manufacturing and other activities in the urbanized areas. Food processing, including fruit and vegetable canning, hops production, viticulture and meat packing, are the dominant industries. Employment in the trade, health care and government sectors are the largest of the non-farm industry sectors, accounting for 44 percent of the employment for the

county (46,500 jobs estimated). Yakima County has a high concentration of wholesale trade business, reflecting warehousing of food products. Regional distribution centers, Interstate Highway 82 and one of the main Burlington Northern Santa Fe rail lines make the area a transportation focus in the central part of the state.

Sixty-six percent of the county population resides within incorporated communities. The City of Yakima is the largest municipality, with an estimated population of 93,220 in 2015 (Table 2). The Cities of Yakima and Union Gap are located between Selah Gap in the Yakima Ridge and Union Gap in the Ahtanum Ridge south of the confluence of the Naches and Yakima Rivers (Figure 1). The City of Sunnyside is located in the south-east part of the county, in the lower Yakima River basin between the Horse Heaven Hills and the Rattlesnake Hills, approximately three miles north of the Yakima River (Figure 1).

Table 2. Summary of population and area for regional co-permittees.

City/County	Population	Statewide Rank (within type)	Land Area (Sq Mi)
Yakima County	249,970	8	4,295.4
- Unincorporated County	85,985	9	4,181.6
- Incorporated County	163,985	6	113.8
City of Selah	7,495	97	4.6
City of Union Gap	6,150	111	5.6
City of Sunnyside	16,280	62	7.6

*All numbers based on State of Washington Office of Financial Management, November, 2015 estimates

Summer weather of the Yakima River basin is hot and dry, typical of a continental climate. Winters are moderately cold and relatively dry due primarily to the maritime influence of the prevailing westerly circulation from the Pacific Ocean and a rain shadow effect by the Cascade Mountains. Approximately 75 percent of the annual precipitation occurs from October through March. Annual precipitation varies from more than 100 inches in the Cascade Range to less than 10 inches in the lower elevations. Snowfall in excess of 400 inches falls on the higher slopes of the Cascade Range, and the lower valleys receive from 15 to 20 inches. Stormwater runoff typically occurs under rapid warming events that melt accumulated snow or during localized early summer thunderstorms. Winter temperatures normally range from approximately 20°F at night to approximately 30°F during the day. Temperatures of 0°F or below can be expected in January or February. Normal summer temperatures reach 90°F during the day but cool rapidly to near 60°F at night. Temperatures exceeding 100°F are unusual; however, a few readings over 110°F have been recorded.

1.5 Regional Receiving Waters and Water Quality Standards

Stormwater from the regional MS4 is discharged to the following receiving waters: Naches and Yakima Rivers, Ahtanum, Bachelor, Cottonwood, Spring and Wide Hollow Creeks; Selah Ditch and the Sulphur Creek Wasteway. Washington Department of Ecology assigns beneficial uses to these waters that determine water quality standards. Numeric criteria promulgated at Chapter 173-201A WAC protect designated beneficial uses. Regional receiving waters have a range of designated beneficial uses including salmonid spawning, domestic consumption, primary and secondary contact recreation, and aesthetics. Sulphur Creek Wasteway is assigned lesser quality beneficial uses including secondary contact recreation, industrial and stock watering, and wildlife habitat.

In addition to water quality standards, municipal stormwater permits must comply with pollutant discharge load allocations established in water quality improvement projects (also known as Total Maximum Daily Loads, or TMDLs) prepared by Ecology when stream segments do not meet water quality standards. Two (2) water quality improvement projects are “under development” or completed for receiving waters listed above:

1. Moxee Drain, Wide Hollow Creek, and Cowiche Creek, for Fecal Coliform bacteria
2. Yakima River, for Toxics

Selah Ditch has a water quality improvement plan accepted by EPA, so the City of Selah is the only co-permittee that has additional requirements beyond the permit. The co-permittees will continue to participate in technical review discussions with Ecology to ensure that pollutant sources are accurately identified and that additional required stormwater BMPs will be effective in reducing the pollutants of concern.

1.6 Potential Stormwater Pollutants and Impacts on Water Quality

The RSWMP and the permit do not focus on specific pollutants. The permit assumes that required activities will reduce stormwater pollution, unless a water quality impairment has been identified by Ecology and a specific pollutant reduction is required under the Total Maximum Daily Load (TMDL) program.

Pollutants typically found in urban runoff include sediments, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides. To date, no comprehensive analysis of stormwater runoff from the regional MS4 has been conducted to determine relative magnitude of these potential pollutants in regional stormwater; however, specific pollutants have been identified in some regional receiving waters. Documentation of other illicit stormwater pollutant discharges is anecdotal or limited in documentation in County records (e.g. anti-freeze and apple process wastewater from a fruit packing warehouse).

The following is a description of typical stormwater pollutants that may occur in the regional stormwater discharge and their impacts.

Sediment is a common component of stormwater and can be a pollutant when it is detrimental to aquatic life (primary producers, benthic invertebrates, and fish). Sediment can interfere with photosynthesis, respiration, growth, reproduction, and oxygen exchange between aquatic organisms and the surrounding water. In addition, sediment can transport other pollutants that attach to it including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of total suspended solids (TSS), a common water quality analytical parameter. Ecology conducted a total maximum daily load (TMDL) evaluation of the lower Yakima River basin in 1994-1995. Historical and TMDL data indicated significant correlations between TSS and turbidity, and between TSS and total DDT.

Nutrients, such as nitrogen and phosphorous, are essential substances needed by most organisms in some form to sustain life. In particular, nitrogen and phosphorous are commonly found in plant fertilizers that are used on all types of vegetation to promote growth, from residential lawns to agricultural crops, and are often found in stormwater runoff. Excess nutrients in water can accelerate the growth of vegetation, particularly algae, resulting in excessive concentrations that can be toxic to fish and impair the use of water in streams, lakes and rivers. In response to concerns about excessive plant growth degrading the water quality of the lower reaches of the Yakima River, a study was conducted in 2004-07 by the USGS and the South Yakima Conservation District to characterize the nutrient and suspended sediment conditions in these lower reaches, record the extent and severity of exceedance of the state water quality standards and determine if any patterns or conditions related to their testing could be made. Results, published in 2009, indicated that there were elevated concentrations of nitrogen and phosphorous in the lower reaches during certain times in the study period. These higher concentrations of nutrients lead to

abundant growth of algae and other aquatic plants that also negatively affected the pH, temperature and dissolved oxygen in the river.

Pathogens (bacteria and viruses) are common contaminants of stormwater. Sources of these contaminants include animal excrement, sanitary sewer overflow or cross connection, and soil. A TMDL for total coliform bacteria is in place for Selah Ditch, primarily due to stormwater sources from the City of Selah stormwater system. Sulphur Creek Wasteway is under development of a TMDL because it has not met State criteria for fecal coliform.

Oil and grease includes a wide array of petroleum hydrocarbons, some of which are toxic to aquatic organisms at low concentrations. The main sources of oil and grease are leakage from engines, spills at fueling stations, overfilled tanks, restaurant waste or illegal oil disposal. No TMDL studies for oil and grease are currently underway in the Yakima River basin.

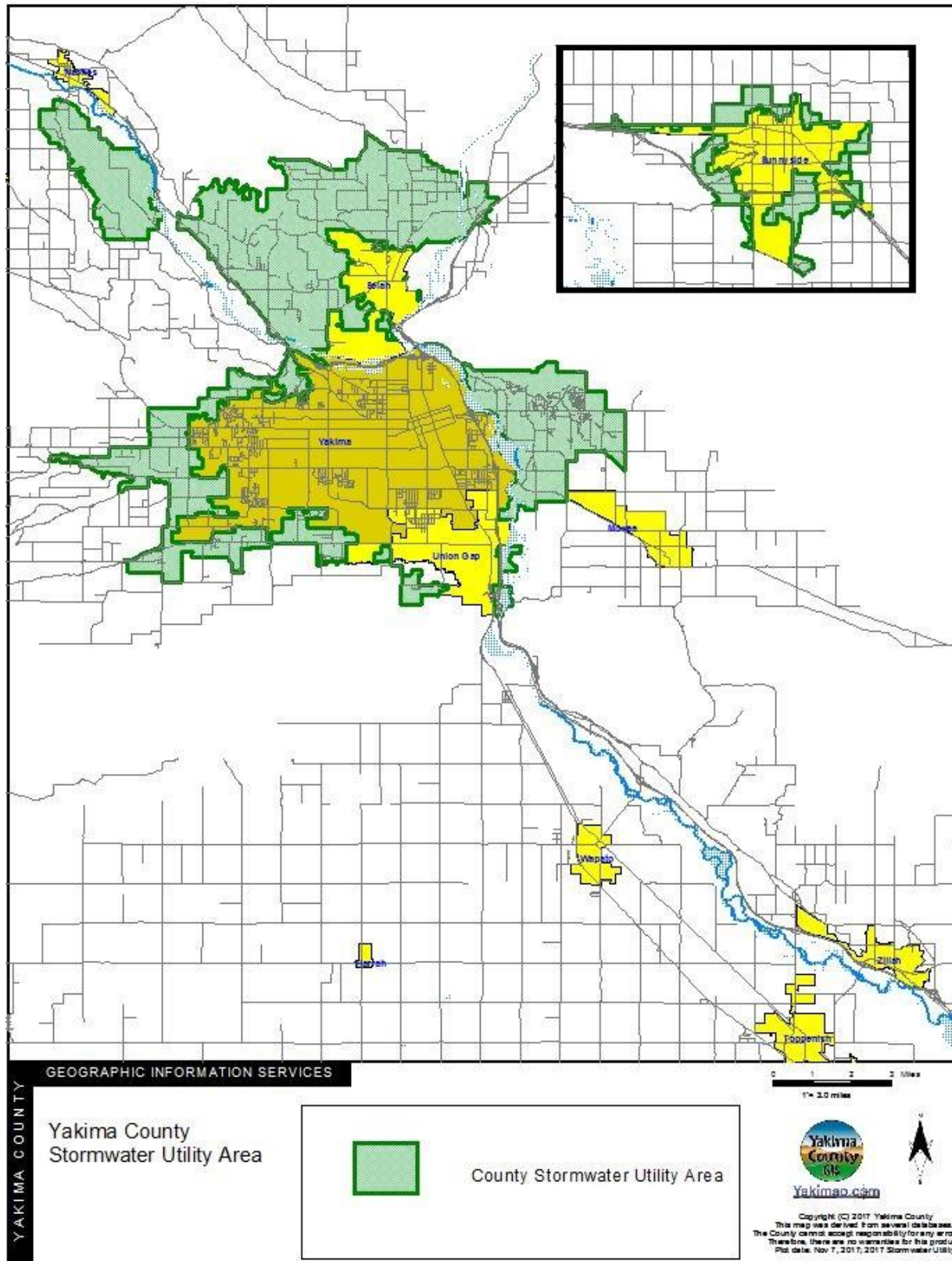
Metals (including lead, zinc, cadmium, copper, chromium and nickel) are commonly found in stormwater. Many of the artificial surfaces of the urban environment (e.g., galvanized metal, paint, automobiles or preserved wood) contain metals, which enter stormwater as the surfaces corrode, flake, dissolve, decay, or leach. Metals are of concern because they are toxic to aquatic organisms, can bio-accumulate (accumulate to toxic levels in aquatic animals such as fish), and have the potential to contaminate drinking water supplies. In 2000 Ecology reported low concentrations of copper, cadmium, mercury, silver, zinc and lead in the Upper Yakima River (Kittitas County).

Organic compounds (including toxic synthetic compounds such as adhesives, cleaners, sealants and solvents) are widely applied and may be improperly stored and disposed. In addition, deliberate dumping of these chemicals into storm drains and inlets causes environmental harm to waterways. No TMDL studies for organic compounds are currently underway in the Yakima River basin.

Pesticides (including herbicides, fungicides, rodenticides and insecticides) have been repeatedly detected in urban stormwater around the country. As use of pesticides has increased, so too have concerns about the potential adverse effects of pesticides on the environment and human health. Accumulation of these compounds in simple aquatic organisms, such as plankton, provides an avenue for bio-magnification through the food web, potentially resulting in elevated levels of toxins in those organisms that feed on them, such as fish and birds. DDT, associated with sediment in irrigation return water to the lower Yakima River basin is currently under a TMDL management plan. Additionally, the Yakima River, Moxee Drain, Wide Hollow and Spring Creeks are under study for DDT, DDD, DDE, chlorpyrifos, dieldrin and endosulfan due to past monitoring that indicated the water bodies don't meet water quality standards for those pollutants. Most of these pollutants are associated with agricultural chemicals that are no longer used and are entering streams through sediments eroding off farmland. In 2009 Ecology reported results for twelve samples collected during six rain storms for runoff in the Cities of Yakima and Union Gap. Stormwater exceeded human health criteria for DDE and PCBs in almost all samples and for DDT, DDD and dieldrin in almost half the samples. However, due to the low number of samples collected and wide range of concentrations found, conclusions about the absolute levels of legacy pesticides in Yakima and Union Gap stormwater are inappropriate without greatly increasing the number of samples collected and the number of collection points. The presence of legacy pesticides suggests that the agricultural history of the area is having an impact on urban stormwater discharges.

Gross Pollutants (trash, debris, and floatables) are common to urban environments and industrial sites and may create an aesthetic "eye sore" in waterways. Gross pollutants also include plant debris (such as leaves and lawn-clippings from landscape maintenance), animal excrement, street litter, and other organic matter. When these substances decay in streams, lakes, and estuaries dissolved oxygen levels are depressed, sometimes causing fish kills. No TMDL studied for aesthetics are currently underway in the Yakima River basin.

Figure 1. Yakima RSWMP Planning Areas



2 Program Elements and Performance Measures

This section describes the eight RSWMP elements (program elements) contained in the permit and the ILA:

- 1) Public Outreach and Education
- 2) Public Involvement and Participation
- 3) Illicit Discharge Detection and Elimination
- 4) Construction Stormwater
- 5) Post-Construction Stormwater
- 6) Pollution Prevention and Good Housekeeping
- 7) Monitoring and Program Evaluation
- 8) Reporting and Record Keeping

The RSWMP addresses the program elements above through the development of performance measures. Each performance measure contains measurable activities that describe specific actions taken to implement the performance measure.

The program elements are organized consistent with the permit structure in Sections S5, S7 and S8. Each program element contains an introductory statement that generally discusses permit requirements and identifies other program elements related to the current program element, called supporting program elements. Fact sheets then describe the performance measures within the program element, state goals, identify existing activities, provide measurable activities, and identify assessment documents. A performance measure fact sheet example is provided ([Figure 2](#)). A table summarizing the performance measures, implementation schedules and responsible departments is provided at the end of each program element.

Figure 0. Performance Measure Template

PERFORMANCE MEASURE
<i>Permit section, name of Performance Measure, implementation deadline ILA=Yes or No</i>
GOAL An anticipated outcome that guides the use of the performance measure.
EXISTING ACTIVITIES This section describes existing activities associated with the performance measure. The regional municipalities may not be responsible for all activities (e.g., volunteer groups and countywide programs), but they affect the local community and represent stormwater management activities already underway. Additional actions implemented by the permittees relating to S5.B of the permit are described here.
MEASURABLE ACTIVITIES This section lists the quantifiable activities that describe how the performance measure will be accomplished and the responsible party. Measurable activities are those actions describing what will be done to comply with the permit. Activities include such things as reviewing or developing a specific number and type of document or procedure, providing a specific number and type of training, etc.
ASSESSMENT This section identifies documentation needed to assess performance measures as required by the permit. The RSWMP Administrator is responsible for assessment documentation.
ACCOMPLISHMENTS This section will list measureable activities accomplished during the previous calendar year. A statement is provided if no activities were required during the previous calendar year.
APPROPRIATENESS This section will contain an evaluation of the appropriateness of the Performance Measure, as required by permit section S8.B.2.

2.1 Public Education and Outreach Program Element

The Public Education and Outreach Program Element focuses on educating the public about the potential impact of stormwater discharges on receiving waters. Increased public knowledge about how their actions and choices affect stormwater and ultimately the water bodies of Yakima County. Public Education should result in increased public acceptance and support of the stormwater program.

2.1.1 Permit Requirements for Public Education and Outreach

Section S5.B.1 of the Eastern Washington Phase II NPDES Stormwater Permit requires permittees to continue to implement public education and outreach program strategies and activities. The strategies shall be designed to reach all target audiences in the jurisdiction.

2.1.2 Supporting Program Elements

The Public Participation and Involvement Program Element works with the Public Education and Outreach Program Element by encouraging citizens to become informed and involved in the stormwater program. Specific outreach tasks are also identified in the Illicit Discharge and Detection Elimination, Construction and Post-Construction Program Elements.

2.1.3 Performance Measures

The 2018 - 2019 Stormwater Public Outreach plan ([Appendix A](#)) will be implemented. The Stormwater Public Outreach plan will be updated annually in an effort to better awareness levels throughout the community, and to continue educate and evaluate current messages and message types, improving message deliverables to target audiences.

Performance Measure

S5.B.1a. Implement the 2014 - 2016 Public Outreach Plan

ILA=Yes

GOAL

Educate the public, businesses and the development community about:

- 1) Potential pollution impacts of stormwater on receiving waters.
- 2) Illicit discharges.
- 3) The impact of development on stormwater pollution.

EXISTING ACTIVITIES

In accordance with the 2016-2018 Public Outreach Plan, a general public message of “Only Rain in the Drain!” is being distributed. See current accomplishments and planned activities below.

MEASURABLE ACTIVITIES

Measureable activities for Public Outreach and Education will be in accordance with the 2016-2018 Public Outreach Plan.

ASSESSMENT

The county has contracted with Water on Wheels to provide in school training curriculum related to stormwater awareness and prevention. Water on Wheels goal is to provide each school within the RSWG’s jurisdiction with the course, and then provide progress and assessment reports quarterly to the RSWG. Additionally and in support of several non-profit organizations throughout the RSWG region, the RSWG provides an “Only Rain in the Drain!” educational course about stormwater awareness and prevention. This course is provided on a weekly to monthly basis, depending on the organization the RSWG is supporting. Students range between the ages of 6-14. At the end of each class, students participate in a check on learning activity. Students are asked to reciprocate one thing they learned during the class, and then they participate in a question and answer activity to reinforce the knowledge learned. They are also provided activity books to help the retention of new information. Upon completion of each class, the total number of students is recorded, as well as the location in which they reside within our community. In 2017, the Water on Wheels program engaged with 9,167 students and 392 teachers across the county in 38 different elementary, intermediate and middle schools. For 2018, the Water on Wheels curriculum has been phased out due to upgrades to the program and the need for greater emphasis on Science, Technology, Engineering and Math (STEM) in the classroom. The revised program is called Drain Rangers and will be taught at the 4th thru 6th grade levels in schools throughout the County.

ACCOMPLISHMENTS

The 2016-2018 Public Outreach Plan focused on a broad range of audiences, with approximately 70% being directly focused youth education and awareness. Utilizing the “Only Rain in the Drain!”, originally developed by Asotin County under an Ecology Grant of Regional or Statewide Significance (GROSS) grant, the RSWG continues to develop awareness and prevention materials to educate our youth, and provide training tools through several marketing channels. The message was distributed through extensive community program activities, website outreach services, online videos, and social media sites. This year’s efforts continued into the broadening our direct “community marketing” concepts.

Community networking's created several inlets toward educating our youth in our previous 2015 year and again in 2016. One of these programs, which began supporting in 2015 includes the conducting of weekly 1-hour Stormwater education classes for the Yakima Arboretum, Nature Day Camps. On average, about 100 children between the ages of 6-12 years old are being educated annually through these classes which run weekly from July to August. We are expected to instruct again in 2018; making it our fourth year of participation.

Figure 3. Arboretum Nature Day Camp, Stormwater Education Class (2017).



The regional stormwater program reached out to children and the public in 2017 during the Central Washington State Fair; which provides a booth annually for stormwater education. RSWG and Co-permittee's personally staffed the booth and provided a large quantity of stormwater education and awareness give-away items for a broad range of target markets. Children had the opportunity to play with the Enviro-scape model, see the effects of stormwater on a parking lot through the WARDS simulator (Figure 4), and spin the Wheel of Stormwater Questions (Figure 4) and then received a prize for correct answers. In 2016 we were honored to be able to add the Yakama Nation and Yakima Valley Community College to our booth participation. Staff were available to answer questions about the stormwater program, and educate the public on how to identify and report illicit discharges.

Lastly, specific businesses were identified as part of the outreach plan. Training materials were developed targeting these businesses and were made available through our stormwater outreach website for dissemination. Brochures and newsletters are also available at the front counter of Public Services that provide details on BMPs and recent stormwater activities.

Figure 4. Wheel of Stormwater Question (left); WARDS simulator display (right) - 2017 Central Washington State Fair Booth.



APPROPRIATENESS

Public Outreach is very appropriate, especially during the interim permit period. Most permit compliance efforts in 2017 have been focused on Public Outreach.

2.2 Public Involvement and Participation Program Element

The Public Involvement and Participation Program Element provides opportunities for the public to become involved in decisions related to reducing pollutants in stormwater. Through participation, the public provides valuable input and assistance in program development and implementation. Increased public involvement and participation result in increased public acceptance and support of the program, and help to ensure a successful and effective program.

2.2.1 Permit Requirements for Public Involvement and Participation

Continue to provide ongoing opportunities for the public to participate in SWMP decision-making. Post online annual reports and SWMP Plan for previous calendar year by May 31 of each year.

2.2.2 Supporting Program Elements

The regional stormwater website (Public Education and Outreach Program Element) will provide an accessible means of disseminating the RSWMP information.

2.2.3 Performance Measures

PERFORMANCE MEASURE

S5.B.2 Public Input on RSWMP

ILA=Yes

GOAL

Promote public participation in the design and implementation of the RSWMP. The RSWMP document provides the blueprint for regional compliance with the Permit. Public input will be solicited on this document to ensure all interested parties have a voice in activities that are conducted to comply with the Permit and reduce potential impacts associated with stormwater discharge from the regional co-permittees.

EXISTING ACTIVITIES

The regional municipalities comply with existing State and local public notice requirements regarding the adoption of public plans or policies implemented by their respective jurisdictions.

A specific public input opportunity has been conducted in past years to describe the program and solicit input. These meetings that are open to the public to attend take place every month, have been sparsely attended. Notifications of the meeting times and dates are announced on our Newsletter, Website, and Social Media pages. Due to the lack of public participation, no changes to the program have been implemented.

MEASURABLE ACTIVITIES

1. Yakima County has posted the RSWMP document on the Regional Stormwater web page and updated at least annually.
2. The RSL publishes the date and time of each meeting on multiple advertising outlets in an effort to bring awareness to the public and seek participation.

ASSESSMENT

1. Receive, address and log comments received at any time of the year regarding the RSWMP.

ACCOMPLISHMENTS

- No RSWMP comments were received during the past calendar year.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP.

2.3 Illicit Discharge Detection and Elimination (IDDE) Program Element

Most urban storm drain systems convey flows other than stormwater. These non-stormwater discharges enter the storm drain system from a variety of sources, such as landscape irrigation or car washing, and illicit discharges (sources of pollutants that enter the storm drain system through illicit connections and illegal dumping). Non-stormwater contributions and illicit discharges are potential sources of pollutants discharged from the MS4 that may adversely impact receiving waters. The Eastern Washington Phase II NPDES Stormwater Permit requires the co-permittees to “detect and eliminate” non-stormwater discharges to the storm drain system.

2.3.1 Permit Requirements for Illicit Discharges

The Eastern Washington Phase II NPDES Stormwater Permit requires the regional co-permittees to continue implementing the enforceable mechanism to prohibit illicit discharges, compliance strategy, IDDE and municipal staff training, citizen hotline and IDDE response, and maintain map of MS4.

2.3.2 Supporting Program Elements

Many City and County operations such as hazardous waste pickup activities, MS4 and DID maintenance, street sweeping and roadwork, partially address this program element’s intent. Regional co-permittees have some form of prohibition in their code making it illegal to pollute the storm drain system. The Public Education and Outreach Program and Municipal Operations/Good Housekeeping Program elements also inform public employees, businesses, and the public of hazards including human and environmental health risks associated with illegal discharges and improper disposal of waste.

2.3.3 Performance Measures

PERFORMANCE MEASURE

S5.B.3 Maintain map of MS4

ILA=No

GOAL

A map of the MS4 is required to effectively identify extent of the storm drain system, identify where pollutants may enter the system and prevent illicit discharges. Ecology requires permittees to maintain a map of their stormwater system and update the map as changes occur.

EXISTING ACTIVITIES

The MS4 has been mapped in the County and cities in accordance with the current permit.

The Construction Activities and Post-Construction SMP Elements both require knowledge of the MS4 location to determine if proposed activity will discharge to the MS4 and is therefore regulated. A general permit requirement is to conduct spot checks of the MS4 following storms with a return frequency greater than the 10 year event. A knowledge of the system location is critical to this task.

MEASURABLE ACTIVITIES

Document changes made to GIS layers that were used to develop the system maps.

ASSESSMENT

1. List of changes made to map layers. GIS metadata is an ideal vehicle to maintain a log or list of changes.

ACCOMPLISHMENTS

- GIS mapping is continuously updating as new MS4 locations are installed.
- MS4s are also being updated directly via ArcGIS Collector.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in our SWMP. Mapping, followed by smoke testing to confirm connections, has resulted in removal of illicit and non-stormwater connections from the MS4. Mapping has also identified areas where outfalls can be eliminated, reducing the impact of flow and pollutants to receiving waters. Improvements to water quality should result from removal of illicit connections.

PERFORMANCE MEASURE

<i>S5.B.3 Continue Enforcement of Illicit Discharge Ordinances</i>
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<i>ILA=No</i>

GOAL

Enforce ordinances to prohibit illicit discharges to the storm drain system.

EXISTING ACTIVITIES

Yakima County Health District (YCHD) enforces County ordinances for solid waste disposal, sewage disposal, and does outreach, inspections, and enforcement particularly as relates to septic tanks and septic tank pumps. YCHD investigates improper sewage disposal practices as reported by the public. These activities reduce the likelihood of stormwater contamination from improperly maintained or sited septic systems.

Garbage collection is voluntary in the unincorporated County, although there are ordinances against unauthorized dumping and unlawful accumulation. Garbage service is required in Yakima, Sunnyside and Union Gap.

All jurisdictions have ordinances prohibiting illicit connections and discharge to their MS4.

MEASURABLE ACTIVITIES

Yakima County and each jurisdiction will maintain a log of illicit discharge and connection calls, observations and complaints; maintain a record of their notification and follow-up to resolve the discharge or connection.

ASSESSMENT

Number and types of cases will be reviewed and used for input into the Public Outreach program as appropriate. Construction track-out has been identified as a consistent IDDE issue and has been included for a targeted outreach campaign in 2017-2019.

ACCOMPLISHMENTS

City of Selah reported 0 cases; City of Sunnyside reported 0 cases; City of Union Gap reported 0 cases; Yakima County reported 1 case which turned out to be an illegal dumping incident.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Water quality should improve over time as code enforcement personnel contact potential violators, public education messages highlight the new requirement and illicit connections are removed as a result of the ordinance.

PERFORMANCE MEASURE

S5.B.3 Continue IDDE Response Activities

ILA=No

GOAL

Continue procedures for consistent regional investigations to detect and address non-stormwater discharges to the regulated MS4, including spills, illicit connections, and illegal dumping.

EXISTING ACTIVITIES

The regional co-permittees have programs to address spills and illegal dumping of hazardous materials, including those that may reach the MS4. In the event of a spill, local emergency response agencies within the County are supplemented by a Regional Response Team and Ecology. Illegal dumping of hazardous materials is regulated by State Dangerous Waste requirements (WAC 173-303-145) and the Uniform Fire Code.

MEASURABLE ACTIVITIES

1. Each jurisdiction will continue to implement procedures for the following activities required by the permit:
 - Locating priority areas;
 - By 12/31/2018, field assess 40% of the MS4 and on average 12% each year thereafter to detect and identify illicit discharges and connections
 - Characterizing discharges found by or reported to the Permittees;
 - Tracing the source of illicit discharges;
 - Ending the discharge.

The collection of procedures and their implementation shall constitute the illicit discharge detection and elimination “program” required by §S5.3.c of the permit.

2. Yakima County will report all illicit discharge activity in their annual reports.
3. Due to changes to the Department of Ecology EAGL reporting system, all RSWG partners will be reporting their illicit discharge activity separately within their own report.

ASSESSMENT

1. Document activities to identify and eliminate non-stormwater discharges.
2. Record citizen complaints and responses regarding illicit discharges to the storm drain system.
3. Record illicit discharges identified, investigated, including date and location of incident, type and quantity of material dumped or discharged, and municipal response.
4. Document enforcement actions taken to eliminate illicit discharges.

ACCOMPLISHMENTS

- Dry weather inspections were undertaken during maintenance activities.
- No inspections resulted in source tracing.
- No formal enforcement actions were taken by the co-permittees.

APPROPRIATENESS

Identification and removal of illicit discharges and connections will improve water quality discharged from the regional MS4s to area water bodies.

PERFORMANCE MEASURE

S5.B.3 Maintain Illicit Discharge Hotline

ILA=Yes

GOAL

Advertise and maintain a regional hotline for receipt of calls reporting illicit discharges. A hotline or telephone number for receiving public observations or complaints related to illicit discharge is required by the Permit.

EXISTING ACTIVITIES

Related activities include those systems in place to take emergency calls related to hazardous materials or illegal dumping.

MEASURABLE ACTIVITIES

1. The RSL will use a call log database to track illicit discharge reports and follow-up actions.
2. Co-permittees will forward calls to the hotline when appropriate, or notify County stormwater staff when illicit discharge calls are received by their jurisdictions.

ASSESSMENT

1. Maintain a database of calls received and follow-up actions taken.

ACCOMPLISHMENTS

- Hotline was established in 2007. The number is 509-574-2300.
- One call was received in 2017 and logged into the database. The call was to report illegal dumping in a roadside ditch. Follow-up was conducted and no enforcement action was necessary.
- Yakima County administration call taking staff were trained on how to use the call log.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. It is anticipated that hotline use will increase as the public becomes more aware of stormwater problems through the public education program.

PERFORMANCE MEASURE

S5.B.3 IDDE and Municipal staff training

ILA=Yes

GOAL

Train staff that 1) receive calls about illicit discharges, 2) may encounter illicit discharges in the course of their work, and 3) will investigate illicit discharges. Training will be tailored to each group of employees and focus on specific procedures developed under other Performance Measures in this Program Element.

EXISTING ACTIVITIES

Most employee groups already conduct some form of regular training on procedures, safety, or trade specific practices. Illicit discharge training is also available at any time upon request of the department. Each training class is one hour in length. Any field employee associated with the RSWG is supposed to undergo training. The class is also open to public members to register. Each class has seating for 20 persons.

MEASURABLE ACTIVITIES

1. Yakima County presently offers training classes on an as requested basis; which is available for all RSWG members, their employees, and the public for participation.
2. RSWG members will identify appropriate personnel within their municipalities and provide opportunities for staff to be trained.

ASSESSMENT

1. Document training events. Include number of employees, class rosters, locations.
2. Maintain training presentations for each group of employees.

ACCOMPLISHMENTS

- Individual refresher trainings are available upon request for ILA partners and personnel within their municipality.

APPROPRIATENESS

It is anticipated that as employee awareness goes up, the number of reported discharges to the MS4 will also increase, and the number of municipal spills will go down.

Construction Activities Program Element

Stormwater draining from construction sites can be a significant source of sediment and attached pollutants. Failure to implement adequate erosion and sediment performance measures can result in higher contributions of sediment to waters than previously contributed from undisturbed land. Excessive sediment loading can result in impacts to water quality. In addition, erosion and sediment transport are vehicles for other pollutants associated with construction activities (such as solvents, petroleum products, trash, pesticides, fertilizers, concrete and paint). Track-out from construction sites continues to be a common source of illicit discharge complaints.

2.3.4 Permit Requirements for Construction Activities

The Eastern Washington Phase II NPDES Stormwater Permit requires the regional municipalities to continue implementing and enforcing program to reduce pollutants from construction activities, including ordinance, providing information to construction operators on training; site plan review and permitting, inspections, and training.

2.3.5 Supporting Program Elements

Local citizens will be more aware of the importance of protecting stormwater quality through public outreach activities. The public participation and IDDE program elements provide mechanisms for the public to notify co-permittee inspectors of potential water quality issues.

2.3.6 Performance Measures

PERFORMANCE MEASURE

S5.B.4 Enforce Construction Site Stormwater Ordinance

ILA=No

GOAL

Enforce an ordinance to require implementation and maintenance of BMPs for erosion and sediment controls at defined construction sites.

EXISTING ACTIVITIES

Construction Stormwater Permits are required by State regulation for construction sites impacting one acre or more.

Each municipality within the ILA adopted their own ordinance or resolution; which is listed below:

<u>Jurisdiction</u>	<u>Date Adopted</u>	<u>Ordinance/Resolution Number</u>
Yakima County	February 16, 2010	1-2010
City of Selah	August 11, 2016	1768
City of Sunnyside	March 8, 2010	2010-5
City of Union Gap	February 8, 2010	2660

MEASURABLE ACTIVITIES

1. Each jurisdiction will enforce its own ordinance.

ASSESSMENT

1. The number of ordinance enforcement actions will be reported in the annual report.

ACCOMPLISHMENTS

- No enforcement activities were required during the 2017 calendar year.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Water quality should improve over time as code enforcement personnel contact violators, and the public education message regarding illicit discharges because better known.

PERFORMANCE MEASURE

S5.B.4.b. Continue Construction Site Plan Review

ILA=No

GOAL

Implement procedures for review and approval of stormwater best management practices used during construction activities.

EXISTING ACTIVITIES

Construction and development projects are currently required to obtain coverage under the Ecology General Permit for Construction Sites, using BMPs and standards found in the *Yakima County Regional Stormwater Manual*, 2010 and in the *Stormwater Management Manual for Eastern Washington*, 2004.

MEASURABLE ACTIVITIES

1. The co-permittees will review construction project plans that require erosion and sediment control BMPs identified in the ordinance adopted in §S5.B.4.a of the permit.

ASSESSMENT

1. Record the number of erosion and sediment control plans received, reviewed, and approved/disapproved by staff.

ACCOMPLISHMENTS

- Number of construction site plans reviewed and approved in 2017:

	<u>Plans Reviewed</u>	<u>Plans Approved</u>
Yakima County	6	5

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. The procedure and training should help reviewers assure projects are compliant with the ordinance and minimize construction stormwater runoff and improving water quality.

PERFORMANCE MEASURE

S5.B.4.c. Continue Construction Site Inspection

ILA=No

GOAL

Inspect construction sites to ensure that BMPs are installed and functioning correctly to prevent discharge to the MS4.

EXISTING ACTIVITIES

The regional municipalities have established construction inspection programs that ensure building code compliance. Inspectors visit each site during active phases of construction to record the activities conducted at the site and to ensure construction is being completed according to plans.

Public complaints for construction activities are routed to local building departments; some stormwater construction complaints are routed to stormwater staff. All jurisdictions require applicants to obtain an Ecology Construction Stormwater Permit when projects will meet certain thresholds. Erosion and sediment control permit issues with these permits are referred to the Washington Department of Ecology. Construction sites, regardless of size or Ecology permit status, must retain construction sediment on site in all jurisdictions under the illicit discharge ordinances.

MEASURABLE ACTIVITIES

1. The co-permittees will keep records of inspections and enforcement actions by staff.
2. The co-permittees will provide training to construction site inspection staff including:
 - Erosion and sediment controls and other stormwater quality control requirements for construction activities.
 - Procedures for enforcing code compliance, such as issuance of citations or notices of noncompliance.
 - Jurisdictions may opt to send staff to CESCL training and have staff maintain their certification.

ASSESSMENT

1. Document training events. Include number of employees, class rosters, locations.
2. Record the number of inspections and enforcement actions performed by staff.

ACCOMPLISHMENTS

- Number of construction site inspections and enforcement actions in 2017:

	Site Inspected	Enforcement Actions
Yakima County	4	0

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. The procedure and training should help inspectors assure projects are compliant with the ordinance during inspections. The inspections should help resolve any deficiencies in BMP selection or installation this minimizing construction stormwater runoff and improving water quality.

PERFORMANCE MEASURE

<i>S5.B.4.d Provide Construction Training Opportunity Information</i>

<i>ILA=Yes</i>

GOAL

Gather and provide information on training opportunities in the Pacific Northwest and nationally that are applicable to the proper selection, installation, and maintenance of construction site sediment control BMPs.

EXISTING ACTIVITIES

The RSL provides periodic training opportunity information to the RSWG members and public on the Regional Stormwater Management website.

MEASURABLE ACTIVITIES

1. Yakima County will provide a quarterly list of erosion and sediment control BMP training opportunities on the RSMP website. Sources will include the internet, social media, and newsletters.
2. Co-permittees will provide information they receive on training opportunities through professional contacts or other sources.

ASSESSMENT

1. Maintain a record of training opportunities identified and made available.

ACCOMPLISHMENTS

- Training opportunities were provided on the Regional Stormwater web site as they were available.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Training opportunities were regularly visited on the Regional Stormwater web site.

2.4 Post-Construction SWMP Element

Impacts to water quality caused by development can be minimized through implementing post-construction stormwater quality performance measures. The performance measures and tasks outlined in this section require new development and major redevelopment projects to incorporate post construction stormwater BMPs and to ensure that the measures are operated and maintained once construction is complete.

2.4.1 Permit Requirements for Post-Construction Stormwater Management

The Eastern Washington Phase II NPDES Stormwater Permit requires the permittees to address post-construction stormwater runoff to the MS4 from new development and redevelopment projects within the permit area. Continue to implement ordinance addressing post-construction runoff controls; site plan review and permitting, requiring long-term maintenance; inspections; staff training; and enforcement.

2.4.2 Supporting Program Elements

Public education and outreach programs promote awareness of the importance of stormwater quality controls. Public participation in the development and implementation of the RSWMP will be critical to the plan's success. The Construction Program works in parallel with this program element as sites are inspected during construction and post-construction.

2.4.3 Performance Measures

PERFORMANCE MEASURE

S5.B.5 Enforce Post-Construction Stormwater Ordinances and Conduct Stormwater Plan Review ILA=No

GOAL

Enforce ordinances to require post-construction stormwater runoff controls for discharges to the MS4 from new development or re-development projects discharging to public MS4s.

EXISTING ACTIVITIES

Regional municipalities require new developments to retain stormwater on site, up to a 10- or 25-year design storm, using methods found in the Yakima Regional Stormwater Manual. To obtain short or long subdivision approval, proposed development projects in Yakima County require a site drainage plan demonstrating how stormwater will be retained and infiltrated on site (County Ordinance 14.48.100). For building projects over 4,000 square feet in Sunnyside, a professional architect or engineer must prepare a stormwater disposal system to obtain a building permit.

Ordinances were adopted in February 2010 as follows:

<u>Jurisdiction</u>	<u>Date Adopted</u>	<u>Ordinance/Resolution Number</u>
Yakima County	February 16, 2010	1-2010
City of Selah	August 11, 2016	1768
City of Sunnyside	February 8, 2010	2010-3
City of Union Gap	February 8, 2010	2660

MEASURABLE ACTIVITIES

1. The co-permittees will review construction project plans that require post-construction stormwater BMPs identified in the ordinance adopted in §S5.B.5.a. of the permit.
2. The co-permittees will conduct annual training sessions for post-construction plan review staff as needed, depending on staff turnover.

ASSESSMENT

1. Record the number of post-construction stormwater control plans received, reviewed and approved/disapproved by staff.
2. Document training events. Include number of employees, class rosters, locations.

ACCOMPLISHMENTS

- Number of post-construction site plans reviewed and approved in 2017.

	<u>Plans Reviewed</u>	<u>Plans Approved</u>
Yakima County	6	5

- None of the jurisdictions that reported had any qualifying private post-construction BMP's that required inspection. The first known required inspection on a qualifying location for Yakima County isn't necessary until August, 2021.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Water quality should improve over time as code enforcement personnel contact potential violators, public education messages highlight the new requirement and that proper BMP facilities are selected and designed correctly as a result of the ordinance.

PERFORMANCE MEASURE

S5.B.5. Continue Post-Construction Site Inspections

ILA=No

GOAL

Inspect sites discharging to the MS4 to ensure appropriate post-construction BMPs are installed and functioning correctly.

EXISTING ACTIVITIES

The co-permittees have established construction inspection programs. Inspectors visit each construction site during active phases of public improvements and private development to record the activities conducted at the site and to ensure construction is completed according to approved plans. No similar program exists for follow-up once construction is completed.

Public complaints for flooding and water quality are routed to the Yakima County Flood Control Zone District (FCZD), city public works, or wastewater departments. Response generally consists of a site visit to view the problem and check for physical obstruction, blockage or source control needs to resolve the complaint.

MEASURABLE ACTIVITIES

1. The co-permittees will inspect post-construction BMP sites that discharge to the MS4 to ensure that BMPs are installed in accordance with approved designs.
2. The co-permittees will inspect newly constructed and existing BMPs that discharge to the MS4 to ensure they are performing as designed.
3. The co-permittees will provide training to post-construction site inspectors including BMP types and functions.

ASSESSMENT

1. Record the number of post-construction stormwater control site inspections performed by staff.

ACCOMPLISHMENTS

- Number of post-construction site inspections in 2017:

Site Inspected

Yakima County 4

Private post construction BMPs are required to retain the 10-year storm event and do not discharge to the public MS4. Sites are inspected during rain events to ensure compliance. Public post construction BMPs are inspected during construction to ensure that they are constructed in accordance with design before the jurisdiction takes ownership of the facility.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. The procedure and training should help inspectors assure projects are compliant with the ordinance during inspections. The inspections should help resolve any deficiencies in BMP installation improving water quality by providing for adequate treatment and flow control.

PERFORMANCE MEASURE

<i>S5.B.4 Provide Post-Construction Training Information</i>

<i>ILA=Yes</i>

GOAL

Gather and provide information on training opportunities in the Pacific Northwest and nationally applicable to the proper selection, installation, and maintenance of post-construction stormwater control BMPs.

EXISTING ACTIVITIES

Yakima County provides periodic reports containing training opportunities to the co-permittees. Training information is available on the Regional Stormwater Management website. Training opportunities are also widely available on Ecology's list-serves, via corporate mailings and on online.

MEASURABLE ACTIVITIES

1. Yakima County provides a list of post-construction BMP training opportunities on the RSMP website. Sources include the World Wide Web (internet), newsletters, and social media.
2. Co-permittees provide information they receive on training opportunities through professional contacts or other sources.

ASSESSMENT

1. A record of training opportunities are identified and made available.

ACCOMPLISHMENTS

- Training opportunities were made available on the stormwater web site as they became available.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Training opportunities were regularly visited pages on the Regional Stormwater web site.

2.5 Pollution Prevention & Good Housekeeping for Municipal Operations Program Element

Stormwater discharges from municipal operations conducted by public agencies with permitted MS4's are regulated under the Eastern Washington Phase II NPDES Stormwater Permit.

2.5.1 Permit Requirements for Pollution Prevention and Good Housekeeping

Regulated communities must continue implementation of MS4 O&M plan; inspect stormwater treatment and flow control facilities every two years; conduct spot checks after storm events; conduct O&M and SWPPP requirements for municipal lands and facilities; and train staff.

2.5.2 Supporting Program Elements

Additional performance measures that partially address this program element include detecting and eliminating illicit discharges to the storm drain systems described above in Section [2.3](#).

Some key municipal facilities are already required to develop SWPPP plans for compliance with the Washington Department of Ecology Industrial Stormwater General Permit.

2.5.3 Performance Measures

PERFORMANCE MEASURE

S5.B.6 Follow O&M Plans at Municipal Facilities

ILA=No

GOAL

Perform activities identified in existing Operation and Maintenance Plans (O&M Plans) for designated co-permittee facilities.

EXISTING ACTIVITIES

The regional permittees operate several properties to facilitate their operations: County Jails, County and City corporation yards, wastewater treatment plants, a solid waste transfer station, and a landfill. Many of these facilities are hazardous waste generators and must already have pollution prevention plans to comply with Ecology hazardous waste regulations. Stormwater Pollution Prevention Plans (SWPPP) are required for many of these same sites under the Ecology Industrial Stormwater Permit.

MEASURABLE ACTIVITIES

1. The co-permittees will perform activities identified in O&M plans for municipal facilities.

ASSESSMENT

1. Record O&M Plan implementation and monitoring of activities or operations that potentially impact stormwater quality.

ACCOMPLISHMENTS

- O&M plans were followed in accordance with O&M manuals developed for regional municipal facilities.
- Staff completed a required update of the Good Housekeeping and O&M plans during 2017. .

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. It is anticipated that implementation of the practices identified in the O&M plans will improve water quality discharged from the MS4.

PERFORMANCE MEASURE

S5.B.6 Spot Check MS4s Following >10 Year Events

ILA=No

GOAL

Conduct infrastructure spot checks following storm runoff events following larger storms that may damage the MS4.

EXISTING ACTIVITIES

The regional permittees have ongoing responses to major runoff and flood events. The Yakima County FCZD has a flood response plan. A GIS data layer of runoff has been developed, based on precipitation and impervious surface.

MEASURABLE ACTIVITIES

1. Yakima County will identify >10 year event conditions.
2. Co-permittees and Yakima County will spot check the MS4 following events meeting the >10 year event.
3. Co-permittees and Yakima County will perform needed repair or maintenance as soon as practicable pursuant to the findings of a regular inspection or spot check.
4. Co-permittees and Yakima County will collect inspection form data and compile it for the annual permit report.

ASSESSMENT

1. Retain inspection forms.
2. Report results of inspections and repairs made following >10 year events or regular inspections

ACCOMPLISHMENTS

- No event greater than 10-year, 24-hour event was recorded in 2017.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Spot inspections are an effective method to assess any damage to stormwater flow control and treatment facilities after large storm events (10 year 24 hour recurrence interval).

PERFORMANCE MEASURE

S5.B.6 Conduct Employee Education and Training

ILA=Yes

GOAL

Increase regional municipal employee awareness of stormwater pollutants and BMPs for reducing pollutants from municipal operations. Educate employees in facilities with stormwater O&M plans about plan components and requirements.

EXISTING ACTIVITIES

Training is required by the permit for staff in the illicit discharge and detection program at Section 2.3. Co-permittees have departments that currently train staff on a variety of topics including hazardous materials and safety, which overlaps with pollution prevention and stormwater. Spill prevention plans are already required for hazardous material storage and handling.

Yakima County Water Resources developed and implemented an ongoing training program in 2015. County staff are able to receive training on an as needed or requested basis from the Water Resources Division or their Department Director. . This training is also available for the public and the RSWG members at no added costs.

MEASURABLE ACTIVITIES

1. Co-permittees will identify groups of employees and departments that require training.
2. The RSL will develop and provide training programs for groups of employees identified above.

ASSESSMENT

1. List regional municipal staff groups identified to receive training.
2. Keep a record of training events provided and the training materials presented. Record the date, location and employees in attendance.

ACCOMPLISHMENTS

- Refresher training was made available to all RSWG members through the publication of training materials on the RSWG website.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. It is anticipated that as employees learn about and implement stormwater O&M plans, better BMP maintenance and practices will result in improved water quality discharged from the MS4.

2.6 Monitoring and Program Evaluation Element

The Eastern Washington Phase II Municipal Stormwater Permit contains sampling and program evaluation requirements.

2.6.1 Permit Requirements for Monitoring and Program Evaluation

Ecology does not require permittees to collect water samples during the term of the current permit unless they are characterizing an illicit discharge or complying with a TMDL. Annual reports must include a description of any sampling conducted. The annual report must also include an assessment of the appropriateness of each component of the SWMP and, if changes are anticipated, why those changes are being implemented. Municipalities must prepare for sampling in the next permit cycle by developing a monitoring plan that identifies two monitoring questions, identifies three outfalls, and identifies at least two BMPs for effectiveness monitoring.

2.6.2 Supporting Program Elements

None to date.

2.6.3 Performance Measures

PERFORMANCE MEASURE

S7. TMDL Technical Participation If Appropriate

ILA=Yes

GOAL

Increase permittee participation in the TMDL process to reduce stormwater contribution of pollutants in a specific reach of water potentially impacted by MS4 discharges.

EXISTING ACTIVITIES

City of Selah discharges to a waterbody with a TMDL. The co-permittees participate in TMDLs under development as members of technical advisory groups, including the Yakima Area Creeks projects.

MEASURABLE ACTIVITIES

1. Co-permittees will identify TMDL projects that may involve their MS4 discharges.
2. Co-permittees will comply with TMDL requirements.
3. Co-permittees will participate as Technical Advisory Group members during the TMDL process.

ASSESSMENT

1. List of TMDL projects in proximity to regional co-permittee MS4 boundaries.
2. Maintain a record of TAG attendance.

ACCOMPLISHMENTS

- No activities were required during the previous calendar year.
- Status of TMDLs potentially affecting RSWG partners, as of March 19, 2013 on Ecology's [web site](#).

Waterbody	Pollutant(s)	Status
Mid-Yakima River Basin	Fecal coliform	Under Development
Yakima River	Toxics	Under Development

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. It has not been fully implemented, therefore appropriateness cannot be evaluated.

PERFORMANCE MEASURE

S8.A Water Sampling

ILA=No

GOAL

Collect and report water samples in response to illicit discharge investigations and TMDL requirements.

EXISTING ACTIVITIES

No sampling in related programs occurred in 2017.

MEASURABLE ACTIVITIES

1. Co-permittees will sample in accordance with the illicit discharge investigation procedure (TBD).
2. Co-permittees will report sampling activity annually to Yakima County for inclusion in the annual report.
3. Yakima County will compile sample activity reports from co-permittees and report with the annual permit report.

ASSESSMENT

1. Report sampling information in the annual report.

ACCOMPLISHMENTS

- No sampling occurred. Sampling is a tool used if other IDDE measures do not identify a source(s).

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. It has not been fully implemented, therefore appropriateness cannot be evaluated.

PERFORMANCE MEASURE

<i>S8.B Evaluate Program Performance Measures</i>

<i>ILA=Yes</i>

GOAL

Assess the appropriateness of performance measures for each program element.

EXISTING ACTIVITIES

None to date.

MEASURABLE ACTIVITIES

1. Yakima County will perform assessments of the six stormwater program element performance measures identified by permit sections S5.B.1 through S5.B.6.
2. Co-permittees will provide information and feedback on the appropriateness of each performance measure.
3. Yakima County will report the assessments in each annual report.

ASSESSMENT

1. Document the assessment process.
2. Retain annual reports.

ACCOMPLISHMENTS

- This RSWMP includes an assessment of each Performance Measure for appropriateness.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP.

PERFORMANCE MEASURE

S8.C. Monitoring Preparation	ILA=Yes
-------------------------------------	----------------

GOAL

Prepare to participate in the implementation of a future comprehensive long-term monitoring program described in the permit.

EXISTING ACTIVITIES

Co-permittees will collaborate with other as members of the Eastern Washington Stormwater Group (EWSG) to review effectiveness study ideas, define sub-regions/groups and potential partnerships, compile a list of 12-15 study ideas for EWSG and identify lead entity for each.

MEASURABLE ACTIVITIES

1. Yakima County will participate in a study to help identify and solve BMP Inspection and Maintenance Responsibilities. The goal of this project will be to gather information from Eastern Washington and other similar semi-arid jurisdictions to discover and document the successful ways that these jurisdictions are employing to ensure the proper ongoing maintenance of structural BMP's on private property.

ASSESSMENT

1. Yakima County will be required to complete a Quality Assurance Project Plan (QAPP) in the first half of 2018 for review and approval by Ecology. .

ACCOMPLISHMENTS

- No activities were required during the previous calendar year.

APPROPRIATENESS

This Performance Measure is a permit requirement and is included in the SWMP. Development of monitoring studies is generally considered good practice to direct future monitoring efforts to ensure monitoring is effective and cost effective.

GLOSSARY

Best Management Practices (BMPs) – Best management practices are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to receiving waters.

Maximum Extent Practicable (MEP) – MEP refers to paragraph 402(p)(3)(B)(iii) of the Federal Clean Water Act, which reads as follows: Permits for discharges from municipal storm sewers shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system, design, and engineering methods, and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Measurable Goal – Definable tasks or accomplishments that are associated with a performance measure.

Municipal Separate Storm Sewer System (MS4) – A conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains): (i) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, stormwater, or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) designed or used for collecting or conveying stormwater; (iii) which is not a combined sewer; and (iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - The national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology.

New Development – Land disturbing activities, including Class IV general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

Outfall – Means point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the State and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.

Performance Measure – An activity performed to implement one of the eight permit program elements.

Point Source – Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural runoff.

Program Element – One of the eight program components included in Sections S5.B.1 through S5.B.6, S7, and S8 of the Eastern Washington Phase II Municipal Stormwater Permit.

Redevelopment - The replacement or improvement of impervious surfaces on a developed site.

Return Frequency or Recurrence Interval - A statistical term for the average expected time interval between events (e.g., flows, floods, droughts, or rainfall) that equal or exceed given conditions. Recurrence interval can be converted to probability by dividing the return frequency into one year. For example, a 100-year event has a one percent chance of occurring in any given year ($1/100 = 0.01$); a 5-year event has a 20 percent chance ($1/5 = 0.20$) of occurring in any given year.

Runoff - Water that travels across the land surface, or laterally through the ground near the land surface, and discharges to water bodies either directly or through a collection and conveyance system. Runoff includes stormwater and water from other sources (e.g. snowmelt) that travels across the land surface.

Stormwater Pollution Prevention Plan (SWPPP) – A documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Waters of the State – Those waters as defined as waters of the United States in 40 CFR 122.2 within the geographic boundaries of Washington State and waters of the state as defined in Chapter 90.48 RCW which includes: lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.

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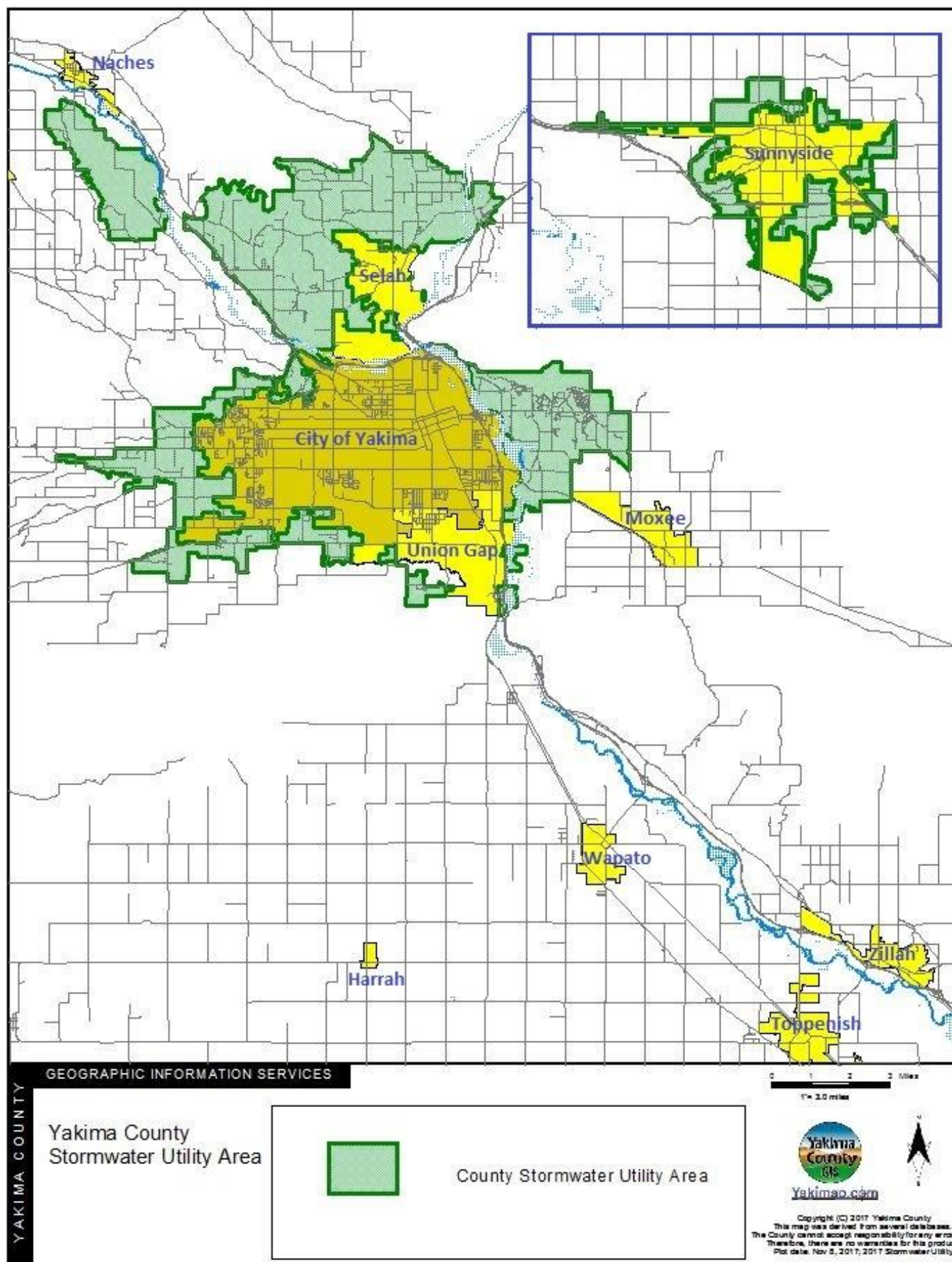
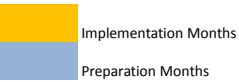


Figure 2. Yakima County NPDES Permit Area shaded in green.

Stormwater Public Outreach Program 2018 - 2019																													
Project Number	Project Name	Activity Performed / Planned	Evaluation Measure (Public)	Evaluation Measure (Internal)	Lead	Jan 2018	Feb 2018	Mar 2018	April 2018	May 2018	June 2018	July 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	April 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
1	Public Media Awareness																												
1a	· Union Gap Newsletter	Union Gap to release quarterly newsletters providing public awareness regarding stormwater issues.	RSWG Public Participation Survey	Activity Analysis Report	Union Gap																								
1b	· City of Sunnyside and Selah Utility/Water Bill Mailer Messages	Selah and Sunnyside to release stormwater mailer messages within their utility/water bills.	RSWG Public Participation Survey	Activity Analysis Report	Sunnyside/ Selah																								
1c	· Central Washington State Fair	Participate in a stormwater awareness booth and have personnel available to answer public questions and provide proactive information.	RSWG Public Participation Survey		Yakima County																								
1d	· Yakima County Website - RSWG Outreach Pages	Develop and provide outreach trainings, activities, and information materials through our county website for public and businesses.	RSWG Public Participation Survey	Activity Analysis Report	Yakima County																								
2	School Coordination																												
2a	· Water on Wheels	Water on Wheels contracted to provide in school stormwater awareness education.	Semiannual reports from Contractor; RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
3	Community Networking																												
3a	· Yakima Valley College (YVC) Seminar	Educational stormwater facility site visits for Biology students.	Lead Activity Providing Organization Feedback (YVC); RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
3b	· Wapato Nature Camp	Provide 6x1-hour stormwater awareness education course to approximately 20-40 students.	Lead Activity Providing Organization Feedback (Wapato Community Center); 2016 RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
3c	· Arboretum Nature Camp	Provide weekly 1-hour stormwater awareness education course to approximately 10-20 students.	Lead Activity Providing Organization Feedback (YVC); RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
4	Social Media																												
4a	· Facebook	Provide stormwater awareness materials, news, and recent activity updates	RSWG Public Participation Survey	Monthly Followership Report	Yakima County																								
5	Effectiveness Monitoring																												
5a	· Public Online Survey (RSWG Public Participation Survey)	Provide an online survey that allows the public to provide feedback regarding stormwater awareness, outreach activities, and general comments.	RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
5b	· Web Stormwater Quizzes	Stormwater awareness knowledge quizzes available for public download and participation online.	RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
6	Public & Business Outreach																												
6a	· Ongoing Stormwater Awareness and Illicit Discharge Classes	Ongoing 1-Hour classes availabel for internal municipality employees and public.	Class Evalution Surveys	Activity Participation and Analysis Report	Yakima County																								
6b	· Slide Presentations	Slide presentations available on website for the the public and businesses to use for training or information purposes.	RSWG Public Participation Survey	Activity Analysis Report	Yakima County																								
6c	· Information Brochures	Informational brochures available on website for the the public and businesses to use for training or information purposes. Hardcopy Brochures are also available within the Public Service Office.	RSWG Public Participation Survey	Activity Analysis Report	Yakima County																								
6d	· Monthly Stormwater Outreach Newsletter	Monthly outreach newsletter that details stormwater related topics, issues, or recent outreach activities.	RSWG Public Participation Survey	Activity Participation and Analysis Report	Yakima County																								
6e	· RSWG Meetings	RSWG meeting conducted every second Thursday of each month. Open to the public for attendance and participation. Meeting agenda and minutes published to the public on website.	RSWG Public Participation Survey	Activity Analysis Report	All																								
6f	· Phone Calls	Answer all calls related to stormwater issues within our jurisdiction.	Direct Public Feedback	Record database for all calls related to an Illicit Discharge report.	All																								





Public Services

128 North Second Street · Fourth Floor Courthouse · Yakima, Washington 98901
(509) 574-2300 · 1-800-572-7354 · FAX (509) 574-2301 · www.co.yakima.wa.us
VERN M. REDIFER, P.E., Director

February 1, 2018

Easter Washington Phase II Municipal Stormwater Permit
2017 Annual Report
Question 6 (S5.B.2.a) Response

Dear Sir or Ma'am,

This letter is in response to Question 6 (S5.B.2.a) of the Eastern Washington Phase II Municipal Stormwater Permit, "Describe the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's Stormwater Management Program (SWMP)."

In 2017, Yakima County continued its participation in an Interlocal Agreement (ILA) with the Cities of Selah, Sunnyside, and Union Gap; which formed the Regional Stormwater Working Group (RSWG) in 2009, and amended in 2014. Yakima County is the lead group member for this ILA and provides the host website for the latest version of the annual report and the SWMP that are available to the public.

The RSWG holds monthly meetings to discuss stormwater activities within the region, including the development, implementation, and updating of our Regional Stormwater Management Program (SWMP). These meetings are open to the public, are held every second Thursday of the month, and rotate between all group member locations for equal and fair public participation opportunities. Advance notice of these meetings are advertised in the RSWG's monthly newsletter and also available on the county's website.

Sincerely,

Brian Morgenroth
Natural Resources Specialist
Yakima County Public Services
Water Resources Division
Desk: (509) 574-2355
Fax: (509) 574-2301
brian.morgenroth@co.yakima.wa.us

STORMWATER POLLUTION PREVENTION AND GOOD HOUSEKEEPING

OPERATION & MAINTENANCE PLANS

YAKIMA COUNTY

**UNINCORPORATED URBAN AREAS &
YAKIMA COUNTY OWNED FACILITIES
WITHIN OTHER MUNICIPAL NPDES PERMIT AREAS**

IN COMPLIANCE WITH THE EASTERN WASHINGTON PHASE II
MUNICIPAL STORMWATER PERMIT

PERMIT NUMBER WAR04-6014



[Regional Stormwater Management Program](#)

November 15, 2017

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Acknowledgements

This stormwater pollution prevention and good housekeeping operation and maintenance plan was funded by the Yakima County Regional Stormwater Management Program including Yakima County and the Cities of Selah, Sunnyside, and Union Gap. A portion of this funding originated from Washington Department of Ecology grants. The Yakima County specific plan was developed from this model plan with assistance from individuals associated with Yakima County and updated in November 2017.

Best management practices (BMPs) and facility specific thresholds to initiate cleaning, repair, and corrective actions were either taken directly or adapted from the Ecology Eastern Washington Stormwater Manual (2004).

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Abbreviations and Acronyms

AKART – All Known, Available, and Reasonable methods of control and Treatment
BMP – Best Management Practice
Co-Permittees – Yakima County, City of Yakima, City of Union Gap, City of Sunnyside
DEM – Digital Elevation Model
DID – Drainage Improvement Districts
Ecology – Washington State Department of Ecology
GIS – Geographical Information Systems
HHW – Household Hazardous Waste
IDDE – Illicit Discharge Detection and Elimination
IDP – Illicit Discharge Potential
ILA – Interlocal Agreement or Intergovernmental Local Agreement
MEP – Maximum Extent Practicable
MS4 – Municipal Separate Storm Sewer System
NPDES – National Pollutant Discharge Elimination System
NOV – Notice of Violation
O&M – Operation and Maintenance
POTW – Publicly Owned Treatment Works
RCW – Revised Code of Washington State
RSL – Regional Stormwater Lead
RSPG – Regional Stormwater Policy Group
RSWG – Regional Stormwater Working Group
RSWMP – Regional Stormwater Management Program
SOP – Standard Operating Procedure
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UA – Urbanized Area
UGA – Urban Growth Area
UIC – Underground Injection Control
USEPA – United States Environmental Protection Agency
WAC – Washington Administrative Code
YCHD – Yakima County Health District

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1. Introduction

The following set of Stormwater Pollution Prevention and Good Housekeeping Operation and Maintenance (O&M) Plans provide guidance to Yakima County to prevent pollutants generated by municipal operations and activities from entering the stormwater drain system.

These plans are required by the Pollution Prevention and Good Housekeeping for Municipal Operations portion (S5.B.6) of the Eastern Washington Phase II National Pollutant Discharge Elimination System (NPDES) Stormwater permit. Yakima County obtained coverage under this permit from the Washington Department of Ecology (Ecology) for discharging stormwater to waters of the state. These plans cover activities within the NPDES permit area consisting of unincorporated urban areas of Yakima County (Figure 2).

Why Stormwater Pollution Prevention?

Many municipal activities can result in stormwater pollution if not conducted properly. Activities such as vehicle maintenance, fueling, and landscaping could produce pollutants that could be carried away by stormwater. Hydrocarbons and heavy metals are deposited on public streets and parking areas from clutch and brake wear, vehicle exhaust, and leaking motor fluids. The cleaning of buildings and walls can introduce soap and particulates, including paint chips, to the storm drain system if precautions are not taken.

Pollutants carried into the storm drain system by stormwater eventually are discharged to surface water or groundwater. These pollutants may adversely impact receiving water quality and threaten aquatic life, wildlife, and human health (Table 1).



Figure 1. Stormwater runoff from a building roof.

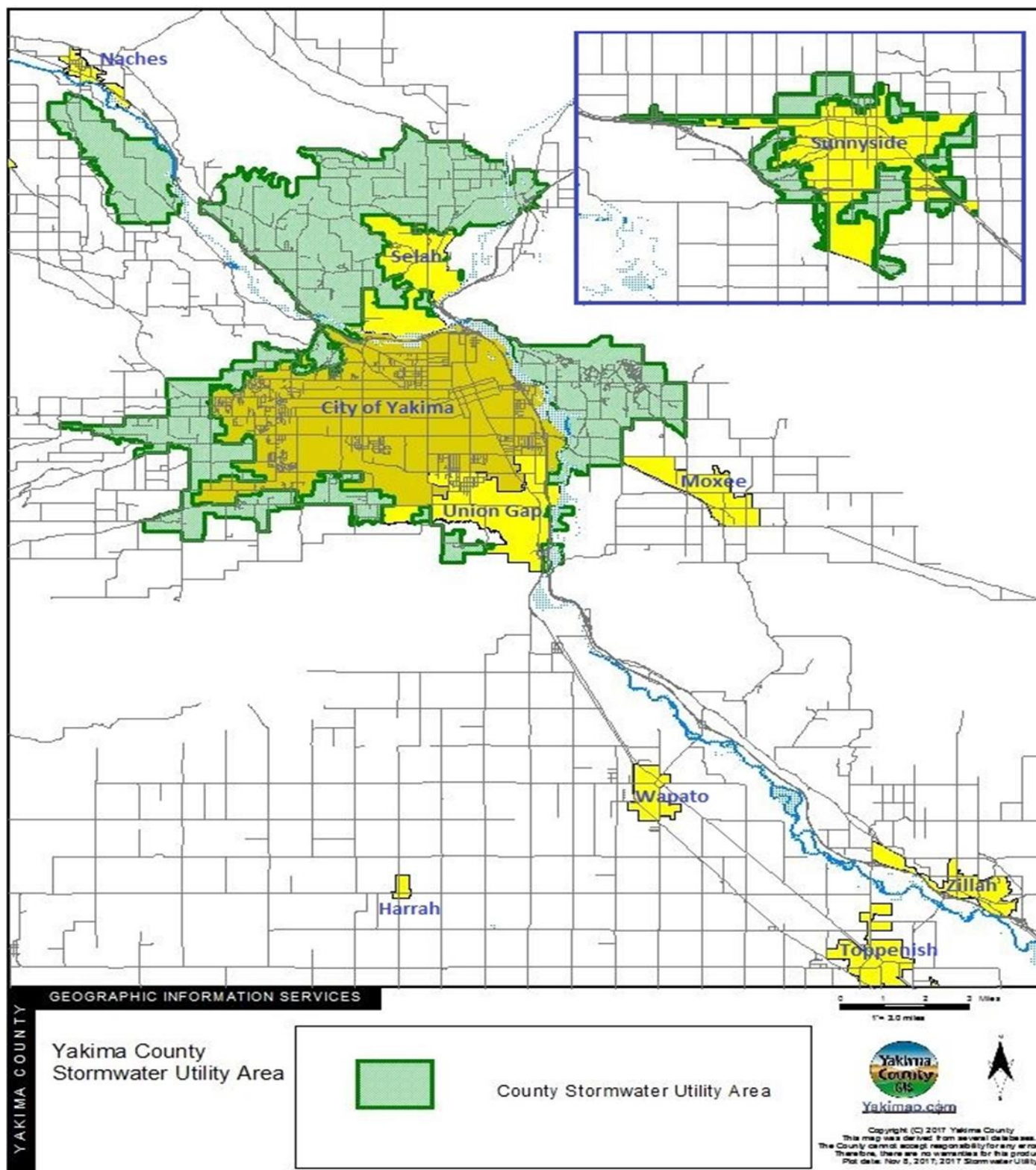


Figure 2. Yakima County Stormwater Utility Area

Table 1. Common Stormwater Pollutants, Sources, and Impacts (adapted from Rabasca and Rinehart, 2006).

Common Stormwater Pollutants, Sources, and Impacts		
Pollutant	Sources	Impacts
Sediment	Construction sites Eroding stream banks & lakeshores Winter sand & salt application Vehicle & boat washing Agricultural sites	Plant & fish habitat damage; Transport attached oils, nutrients, and other pollutants; Increased maintenance costs, flooding
Nutrients	Fertilizers Malfunctioning septic systems Livestock, bird/pet waste Vehicle & boat washing Grey Water Decaying grass & leaves Sewer overflows Leaking trash containers Leaking sewer lines	Nuisance/ toxic algal blooms; Low levels of dissolved oxygen (can kill aquatic organisms)
Hydrocarbons (petroleum compounds)	Vehicle & equipment leaks Vehicle & equipment emissions Pesticides Fuel Spills Equipment cleaning Improper fuel storage & disposal	Toxic to humans & aquatic life at low levels
Heavy Metals	Vehicle brake & tire wear Vehicle/equipment exhaust Batteries Galvanized metal Paint & wood preservatives Fuels Pesticides Cleaners	Toxic at low levels Drinking water contamination
Pathogens (Bacteria)	Livestock, bird, and pet wastes Malfunctioning septic systems Sewer overflows Damaged sanitary sewer lines	Risk to human health leading to closure of shellfish and swimming areas; Drinking water contamination

What are Best Management Practices (BMPs)?

The methods of improving stormwater quality, and thus surface water and groundwater, are called best management practices (BMPs). BMPs include a variety of managerial, operational, and structural measures that will improve water quality by reducing the amount of contaminants in stormwater (Clark County, 2009).

BMPs may be separated into three categories:

- Operational (Source Control)
 - Non-structural practices that prevent or reduce pollutants from entering stormwater.
- Structural (Source Control)
 - Physical or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater.
- Treatment
 - Settling basins or vaults, oil/water separators, biofilters, wet ponds, infiltration systems, and emerging technologies such as media filtration.

BMPs may also be split into those that should *always* be implemented and those that should be *whenever possible*. This gives some flexibility in situations where it is not practical or possible to always implement every BMP.

Water Quality Standards Violation

If Ecology determines that a discharge from the municipal separate storm sewer is causing or contributing to a violation of Water Quality Standards, additional BMPs not currently listed in this document for an activity may be required. BMPs implemented whenever possible may need to be always implemented.

Yakima County would be responsible for reporting to Ecology current BMPs in use, additional BMPs to be implemented, and a schedule for implementation. Ecology would need to approve this report and may require modifications as needed.

Required Components for All O&M Plans

- Best Management Practices (BMPs) that will protect water quality, reduce the discharge of pollutants to the maximum extent possible, and satisfy all known, available, and reasonable methods of prevention, control, and treatment.
- O&M standards within this plan must be at least as protective as those included in Chapters 5, 6, and 8 of the Ecology Eastern Washington Stormwater Manual (2004) or Chapters 9 and 10 of the Yakima County Regional Stormwater Manual (2010).
- Low impact development (LID) techniques should be considered for all new and redeveloped municipal facilities. See Chapter 11 of the Yakima County Regional Stormwater Manual for more information.
- Water conservation measures should be considered for all landscaped area, parks, and open spaces.
- Record keeping shall be done pursuant to the requirements in NPDES permit Section S9 *Reporting and Record Keeping*.
- Include a schedule of inspections and identify the department responsible for performing each activity.

Required Facility or Activity O&M Plans

- Stormwater Collection and Conveyance System
- Roads, Highways, and Parking Lots
- Vehicle Fleets
- Municipal Buildings
- Parks and Open Space
- Construction Projects
- Industrial Activities
- Material Storage Areas, Heavy Equipment Storage Areas, and Maintenance Areas
- Flood Management Projects
- Other Facilities

2. Stormwater Collection and Conveyance System

Please see the Yakima County Stormwater Collection and Conveyance System O&M Plan which is a currently a standalone document due to its length and the detail of information included for each type of stormwater facility.

3. Roads, Highways, and Parking Lots

This O&M Plan will address repair and maintenance associated with roads, highways, and parking lots. Public streets and roadways can comprise as much as 10 to 20% of total impervious surface cover in suburban watersheds and as much as 20 to 40% in highly urban subwatersheds (Novotney, 2008).

Pollution in the form of particulate matter or “street dirt” tends to accumulate along street curbs and roadways in between rainfall events. Sources of pollutants include vehicle emissions, vehicle wear and tear, breakup of street surfaces, littering, organic material, and sanding.

Pollution prevention practices established in this O&M plan are currently implemented for all roads, highways, and parking lots with more than 5,000 square feet of pollutant generating impervious surface that are owned, operated, or maintained by Yakima County and located within unincorporated urban areas (Figure 2).

Roads

The Yakima County Public Services Department Road Maintenance Division is responsible for all O&M activities associated with county owned and operated roads.

Parking Lots

The Yakima County Facility Services Department is responsible for all O&M activities associated with county owned and operated parking lots at facility complexes maintained by the Facility Services Department.

Yakima County Facility Services Department maintained parking lots:

- Yakima County Courthouse (north and south lots)
- Yakima County Correctional Center
- Main Jail and General Administration (former Health District) Buildings
- Juvenile Justice Center
- Restitution Center
- Facilities Office/ Printing
- First Street Conference Room/ Coroner

Outline of Road, Highway, and Parking Lots O&M Plan

- Street Sweeping and Cleaning
- Street Repair and Maintenance
 - Road Surface Maintenance
 - Pavement Marking
 - Roadside Feature Maintenance (signs, guard rail, etc.)
 - Roadside Vegetation Control
 - Dust Control
- Winter Activities
 - Anti-Icing
 - De-Icing & Sanding

- Snow Removal Practices
 - Snow Disposal Areas
 - Material Storage Areas
- Record Keeping

BMPs that should always be implemented and those that should be whenever possible are presented for each activity.

3.1 Street Sweeping and Cleaning

Yakima County performs street sweeping for aesthetics and to remove sand and litter from streets and curb gutters. This removes pollutants which could be carried away by stormwater and eventually end up in surface and ground waters.

Street Sweeping and Cleaning Schedule	
Frequency	Timing
Minimum 1 Time Per Year For all paved streets and roads	Primarily Spring Following end of winter operations to collect sand, etc.

BMPs that could be implemented to protect water quality and increase efficiency:

Always:

- Use regenerative air sweepers to perform street sweeping on curb and gutter streets.

Whenever Possible:

- Sweep streets prior to catch basin cleaning.
- Consider increased street sweeping to reduce catch basin cleaning frequencies.
- Conduct sweeping at optimal frequencies. Optimal frequencies are those scheduled sweeping intervals that produce the most cost-effective annual reduction of pollutants normally found in stormwater and can vary depending on land use, traffic volume, and rainfall patterns.
- Find sweeping frequency that is most efficient in relation to disposing of wastes. Increased sweeping frequency may allow for fewer trips to drop off waste. Most efficient may be in middle (moderate number of load drop offs and moderate sweeping frequency).
- Train operators in those factors that result in optimal pollutant removal. These factors include sweeper speed, brush adjustment and rotation rate, sweeping pattern, maneuvering around parked vehicles, and interim storage and disposal methods.
- Consider the use of periodic parking restrictions in low to medium density single-family residential areas to ensure the sweeper's ability to sweep along the curb.

3.1.1 Proper Waste Disposal

Proper disposal of cleaning wastes from roads, highways, and parking lots is important to prevent pollutants from entering the stormwater conveyance system or surface waters and to keep solid wastes from impeding flow or causing damage to the stormwater system.

Dangerous Cleaning Waste

Determination must be made as to whether the cleaning wastes are considered dangerous waste. Studies have shown this is usually **not** the case, but it is possible spills or high average daily traffic counts could lead to waste being considered dangerous.

Cleaning wastes suspected to be dangerous **should not** be collected with other wastes. These wastes should only be collected by an employee experienced in handling dangerous waste and the Dangerous Waste Regulations (Chapter 173-303 WAC) should be followed. Testing should be based on probable contaminants.

Detailed guidance for disposal of both dangerous and normal cleaning waste is available in Appendix 8B of the Ecology Eastern Washington Stormwater Manual. This guidance is the same as for stormwater system cleaning wastes.

Normal Cleaning Waste

Cleaning wastes are brought to the Summitview Pit and the Yakima and Sunnyside Road Maintenance Shops.

If necessary, solid wastes could be disposed at the Terrace Heights or Cheyne Landfills.

The Yakima County Public Service Department Road Maintenance Division is responsible for disposal of wastes collected from county owned and operated roads.

The Yakima County Facilities Services Department is responsible for disposal of wastes collected from county owned and operated parking lots.

Road Sweeping Non-Collection

Sweepings are brushed off the road surface onto road shoulders and into ditch sides. This is only performed on roads without curb, gutters, and stormwater collection inlets.

Sweepings shall not be brushed into wet ditches, streams, ponds, or wetlands.

3.2 Street Repair and Maintenance

Regular municipal street repair and maintenance such as pavement marking, patching, resurfacing, sealing, and right-of-way maintenance can generate a range of stormwater pollutants. These pollutants could include metals, chlorides, hydrocarbons, nutrients, sediment, and trash.

3.2.1 Road Surface Maintenance

Tasks include using asphaltic concrete and other materials for patching potholes, filling cracks, paving shoulders, and overlaying roads.

BMPs that could be implemented to protect water quality:

Always:

- Prevent debris, oils, cleaning agents, and sediment from entering the storm drain system. If feasible, block inlets and ditches.
- Carry spill control kit.
- Sweep or vacuum dust and debris before using water to clean up work sites.

Whenever Possible:

- Avoid work in wet weather.
- Properly contain and dispose of any residue from cleaning tools. Use heat to clean equipment where possible, avoiding solvents. Minimize vehicle and equipment cleaning on-site.

3.2.2 Pavement Marking

Tasks include striping roadway surfaces and applying other markings such as hot plastic material to define special traffic control features.

BMPs that could be implemented to protect water quality:

Always:

- Prevent paint from entering storm sewers and water bodies.
- Store paint in spill proof containers or covered areas
- When cleaning equipment, use methods that properly contain and dispose of unused paint, cleaning materials, and other spent materials.
- When removing markings, prevent debris from entering the storm sewer. Clean up debris from grinding or power washing and dispose according to standard procedures.
- Sweep or vacuum dust and debris before using water to clean up work sites.

3.2.3 Sign, Guard Rail, Traffic Signal, and Other Road Feature Maintenance

Maintenance activities performed on structures associated with roads, highways, and parking areas. Sediment, paint, and debris are the primary sources of water quality impacts associated with these activities.

BMPs that could be implemented to protect water quality:

Always:

- Prevent disturbed soil from entering storm sewer, ditches, or surface water bodies.
- Prevent pollutants such as paint and debris from entering storm sewers, etc.
- Carry a spill control kit

Whenever Possible:

- Minimize the area of soil disturbance
- If soil is disturbed, use sediment trapping and cover BMPs. Seed disturbed soils if the area will sustain vegetation.

3.2.4 Roadside Vegetation Control

Mowing and chemical application maintains sight distances, controls unwanted vegetation growth, and controls noxious weeds. It is possible that products used during these activities could impact water quality.

BMPs that could be implemented to protect water quality:

Always:

- Perform mowing and chemical application to the extent needed. Natural vegetation is left in place to the extent possible, considering safety for visibility and ditch flow capacity.
- Never apply pesticide into water unless specifically labeled for that use. Some pesticides are labeled for this type of application and may require a NPDES permit.
- Avoid applications within 100 feet of a water body.
- Avoid application on or near most stormwater collection or conveyance facilities excluding dry roadside ditches.
- Follow product labels for application of any pesticides.
- Time pesticide application when runoff is unlikely.
- Use the lowest possible dose rate to achieve the desired level of vegetation control.

Whenever Possible:

- Use integrated pest management practices that consider cultural, biological, mechanical, or engineering controls before chemical controls.
- Use products specifically labeled for dry ditches when treating roadside ditches.
- Use products with low water solubility and low persistence.

3.2.5 Gravel Road Maintenance

Dust control suppressants not only control dust but also reduce labor and equipment costs by tightly binding and stabilizing road surfaces. This maintains a high percentage of fines on the road surface and reduces grading (Environment Canada, 2007).

While there are numerous benefits to the use of chemical based dust suppressants, excessive use or poor application practices can have negative environmental impacts, see 3.3.1 Anti-icing for impacts of materials such as magnesium chloride. Lignin products have a high biological oxygen demand in aquatic systems. Spills or runoff into surface or ground waters may create low dissolved oxygen conditions resulting in fish kills or increases in groundwater concentrations of iron, sulfur compounds, and other pollutants (Ecology, 2003).

BMPs that could be implemented to protect water quality:

Always:

- Follow product labels and maintain equipment for proper application.
- Use only local and/or state government approved dust suppressant chemicals such as those listed in Ecology Publication #96-433 (Appendix A).

Whenever Possible:

- Do not apply product during or just before a rainfall that may wash product from the surface (e.g. summer thunderstorms). This enhances product performance as well as protecting water quality and roadside vegetation.
- Restrict use of product if within 25 feet of a body of water. May also need to evaluate areas of shallow groundwater for the possibility of product migration.
- Calibrate application equipment to evenly distribute products at a rate to optimally bind surfaces. Excess material can be tracked onto connecting roads, generate complaints from motorists, and is a waste of material.

3.3 Winter Activities

Winter operation activities include anti-icing, de-icing, and snow removal/disposal on roads, highways, and parking lots for improved public safety. Storage areas for materials such as de-icer and sand associated with these activities will also be mentioned.

While these activities are required for public safety, excessive use or poor application practices of even the best available products can produce preventable negative environmental impacts on both water quality and plants. If an acetate is included with calcium or magnesium anti/de-icers, it could increase biochemical oxygen demand (BOD) of streams, causing the depletion of dissolved oxygen. Conductivity may increase with the addition of calcium, magnesium, and acetate ions. Acetate could increase alkalinity, and consequently pH (Tanner and Wood, 2000). Sands washed into the stormwater system not only add sediment to receiving waters, but could also carry pollutants (See Table 1).

Anti- and de-icers that cause the least adverse environmental impact while still providing adequate public safety should be selected (may include those chemicals mentioned above).

3.3.1 Anti-Icing

Anti-icing liquids may be applied prior to predicted snow or freezing rain events. It is applied to road sections known to be more prone to becoming icy such as bridges, north facing grades, and shaded areas. Application rates vary depending upon the forecasted temperature and snow accumulations (from Yakima County Public Services website).

BMPs that could be implemented to protect water quality:

Always:

- Apply at appropriate rate to provide public safety, avoid excessive application.
- Follow manufacturer's recommendations.

3.3.2 De-Icing & Sanding

Rock salt material and sand is mixed together and applied to major arterial streets and priority areas. Rock salt material and sand are also applied to parking lots and sidewalks adjacent. During light snowfalls or when freezing rain occurs, spot application is applied at locations such as signalized intersections, stop signs, bridges, curves, hills, or other areas as requested. Plowing and sanding operations are scheduled to facilitate the morning commute (from Yakima County Public Services website).

BMPs that could be implemented to protect water quality:

Always:

- Apply rock salt type material and sand necessary to improve vehicle traction.
- Allow maximum melting of ice or snow by the de-icer material before plowing or reapplication.
- Sweep streets in early spring to collect accumulated rock salt type material and sand after the winter season.

3.3.3 Snow Removal Practices

Roads

When snow accumulation occurs, Yakima County will plow streets in order of priority. Snow is pushed to the side of streets by snow plows. Stormwater system inlets are cleared where water begins to pond after plowing.

Parking Lots

Snow is currently plowed in parking lots by a contractor overseen by Facility Services. Facility Services may perform some in-house plowing in the future, but would still hire a contractor for at least a portion of the work. Snow is plowed into large piles to be loaded and transported by the contractor.

3.3.4 Snow Disposal Areas

Roads

Since snow is not transported off-site, there are not any designated disposal sites.

Parking Lots

The contractor overseen by Facility Services loads the snow and transports it to their designated site.

3.3.5 Material Storage Areas

Yakima County makes an effort to only purchase the amount of material that is anticipated to be needed for the upcoming winter. This allows most if not all of the material to be expended and none carried over in storage throughout the remainder of the year.

Anti-icing Materials

Anti-icing liquids are stored in tanks at both Yakima County Road Maintenance Shops in Yakima and Sunnyside. Manufacturer's recommendations are followed.

Storage and transfer of materials is on an impervious containment pad.

De-icing Materials & Sand

Rock salt type material and sand is primarily stored in large quantities at four locations including the Yakima and Sunnyside Road Maintenance Shops, Summitview Pit (currently outside NPDES permit area), and near Toppenish (currently outside NPDES permit area). Facility Services also stockpiles small quantities of sand at some parking lots.

Where available, material is stored in bunkers and covered. Containment practices are implemented where covering is not feasible. No runoff flows into the stormwater conveyance system or receiving waters. No surface waters are located near these storage areas.

BMPs that could be implemented to protect water quality:

Always:

Operational BMP

- Do not hose down the contained stockpile area to a storm drain, or a conveyance to a storm drain, or to a receiving water body.

Structural BMPs

Choose one or more of the source control BMP options below for stockpiles greater than five cubic yards of erodible or water soluble materials, such as road deicing salts and sand.

- Store in a building or paved and bermed covered area; or
- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material.
- Pave the area and install a stormwater drainage system. Place curbs, or berms along the perimeter of the area to direct the runoff to treatment. Slope the paved area in a manner that minimizes the contact between stormwater and leachable materials; or
- For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and any catch basins as needed to prevent erosion and

discharge of the stockpiled material off-site or to a storm drain. Ensure that contaminated stormwater is not discharged directly to catch basins without conveying through a treatment BMP.

Whenever Possible:

Treatment BMP

- Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

Additional Operational BMPs

- Maintain drainage areas in and around storage of solid materials with a minimum slope of 1.5 percent to prevent pooling and to minimize leachate formation. Areas should be sloped to drain stormwater to the perimeter where it can be collected, or to internal drainage “alleyways” where material is not stockpiled.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials.
- If and when feasible, collect and recycle water-soluble materials (leachates) to the stockpile.
- Stock cleanup materials, such as brooms, dustpans, and vacuum sweepers near the storage area.

3.4 Record Keeping

The Yakima County Public Service Department Road Maintenance Division is responsible for all record keeping of road, highway, and parking lot maintenance activities. This may be able to be completed through current accounting procedures.

Records may need to be provided to the Surface Water Management Division's Stormwater Program for inclusion in the annual Stormwater Program Plan report.

The following are of most interest:

- Street sweeping and cleaning (frequency and quantity of material collected),
- Winter anti-icing and de-icing/sanding (frequency, quantity, and type of material per road segments)
- Dust control (frequency, quantity, and type of material per road segments)

All records are required to be kept for at least five years in accordance with the Reporting and Record Keeping portion of the NPDES permit.

4. Vehicle Fleets

This O&M plan will address storage, washing, and maintenance of municipal vehicle fleets.

Pollutant sources include parts/vehicle cleaning, spills/leaks of fuel and other liquids, vehicle wash water, replacement of liquids, outdoor storage of batteries/liquids/parts, and vehicle parking. BMPs given for vehicle storage, washing, and maintenance are adapted from the Ecology Eastern Washington Stormwater Manual, 2004.

Each Yakima County department is responsible for storage, washing, and maintenance of its vehicles fleet.

4.1 Storage

Vehicle storage areas such as covered and open parking lots are identified. BMPs to minimize contamination of stormwater from parking lot cleaning and from drips or leaks are presented.

Vehicle Storage Locations and Description:

Yakima and Sunnyside Road Maintenance Shops

Most vehicles are stored inside or under cover, excluding large equipment such as road graders.

Yakima County Courthouse

A majority of vehicles are stored in a fenced parking lot near the corner of N. 1st St. and Lincoln Ave., adjacent to the Facility Services/ Printing Building. A few vehicles are parked in the pay lot directly south of the courthouse. No vehicle washing or maintenance occurs on-site.

Sheriff's Office

Many vehicles are taken to private residences while employees are off duty. A majority of the remaining vehicles are stored in a covered parking area at the Sheriff's office. A small number of vehicles are stored outside at the Sheriff's office and other locations throughout the county (list below).

Precinct and Citizen Watch Patrol Parking Locations:

- Terrace Heights Sheriff Precinct Office
- West Valley Precinct Office
- Near Suntides Golf Course (Citizen Watch Car)
- Near Parker (Citizen Watch Car)

Juvenile and Department of Corrections

A small fleet of vans and passenger cars are stored in uncovered parking at the Yakima County Main Jail, Justice Center, Restitution Center, and Juvenile Justice Center.

Food Services

Six vehicles are stored at the Yakima County Juvenile Justice Center in an open parking lot.

BMPs that could be implemented to protect water quality:

Operational BMPs:

- If the parking lot is washed, discharge the water into a sanitary sewer if allowed. Do not discharge to a storm drain or receiving water.
- Sweep parking lots, storage areas, etc. regularly.
- Do not wash or repair vehicles in the parking lots. Take vehicles to approved wash or repair facility when needed.

Treatment BMPs:

- An oil removal system such as an American Petroleum Institute (API) (also called baffle type) or coalescing plate (CP) oil and water separator, catch basin filter, or equivalent BMP, approved by the local jurisdiction, is applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site.

Vehicle high-use site characteristics include the following (Ecology 2004):

- Is subject to an expected average daily traffic (ADT) count equal or greater than 100 vehicles per 1,000 square feet of gross building area; or
- Is subject to storage of a fleet of 25 or more diesel vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).

4.2 Washing

Vehicle washing facilities owned and operated by Yakima County are identified. In addition to soapy wash water, debris containing pollutants may accumulate on vehicles prior to washing and may wash off. Vehicle fluids also may wash off adding to the pollutant load of the wash water.

Vehicle Washing Facility Locations and Description:

Public Services

Two designated wash down facilities are located at the Yakima Road Maintenance Shop. One is located inside and one outside. Designated inside and outside wash down facilities are also located at the Sunnyside Road Maintenance Shop. All facilities contain grease traps and oil separators. Wash water drains to the sanitary sewer.

All Other Departments

Vehicles are washed at commercial facilities.

BMPs that could be implemented to protect water quality:

Always:

- Conduct vehicle equipment washing at either commercial or municipal facilities that drain to the sanitary sewer.
- Any outside washing in a designated wash area will include the following features:
 - Paved area
 - Spill containment pad to prevent the runoff of stormwater to adjacent areas.
 - Collect wash water in a pad drain system which drains to a sump and then to a sanitary sewer (if allowed). Sump must have a positive control outlet valve for spill control with live containment volume and oil/water separation. See Ecology Stormwater Manual for additional requirements.
 - Water should only be discharged to the storm drain system or surface waters if it is first treated and an NPDES permit is in place.

Whenever Possible:

- Wash area should be well marked.
- Use phosphate-free biodegradable detergents.
- Consider recycling wash water
- Because water soluble or emulsified detergents can be used in the wash medium, the selection of soaps and detergents and treatment BMPs should be considered carefully. Oil/water separators are ineffective in removing emulsified or water soluble detergents.

4.3 Maintenance

Vehicle repair/maintenance facilities operated by Yakima County are identified. Pollutants from vehicle fluids and cleaners are the primary concern for stormwater contamination.

Vehicle Repair/Maintenance Facility Locations and Description:

Most County Departments

Vehicles are taken to commercial/machine repair shops for major maintenance/repair activities and oil changes. Minor automotive or heavy equipment maintenance work such as part fabrication, welding, and the topping off of hydraulic fluid may be completed at the Yakima County Road Maintenance Shop. All work performed is completed indoors.

Sheriff and Food Services

Vehicles are taken to commercial automotive/machine repair shops for all maintenance/repair activities.

BMPs that could be implemented to protect water quality:

Operational BMPs:

Always:

- Inspect all incoming vehicles, parts, and equipment stored temporarily outside for leaks.
- Use drip pans or containers under parts or vehicles that drip or are likely to drip liquids.
- Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination.
- Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.
- Do not pour/convey wash water, liquid waste, or other pollutants into storm drains or to surface water. Check with local jurisdiction to convey to sanitary sewer.
- Do not connect maintenance and repair shop floor drains to storm drains or surface water. To allow for snowmelt during the winter, a drainage trench with a sump for particulate collection can be installed and used only for draining the snowmelt and not for discharging any vehicular or shop pollutants.

Whenever Possible:

- Store damaged vehicles inside a building or covered area.

- Clean parts with aqueous detergent based solutions or non-chlorinated solvents, such as kerosene or high flash mineral spirits, and/or use wire brushing or sand blasting. Avoid using toxic liquid cleaners.
- Avoid hosing down work areas. Use dry methods for cleaning leaked fluids.
- Recycle greases, used oil, oil filters, antifreeze, cleaning solutions, automotive batteries, etc.
- Do not mix dissimilar or incompatible waste liquids stored for recycling.

5. Municipal Buildings

This O&M plan will address cleaning, washing, painting, and other maintenance activities associated with municipal buildings owned and maintained by Yakima County within the NPDES permit area. Maintenance activities could be performed by municipal staff or contractors.

If liquids or other substances from these activities reach storm drain systems it is possible that they could eventually pollute surface or ground waters. Potential pollutants include organic compounds, oils, and greases, heavy metals, and suspended solids.

Yakima County Owned and Maintained Building Complexes:

(Organized by department responsible for maintenance)

Facilities Services Department

- Courthouse
- Facility Services and Printing Building
- First Street Conference Room and Coroner Building
- Technology Services Applied Building
- General Administration Building (former Health District)
- Juvenile Justice Center
- Department of Corrections
 - Main Jail
 - Correctional Center
 - Restitution Center

Public Services Department

- Public Services Yakima Road Maintenance and Operation Complex
- Public Services Sunnyside Road Maintenance and Operation Satellite Facility
- Eschbach Park buildings
- Utility buildings (various well houses, pump houses, and water reservoirs)
- Solid Waste facilities (currently outside of NPDES permit area)

Weed Control Board

- Weed Control Board building (18th St.)

Yakima Air Terminal – McAllister Field

- Co-owned with the City of Yakima.
- Most buildings complexes connected to the airport are co-owned by Yakima County and the City of Yakima but many are leased to private organizations.

Yakima County Owned and Leased to Private Organizations:

- State Fair Park including Yakima County Stadium and Sundome.
 - Leased to and managed by the Central Washington Fair Association.
- Sun Valley Shooting Park (currently outside NPDES permit area)

- Leased to and managed by the Central Washington Range Conservancy.

Privately Owned and Leased to Yakima County:

- Sheriff's Office.
 - Leased by Yakima County. Minor maintenance work performed by Sheriff's Office employees. Major repairs and maintenance completed by facility owner.

BMPs are organized by those that should *always* be applied and those that should be applied *whenever possible* for many of the activities. BMPs may be separated into two categories including *operational* and *structural*.

BMPs presented are adapted from the Ecology Eastern Washington Stormwater Manual, 2004 and the Clark County Pollution Control Manual, 2009.

5.1 Cleaning and Washing

Cleaning and washing activities could include washing of carpet and other interior items with mobile equipment or pressure washing of buildings, rooftops, and other large objects. Wash water from interior and exterior washing could be contaminated with suspended solids, heavy metals, and other pollutants.

BMPs that could be implemented to protect water quality:

Always:

- Dispose of carpet or interior waste water to the sanitary sewer. Do not dispose of any of this waste water outdoors or to a storm drain system.

Report any spills or accidental discharges to the storm drain system to Yakima County Stormwater Program staff.

- Collect wash water from building structures and convey it to appropriate treatment, such as a sanitary sewer system. If it contains oils, soaps, or detergents then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment. A sump pump, wet vacuum, or similarly effective device could be used to collect the runoff and loose materials.
- Cover any inlets to the storm drain system that waste water from exterior pressure washing could drain to.

Whenever Possible:

- Avoid using excessive amounts of water for interior and exterior washing.
- Recycle the wash water.

5.2 Painting

Activities could include painting of interior or exterior building surfaces. Pollutant sources include surface preparation and application of paints, finishes, and/or coatings to buildings. Potential pollutants include organic compounds, oils, and greases, heavy metals, and suspended solids.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

- Never dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain system inlet.
Report any spills or accidental discharges to the storm drain system to Yakima County Stormwater Program staff.
- Train employees in the careful application of paints, finishes, and coatings to reduce misuse and over spray. Use ground or drop cloths underneath outdoor painting, scraping, sandblasting work, and properly clean and temporarily store collected debris daily.
- Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a storm drain, receiving water, or conveyance ditch to receiving water.
- Use a storm drain cover, filter fabric, or similarly effective runoff control device if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. The containment device(s) must be in place at the beginning of the workday. Collect contaminated runoff and solids, and properly dispose of such wastes before removing the containment device(s) at the end of the workday.
- Use a ground cloth, pail, drum, drip pan, tarpaulin, or other protective device for activities such as paint mixing and tool cleaning outside or where spills can contaminate stormwater. Properly dispose of all wastes and prevent all uncontrolled releases to the air, ground, or water.
- Clean brushes and tools covered with non-water based paints, finishes, or other materials in a manner that allows collection of used solvents (e.g., paint thinner, turpentine, xylol, etc.) for recycling or proper disposal.
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater.

Structural BMP:

- Enclose and/or contain all work while using a spray gun or conducting sand blasting and in compliance with applicable air pollution control, Occupational Safety and Health Administration (OSHA), and Washington Industrial Safety and Health Act

(WISHA) requirements. Do not conduct outside spraying, grit blasting, or sanding activities during windy conditions which render containment ineffective.

Whenever Possible:

Operational BMPs:

- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain.
- Recycle paint, paint thinner, solvents, pressure wash water, and any other recyclable materials.
- Use efficient spray equipment, such as electrostatic, air-atomized, high volume/low pressure, or gravity feed spray equipment.
- Purchase recycled paints, paint thinner, solvents, and other products, if feasible.

5.3 Other Maintenance Activities

Other maintenance activities could include labor activities associated with general building repair work, remodeling of existing buildings, or construction of buildings.

Stormwater runoff from these activities can be contaminated with toxic hydrocarbons in solvents, other toxic organic compounds, suspended solids, heavy metals, abnormal pH, and oils and greases.

BMPs that could be implemented to protect water quality:

Always:

- Dispose of toxic substances or liquids properly. Never dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain system inlet.
Report any spills or accidental discharges to the storm drain system to Yakima County Stormwater Program staff.
- Use a storm drain cover if dust, grit, wash water, or other pollutants may escape the work area and enter a storm drain inlet. Collect any accumulated runoff and solids with wet vacuums and brooms as needed.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities, such as paint mixing and tool cleaning.
- Store and maintain a spill control kit and ensure employees are familiar with proper spill control procedures.

6. Parks and Open Space

Operation and maintenance activities associated with parks and open spaces have been broken into the following required components by the NPDES Permit:

- Proper Application of Pesticides, Herbicides, and Fertilizer
- Sediment and Erosion Control
- Landscape Maintenance
- Vegetation Disposal
- Trash Management
- Building Exterior Cleaning and Maintenance

Poor management practices or product use within parks and open space may lead to stormwater contamination. Possible stormwater pollutants from these activities could include toxic organic compounds, heavy metals, oils, total suspended solids, coliform bacteria, fertilizers, plant materials that decompose, and pesticides.

Yakima County owns and maintains the following parks and open spaces where the outlined O&M activities will incorporate the following BMPs. These will be implemented by municipal staff or contractors.

Yakima County Parks and Open Space:

- Lower Naches Community Park (8 acres)
- Nelson Pioneer Cemetery
- State Fair Park (including Yakima County Stadium and Sundome)
 - Yakima County owns but is leased to and managed by the Central Washington Fair Association.
- Performance Park (adjacent to Yakima County Courthouse)
 - Yakima County owns the property, but is leased to the Committee for Downtown Yakima who will perform landscape maintenance activities. The Committee for Downtown Yakima is a non-profit organization funded from private donations and a matching contribution from the City of Yakima.

Currently Outside of NPDES Permit Boundary

- Eschbach Park (150 acres).
- Sun Valley Shooting Park (244 acres)
 - Yakima County owns the property but it is leased to and managed by the Central Washington Range Conservancy.

The Yakima County Public Services Parks and Recreation Division is responsible for all Parks and Open Space O&M activities associated with Eschbach and Lower Naches

Community Parks and the Nelson Pioneer Cemetery. This includes any recordkeeping associated with pesticide and fertilizer application.

The Committee for Downtown Yakima will be responsible for maintenance activities at Performance Park and will follow the BMPs included in this plan.

The Yakima County Facilities Services Department is responsible for all landscaping and lawn maintenance associated with the county owned and operated building complexes that it is responsible for maintaining. Facilities Services Department staff, contractors, and inmate work crews perform these maintenance activities. Facility complexes with landscape maintenance performed by Facilities Services include:

- Courthouse
- Facility Services and Printing Building
- First Street Conference Room and Coroner
- Technology Services Applied Building
- General Administration Building (former Health District)
- Juvenile Justice Center
- Department of Corrections
 - Main Jail
 - Correctional Center
 - Restitution Center

BMPs are also organized by those that should *always* be applied and those that should be applied *whenever possible* for many of the activities. BMPs may also be broken into two categories including *operational* and *structural*.

Most BMPs presented are adapted from the Ecology Eastern Washington Stormwater Manual, 2004. BMPs for trash management and erosion and sediment control are adapted from the Guidelines and Standard Operating Procedures Illicit Discharge Detection and Elimination and Pollution Prevention/ Good Housekeeping for Stormwater Phase II Communities in New Hampshire.

6.1 Proper Application of Pesticides, Herbicides, and Fertilizer

Activities could include application of pesticides (including herbicides) and fertilizer on lawns, golf course lawns, or associated landscaping.

6.1.1 Pesticides (including Herbicides)

Pesticides and herbicides are used to control weeds, insects, mold, bacteria, and other pests. Examples include weed control on golf course lawns, access roads, and utility corridors. Toxic pesticides such as pentachlorophenol, carbamates, and organophosphates can be released to the environment by leaching and dripping from treated parts, container leaks, product misuse, and outside storage of pesticide contaminated materials and equipment.

BMPs that could be implemented to protect water quality:

Always:

- Maintain healthy turf through soil conditioning, proper water application, seed mixtures, and careful fertilizer applications. Healthy turf resists disease and weed infestations, reducing the need for pesticide and herbicide applications.
- Develop and implement an Integrated Pest Management (IPM) Plan and use pesticides only as a last resort.

An IPM Plan outline could include:

- Identify problem pests and their life cycle.
 - Tolerance thresholds for pests.
 - Monitoring to detect and prevent pest problems.
 - Modifications to the maintenance program to promote healthy plants and discourage pests.
 - Identify cultural, physical, mechanical, or biological controls to use first when pests exceed the tolerance thresholds. Try to keep pests from exceeding tolerance thresholds.
 - Evaluation and recordkeeping of the effectiveness of the control, and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.
- Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping, and public notice procedures. All procedures shall conform to the requirements of Chapter 17.21 Revised Code of Washington (RCW) and Chapter 16-228 Washington Administrative Code (WAC).

- Choose the least toxic pesticide available that is capable of reducing the infestation to acceptable levels. The pesticide should readily degrade in the environment and/or have properties that strongly bind it to the soil. Any pest control used should be conducted at the life stage when the pest is most vulnerable.
- Apply the pesticide according to label directions. Under no conditions shall pesticides be applied in quantities that exceed manufacturer's instructions.
- Mix the pesticides and clean the application equipment in an area where accidental spills will not enter surface or ground waters, the storm drain system, and will not contaminate soil.
- Store pesticides in enclosed areas or in covered impervious containment. Do not hose down the paved areas to a storm drain or conveyance ditch. Ensure spills/leaks are cleaned up and are not discharged to storm drain system. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Assure pesticide application equipment must be capable of immediate shutoff in the event of an emergency.
- Avoid spraying non-permitted pesticides within 100 feet of open waters including wetlands, ponds, streams, sloughs, and any drainage ditch or channel that leads to open water except when approved by Ecology and the Yakima County Parks and Recreation Division Manager. Sensitive areas including wells, creeks, and wetlands could be flagged prior to spraying if there is uncertainty of where the boundary is located.
- Complete public posting of the area to be sprayed prior to application as required by Yakima County or by Ecology.
- Spray applications should only be conducted during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.

Whenever Possible:

- Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control.
- Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants, such as Phytiom root rot, ashy stem blight, and parasitic nematodes.

The following are three possible mechanisms for disease control by compost addition:

1. Successful competition for nutrients by antibiotic production;
2. Successful predation against pathogens by beneficial microorganism; and
3. Activation of disease-resistant genes in plants by composts.

Installing an amended soil/landscape system can preserve both the plant system and the soil system more effectively. This type of approach provides a soil/landscape system with adequate depth, permeability, and organic matter to sustain itself and to continue working as an effective stormwater infiltration system and a sustainable nutrient cycle.

- Evaluate pesticide effectiveness for possible improvement. Records should be kept showing the applicability and inapplicability of the pesticides considered.
- Develop an annual evaluation procedure including a review of the effectiveness of pesticide applications, impact on buffers and sensitive areas (including potable wells), public concerns, and recent toxicological information on pesticides used/proposed for use.

If individual or public potable wells are located in the proximity of commercial pesticide applications contact the regional Ecology hydrogeologist to determine if additional pesticide application control measures are necessary.

- Use rinsate from equipment cleaning and/or triple-rinsing of pesticide containers as product or recycle into product.
- Assure the application equipment used is capable of immediate shutoff in the event of an emergency.

6.1.2 Fertilizers

Fertilizers are applied to soil or plant leaves to improve the health and productivity of soil and plants by providing nutrients encouraging plant growth. Nitrogen and phosphorus enrichment from fertilizers can result in negative environmental impacts including frequent algal blooms in water bodies. These blooms decrease dissolved oxygen in water causing death of desirable aquatic animals and plants.

Besides the possibility of eventually flowing into surface waters, nitrogen derived from fertilizers which enters groundwater may increase nitrate levels. This could pose a health risk to humans who rely on drinking water from wells.

BMPs that could be implemented to protect water quality:

Always:

- Evaluate soil nutrient levels through regular testing to ensure the best possible efficiency and economy of fertilization. Turf grass is most responsive to nitrogen fertilization, followed by potassium and phosphorus. Fertilization needs vary by site depending on plant, soil, and climatic conditions. For details on soils testing, contact the local Natural Resources Conservation Service or Cooperative Extension office.
- Apply fertilizers according to label directions.
- Apply fertilizers in amounts appropriate for the target vegetation and at the time of year that minimizes losses to surface and ground waters.
 - Do not fertilize during a drought or when the soil is dry.
 - Alternatively, do not apply fertilizers within three days prior to predicted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.
- Time the fertilizer application to periods of maximum plant uptake. Generally fall and spring applications are recommended, although WSU turf specialists recommend four fertilizer applications per year.
- Only properly trained persons should apply all fertilizers. Fertilizers should not be applied to grass swales, filter strips, or buffer areas that drain to sensitive water bodies unless approved by Yakima County Parks and Recreation Division Manager.

Whenever Possible:

- Use natural compost and organic fertilizers instead of synthetic fertilizers.
- Use slow release fertilizers such as methylene urea, isobutylene diurea (IDBU), or resin coated fertilizers, when appropriate, generally in the spring. Use of slow release fertilizers is especially important in areas with sandy or gravelly soils.

6.2 Sediment and Erosion Control

Sediment and erosion control activities could be associated with grading, soil transfer, vegetation removal, or other landscaping activities. Pollutants may attach to sediment which runs off into the storm drain system or directly to receiving waters.

BMPs that could be implemented to protect water quality:

Always:

- Implement erosion control techniques or devices to stabilize disturbed areas. Use mulch or other erosion control measures when soils are exposed for more than a week.
- Minimize land disturbance.
- Minimize slope lengths.
- Implement effective site planning to avoid sensitive areas.
- Obtain coverage or a waiver under Ecology's Construction Stormwater General Permit if the project size is one (1) acre or greater. Local jurisdiction requirements may also apply.

Whenever Possible:

- Avoid land disturbance during months with higher runoff rates.
- Install erosion control blankets when seeding near drainage ways.
- Protect natural vegetation, especially near water bodies, wetlands, and steep slopes.

6.3 Landscape Maintenance

In addition to pesticide and fertilizer application, landscape maintenance activities could include shrub pruning, mowing, trimming, irrigation, improving topsoil, runoff drainage, etc.

BMPs that could be implemented to protect water quality:

Always:

- Use mulch or other erosion control measures when soils are exposed for more than a week.

Whenever Possible:

- Install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.
- Store and maintain appropriate oil and chemical spill cleanup materials in readily accessible locations if oil or other chemicals are handled. Ensure that employees are familiar with proper spill cleanup procedures.
- During landscaping repair, till fertilizers into the soil rather than dumping or broadcasting onto the surface. Determine the proper fertilizer application for the types of soil and vegetation encountered.
- During landscaping repair, till a topsoil mix or composted organic material into the soil to create a well-mixed transition layer that encourages deeper root systems and drought-resistant plants.
- Assure plants are receiving appropriate amount of water from irrigation. Improper irrigation can encourage pest problems, leach nutrients, and make a lawn completely dependent on artificial watering.
- Conduct mulch-mowing.
- Use manual and/or mechanical methods of vegetation removal rather than applying herbicides.
- Aerate lawns regularly in areas of heavy use where soil tends to become compacted. Aeration should be conducted while the grasses in the lawn are growing rapidly.

6.4 Vegetation Disposal

Vegetation disposal may be required for activities including mowing, weeding, pruning, and trimming. Improper disposal of vegetation could carry pollutants into or hinder the proper function of the storm drain system.

Parks

Yakima County currently disposes any collected vegetation from parks and open spaces at the Yakima County Terrace Heights Landfill. Material collection is kept to a minimum through mulch mowing and use of material as ground cover.

Building Landscaping (buildings maintained by Facilities Services)

Facilities Services disposes vegetation material collected during landscape maintenance at the Yakima County Terrace Heights Landfill.

BMPs that could be implemented to protect water quality:

Always:

- Dispose of collected vegetation properly. Do not dispose of collected vegetation into waterways, storm drainage systems or onto paved roadway surfaces.

Whenever Possible:

- Conduct mulch-mowing.
- Use manual and/or mechanical methods of vegetation removal rather than applying herbicides.
- Dispose of grass clippings, leaves, sticks, or other collected vegetation by composting.
- Consider using growth regulating products to reduce the frequency of mowing and quantity of clippings.

6.5 Trash Management

Activities include collection, storage, and transportation of trash at park and open spaces. Garbage and leachate can be transported by stormwater and enter the storm drain system and receiving waters.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

- Cover rubbish bins to keep wind and rain out.

Whenever Possible:

Operational BMPs:

- Store garbage containers beneath a covered structure or inside to prevent contact with stormwater.
- Locate dumpsters on a flat, concrete surface that does not slope or drain directly into the storm drain system.
- Locate dumpsters and trash cans in convenient, easily observable areas.
- Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
- Inspect garbage bins for leaks regularly, and have repairs made immediately.
- Request/use dumpsters without drain holes.
- Dispose of hazardous waste and gasoline/oil contaminated materials properly, not in a dumpster or trash bin.

Structural BMP:

- Install berms, curbing, or vegetation strips around storage areas to control water entering/leaving storage areas.

6.6 Building Exterior Cleaning and Maintenance

See Chapter 5 Municipal Buildings. Most BMPs presented in Chapter 5 would apply to exterior cleaning and maintenance of buildings associated with parks and open space. Buildings related to Parks and Open Space are also included with the other municipal buildings in Chapter 5.

7. Construction Projects

Public construction projects shall comply with the requirements applied to private projects. All construction projects owned and operated by the Permittee that are required to have a NPDES permit shall be covered under either the *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* or another NPDES permit that covers stormwater discharges associated with the activity. All public projects shall include construction and post-construction controls selected and implemented pursuant to the requirements in Appendix 1 of the Ecology Eastern Washington Phase II Municipal Stormwater Permit (Appendix B) and applicable municipal code requirements for drainage, construction sediment control, and post-construction stormwater treatment requirements.

8. Industrial Activities

All facilities owned or operated by Yakima County that are required to have NPDES permit coverage shall be covered under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES permit that covers stormwater discharges associated with the activity.

Yakima County facilities currently covered under the Industrial NPDES permit include:

- None at this time
 - Yakima Air Terminal – McAllister Field may apply for a permit in the future.
 - Horizon Air currently holds an Industrial NPDES Permit for operations at the Yakima Air Terminal – McAllister Field.

The following guidance identifies municipal facilities subject to the Washington State Industrial Stormwater General Permit. This guidance was adapted from Ecology's *Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities* (Appendix C) and Ecology's *Stormwater Discharges Associated with INDUSTRIAL Activity Brochure and Permit Application*. Appendix D1-D4 include the 2015 Industrial Stormwater General Permit Focus Sheet, Permit, Permit Application, and Permit Changes.

What Type of Facilities Need An Industrial NPDES Permit?

Any facility included in Table 2 that discharges stormwater to a **surface waterbody or into a storm drainage system that later discharges to a surface waterbody** must apply for a stormwater permit.

What Type of Facilities Do Not Need An Industrial NPDES Permit?

- Facilities that discharge all stormwater associated with industrial activity to the ground (e.g. infiltration basins, dry wells, drain fields). There are a few exceptions.
- Facilities that discharge all stormwater to a combined sewer system.
- Facilities owned and operated by the federal government or are on Tribal land, or facilities that discharge directly to Tribal waters meeting EPA approved water quality standards.
- Facilities that qualify for "Conditional No Exposure." However, facilities must re-apply every five (5) years or thirty (30) days after the effective date reissuance of the industrial stormwater general permit, whichever comes first.

Table 2. Examples of municipal industrial facilities that would require Industrial NPDES Permit coverage if discharging stormwater to surface waters either directly or via a storm drainage system.

Municipal Industrial Facility Examples	Description and Standard Industrial Classification (SIC)
Hazardous Waste Treatment, Storage, or Disposal	Including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA).
Landfills, Land Application Sites, and Open Dumps	Facilities receive or have received any industrial wastes (waste that is received from any industrial facilities, including those subject to regulation under Subtitle D of RCRA).
Recycling Facilities	Facilities involved in recycling of materials, including metal scrap yards, battery recyclers, salvage yards, and automobile recyclers, including but limited to those classified as SIC 5015 and 5093.
Transportation Facilities	Those classified under the following SICs which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations: 40 – Railroad Transportation, 41 – Local and Interurban Passenger Transportation, 45 – Transportation by Air.
Sewage Treatment Plants	Those with a design flow of one million gallons per day or more.

9. Material Storage Areas, Heavy Equipment Storage Areas, and Maintenance Areas

The Municipal NPDES permit requires Yakima County to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to protect water quality at each material storage area, heavy equipment storage area, and maintenance area owned or operated by Yakima County.

Generic SWPPPs that can be applied at multiple sites may be used to comply with this requirement. Facilities covered under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES permit that covers stormwater discharges associated with the activity are excluded from this requirement.

SWPPP Objectives

1. To implement and maintain best managements practices (BMPs) that identify, reduce, eliminate, and/or prevent the discharge of stormwater pollutants.
2. To prevent violations of surface water quality, groundwater quality, and sediment management standards.
3. To prevent adverse impacts to receiving water by controlling peak rates and volumes of stormwater runoff.
4. To eliminate the discharges of unpermitted illicit discharges to stormwater drainage systems.

Yakima County Material Storage, Heavy Equipment Storage, and Maintenance Areas

- Yakima County Road Maintenance S. 18th St. Facility
- Yakima County Road Maintenance Sunnyside Satellite Facility
- Yakima Air Terminal – McAllister Field Storage Areas
 - May apply for an Industrial NPDES Permit in future which would create an exclusion from requirements.

The following provides guidance for developing a SWPPP. Generic SWPPP forms (example and blank) are provided in Appendix E and E1.

This SWPPP development guidance and generic SWPPP were adapted from the following documents:

City of Mt. Vernon Fir Street Maintenance Facility Stormwater Pollution Prevention Plan.

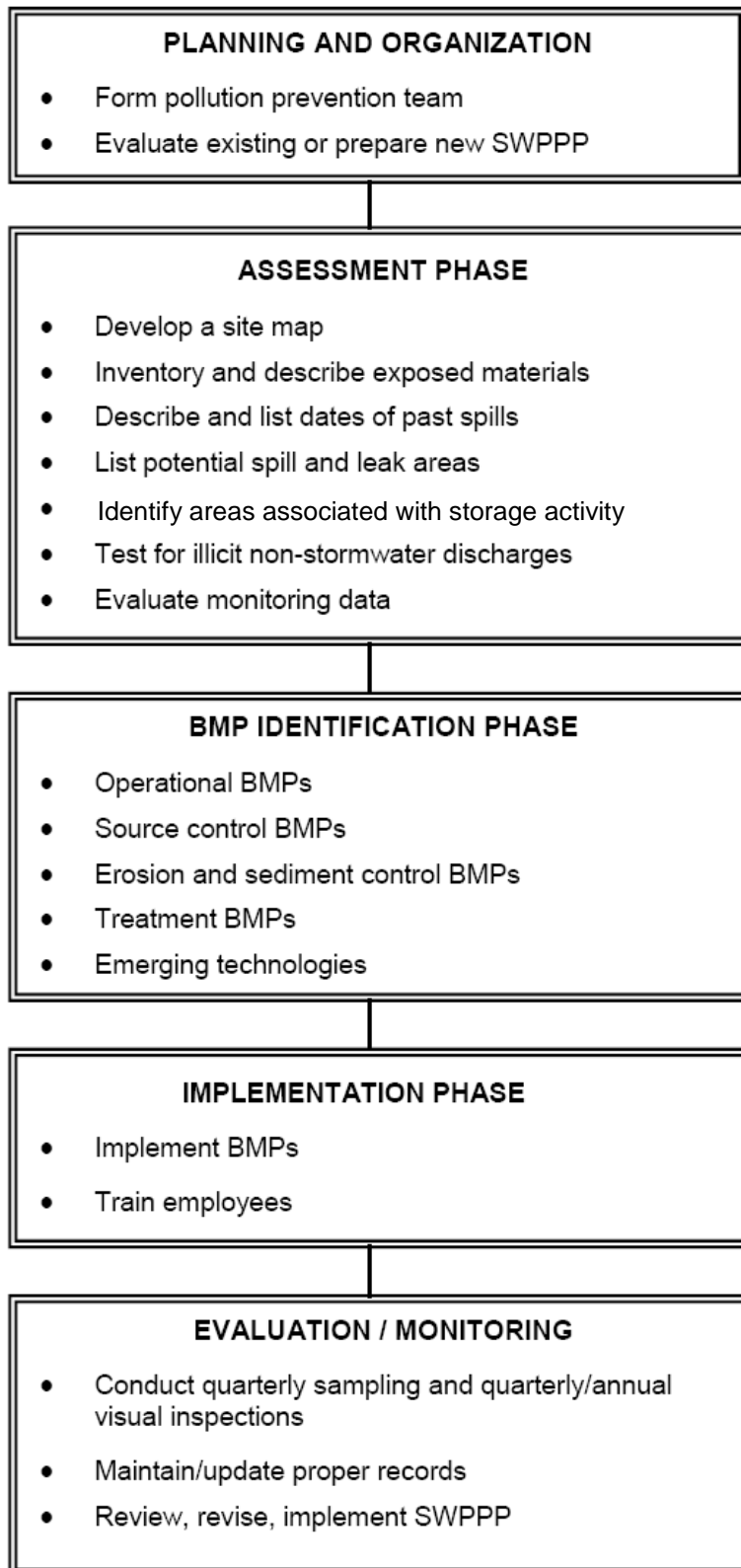
City of Seattle Generic Stormwater Pollution Prevention Plan

Ecology Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities

Ecology Stormwater Management Manual for Eastern Washington

Yakima County Regional Stormwater Manual

SWPPP PREPARATION FLOWCHART



9.1 Facility Assessment

A description, site map, and materials inventory of the storage area may be useful in identifying where stormwater could come in contact with materials and eventually enter the storm drain system or surface waters.

9.1.1 Description of the Storage Area

Provide a description of the storage area, what kinds of materials are stored, and a general layout.

9.1.2 Site Map

A site map includes the following:

- Material storage areas
- Heavy equipment storage areas
- Maintenance areas
- Other Significant features noted and labeled
- Building and paved areas
- Pollutant contact areas (actual and potential)
- Stormwater drainage system structures
- Stormwater drainage areas (all areas draining to point of discharge to surface and ground waters)
- Surface water locations (including wetlands and drainage ditches)
- Significant soil erosion areas (existing and potential)

9.1.3 Material and Equipment Inventory

Identify and list materials handled, treated, stored, or disposed of that could be exposed to stormwater or snow melt and result in stormwater pollution of a significant amount. Include the location and quantity (by volume or weight).

The worksheets in Appendix E and E1 may be used to list materials and equipment including the following:

- Sand, rock, gravel, rock salt, etc.
- Liquid materials stored and/or transferred outdoors
- Materials handled indoors that could be tracked outdoors by equipment or vehicles.
- Hazardous substances
- Fertilizers and pesticides
- Vegetation waste and other waste materials
- Any other materials which could be carried away by stormwater and cause a violation of water quality standards.
- Equipment stored outside

9.2 Identifying Areas Associated with the Storage Activity

Identify and list pollutant generating areas associated with the storage activity. This could also be included on the Generic SWPPP worksheets.

Associated areas could include the following:

- Loading and unloading areas (dry or liquid materials)
- Dust or particulate generating services
- On-site solid waste or residual treatment, storage, or disposal
- Material handling sites
- Vehicle fueling and petroleum transfer areas
- Outdoors storage and stockpile areas

9.3 Identify Past Spills and Leaks

List any significant leaks or spills of oils and toxic/hazardous pollutants during the past three years. This provides additional information on potential sources of stormwater contamination.

9.4 Monitoring Plan (Visual Inspection)

Conduct quarterly visual inspections of the storage areas and document these inspections. Inspect discharge points to ground, the storm drain system, and surface waters. If possible, conduct one annual inspection during a storm event and one annual inspection during a dry period (at least one week).

The inspection should include the following:

- Verify:
 - The descriptions of the pollutant sources are accurate
 - Site map reflects current conditions
 - Structural and non-structural BMPs are implemented, maintained, and adequate. Adjust BMPs as needed and modify the SWPPP accordingly.
- Inspect for presence of floating materials including oil and grease, visible sheen, discoloration, turbidity, and odor in the stormwater discharges and in outside vehicle maintenance/repair.

Identify who is responsible for periodic inspections of storage areas. The Generic SWPPP worksheets in Appendix E could be used during an inspection.

9.5 Illicit Discharges

Material Storage, heavy equipment storage, and maintenance areas should be monitored periodically for illicit discharges, illicit connections, or illegal dumping.

Illicit discharges are the ***introduction of non-stormwater runoff, sewage, or hazardous materials*** into the public storm drain system through illicit connections or illegal dumping.

Illicit connections are ***physical connections to the storm drain system that have not been approved for storm water drainage by the facility owner and/or functions to convey a prohibited pollutant***. Examples include an internal plumbing connection (e.g., washing machine or garage floor drain) or a service lateral cross-connection.

Illegal dumping is the ***intentional or inadvertent dumping of prohibited materials*** into the conveyance system, streets, inlets or basins, and the improper disposal of material on land that is then discharged to the Municipal Separate Storm Sewer System (MS4) when it rains.

Examples:

- Sanitary wastewater from improper sewage connections, exfiltration, or leakage
- Effluent from improperly operating/ or designed septic tank systems
- Fruit packing wash water
- Surface flow and irrigation drainage from feed lots and hobby farms
- Commercial car wash wastewaters
- Radiator flushing wastewaters
- Engine degreasing wastes
- Improper oil disposal
- Leaky underground storage tanks
- Excess fertilizer or pesticides
- Laundry wastes
- Spills from roadway or other accidents
- Dewatering of construction sites
- Improper disposal of household toxic wastes
- Chemical, hazardous materials, and garbage
- Swimming pool cleaning wastewater and filter backwash

Report any suspected illicit discharges, connections, or dumping observed in storage areas or elsewhere to a supervisor. These reports should be forwarded to the illicit discharge hotline phone number **(509) 574-2300** or e-mail (PublicServicesIllicitDischarge@co.yakima.wa.us).

9.6 Best Management Practices (BMPs)

This section presents operational, structural source control, and treatment best management practices (BMPs) that when implemented may reduce the pollutant load that stormwater carries away from material storage, heavy equipment storage, and maintenance areas into the storm drain system or surface waters.

Worksheets in Appendix E may be used to track which BMPs have been implemented and which BMPs need to be implemented in the future.

Operational BMPs

Non-structural practices that prevent or reduce pollutants from entering stormwater:

- Formation of a Pollution Prevention Team
- Good Housekeeping
- Preventative Maintenance
- Spill Prevention and Reporting and Emergency Cleanup
- Reporting and Recordkeeping
- Inspections
- Employee Training on Maintaining and Implementing the SWPPP

Structural Source and Flow Control BMPs

Physical or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater or control flow.

Treatment BMPs

Physical or mechanical structures/devices that treat stormwater before it is discharged to a surface water. Examples include settling basins or vaults, oil/water separators, biofilters, wet ponds, infiltration systems, and emerging technologies such as media filtration.

Water Quality Standards Violation

BMPs not currently listed in this document for an activity may be required if Ecology determines that a discharge from the municipal separate storm sewer is causing or contributing to a violation of Water Quality Standards.

In response to a water quality violation, Yakima County is responsible for reporting to Ecology current BMPs in use, additional BMPs to be implemented, and a schedule for implementation. Ecology would need to approve this report and may require modifications as needed.

9.6.1 Source Specific BMPs

The following are source specific BMPs related to material storage, heavy equipment storage, and maintenance areas. These BMPs may overlap those to be implemented for the other municipal O&M plans.

BMPs may also be split into those that should *always* be implemented and those that should be *whenever possible*. This gives some flexibility in situations where it is not practical or possible to always implement every BMP.

The BMPs provided are organized into the following groups:

- Winter Road Maintenance Material Storage Areas
- Heavy Equipment Storage Areas
- Vehicle and Equipment Maintenance Areas
- Pesticide and Fertilizer Storage Areas
- Vegetation Disposal Storage Areas
- Trash Storage Areas
- Fueling Stations
- Liquid or Solid Material Loading and Unloading Areas
- Transfer of Small Quantities from Tanks and Containers
- Spills of Oils and Hazardous Substances
- Storage of Liquid, Food Waste, or Dangerous Waste Containers
- Storage or Transfer (Outside) of Solid Raw Materials, By- Products, or Finished Products

Winter Road Maintenance Material Storage Areas

See BMPs listed in Chapter 3.3 Winter Materials.

Heavy Equipment Storage Areas

See BMPs listed in Chapter 4.1 Vehicle Fleet Storage.

Vehicle and Equipment Maintenance Areas

See BMPs listed in Chapter 4.3 Vehicle Fleet Maintenance.

Pesticide and Fertilizer Storage Areas

See BMPs listed in Chapter 6.1 Proper Application of Pesticides, Herbicides, and Fertilizer.

Vegetation Disposal Storage Areas

See BMPs listed in Chapter 6.4 Vegetation Disposal.

Trash Storage Areas

See BMPs listed in Chapter 6.5 Trash Management.

Fueling Stations

A fueling station is a facility dedicated to the transfer of fuels from a stationary pumping station to mobile vehicles or equipment. It includes above or under-ground fuel storage facilities. Stormwater contamination is caused by leaks/spills of fuels, lube oils, radiator coolants, and vehicle wash water.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs

- Prepare an emergency spill response and cleanup plan (per BMPs for Spills of Oil and Hazardous Substances) and have designated trained person(s) available either on-site or on call at all times to promptly and properly implement that plan and immediately clean up all spills. Keep suitable cleanup materials, such as dry absorbent materials, on-site to allow prompt cleanup of a spill. An existing emergency spill response plan may be used implement this BMP.
- Train employees on the proper use of fuel dispensers. Post signs in accordance with the Uniform Fire Code (UFC). Post “No Topping Off” signs (topping of gas tanks may cause spillage and vents gas fumes to the air). Make sure that automatic shutoff on the fuel nozzle is functioning properly.
- The person conducting the fuel transfer must be present at the fueling pump during fuel transfer, particularly at unattended or self-serve stations.
- Keep drained oil filters in a suitable container or drum.

Structural Source Control BMPs

- Design the fueling island to control spills (dead-end sump or spill control separator in compliance with the UFC), and to treat collected stormwater and/or wastewater to required levels. Slope the concrete containment pad around the fueling island toward drains; either trench drains, catch basins, and/or a dead-end sump. The slope of the drains shall not be less than 1 percent (Section 7901.8 of the UFC). Drains to treatment shall have a shutoff valve, which must be closed in the event of a spill. The spill control sump must be sized in compliance with Section 7901.8 of the UFC.
- Design the fueling island as a spill containment pad with a sill or berm raised to a minimum of four inches (Section 7901.8 of the UFC) to prevent the runoff of spilled liquids and to prevent run-on of stormwater from the surrounding area. Raised sills are not required at open-gate trenches that connect to an approved drainage-control system.

- The fueling pad must be paved with Portland cement concrete, or equivalent. Asphalt is not considered an equivalent material.
- The fueling island must have a roof or canopy to prevent the direct entry of precipitation onto the spill containment pad. The roof or canopy should, at a minimum, cover the spill containment pad (within the grade break or fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain. Convey all roof drains to storm drains outside the fueling containment area.
- Stormwater collected on the fuel island containment pad must be conveyed to a sanitary sewer system, if approved by the sanitary authority; or to an approved treatment system such as an oil/water separator and a water quality treatment BMP (such as media filters and biofilters). Discharges from treatment systems to storm drains, to surface water, or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a significant amount of oil and grease.
- Alternatively, stormwater collected on the fuel island containment pad may be collected and held for proper off-site disposal.
- Conveyance of any fuel-contaminated stormwater to a sanitary sewer must be approved by the local jurisdiction and must comply with pretreatment regulations (WAC 173-216-060). These regulations prohibit discharges that could “cause fire or explosion.” An explosive or flammable mixture is defined under state and federal pretreatment regulations based on a flash point determination of the mixture. If contaminated stormwater is determined not to be explosive, then it could be conveyed to a sanitary sewer system.
- Transfer the fuel from the delivery tank trucks to the fuel storage tank in impervious contained areas and ensure that appropriate overflow protection is used. Alternatively, cover nearby storm drains during the filling process and use drip pans under all hose connections.

Additional BMP for Vehicles Ten Feet in Height or Greater:

A roof or canopy may not be practicable at fueling stations that regularly fuel vehicles ten feet in height or greater. At those types of fueling facilities, the following BMPs apply, as well as the applicable BMPs and fire prevention (UFC requirements) of this BMP for fueling stations:

- If a roof or canopy is impractical the concrete fueling pad must be equipped with emergency spill control that includes a shutoff valve for the drainage from the fueling area. The valve must be closed in the event of a spill. An electronically actuated valve is preferred to minimize the time lapse between spill and containment. Spills must be cleaned up and disposed off-site in accordance with BMPs for Spills of Oil and Hazardous Substances.

- The valve may be opened to convey contaminated stormwater to a sanitary sewer, if approved by the sewer authority, or to oil removal treatment such as an American Petroleum Institute (API) or Coalescing Plate (CP) oil/water separator, catchbasin insert, or equivalent treatment, and then to a basic treatment BMP. Discharges from treatment systems to storm drains, or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a significant amount of oil and grease.

An explosive or flammable mixture is defined under state and federal pretreatment regulations, based on a flash point determination of the mixture. If contaminated stormwater is determined not to be explosive or flammable, then it could be conveyed to a sanitary sewer system.

Liquid or Solid Material Loading and Unloading Areas

Loading/unloading of liquid and solid materials at industrial and commercial facilities are typically conducted at shipping and receiving, outside storage, fueling areas, etc. Materials transferred can include products, raw materials, intermediate products, waste materials, fuels, scrap metals, etc. Leaks and spills of fuels, oils, powders, organics, heavy metals, salts, acids, alkalis, etc. during transfer are potential causes of stormwater contamination. Spills from hydraulic line breaks are a common problem at loading docks.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

At All Loading/Unloading Areas:

- A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could otherwise be washed off by stormwater. Sweep outside areas that are covered, for a period of time, by containers, logs, or other material after the areas are cleared.
- Place drip pans, or other appropriate temporary containment device, at locations where leaks or spills may occur, such as hose connections, hose reels, and filler nozzles. Drip pans shall always be used when making and breaking connections. Check loading/unloading equipment, such as valves, pumps, flanges, and connections regularly for leaks and repair, as needed.

At Tanker Truck and Rail Transfer Areas to Above/Below-Ground Storage Tanks:

- To minimize the risk of accidental spillage, prepare an "Operations Plan" that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it, or otherwise have it readily available to employees.
- Report spills that could constitute a threat to human health, welfare, or the environment to the local Stormwater authority and to Ecology. Prepare and implement an Emergency Spill Cleanup Plan for the facility (BMP Spills of Oil and Hazardous Substances) which includes the following BMPs:
 - Ensure the cleanup of liquid/solid spills in the loading/unloading area immediately, if a significant spill occurs, and upon completion of the loading/unloading activity, or at the end of the working day.
 - Retain and maintain an appropriate oil spill cleanup kit on-site for rapid cleanup of material spills. (See BMP "Spills of Oil and Hazardous Substances.") Ensure that an employee trained in spill containment and cleanup is present during loading/unloading.

Structural Source Control BMPs:

At All Loading/Unloading Areas:

- Consistent with Uniform Fire Code requirements and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building, under a roof, lean-to, or other appropriate cover.
- Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area.
- Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated “alleyways” that are not covered by material, containers or equipment.

Whenever Possible:

Structural Source Control BMP:

- For the transfer of pollutant liquids in areas that cannot contain a catastrophic spill, install an automatic shutoff system in case of unanticipated off-loading interruption (e.g., coupling break, hose rupture, overfill, etc.).

At Loading and Unloading Docks:

- Install/maintain overhangs, or door skirts that enclose the trailer end to prevent contact with rain water.
- Design the loading/unloading area with berms, sloping, etc. to prevent the run-on of stormwater.
- Retain on-site the necessary materials for rapid cleanup of spills.

At Tanker Truck Transfer Areas to Above/Below-Ground Storage Tanks:

- Pave the area on which the transfer takes place. If any transferred liquid, such as gasoline, is reactive with asphalt, pave the area with Portland cement concrete.
- Slope, berm, or dike the transfer area to a dead-end sump, spill containment sump, a spill control (SC) oil/water separator, or other spill control device. The minimum spill retention time should be 15 minutes at the greater flow rate of the highest fuel dispenser nozzle through-put rate, or the peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad, whichever is greater. The volume of the spill containment sump should be a minimum of 50 gallons with an adequate grit sedimentation volume.

Spills of Oils and Hazardous Substances

Owners or operators of facilities engaged in drilling, producing, gathering, storing, processing, transferring, distributing, refining, or consuming oil and(or) oil products are required by federal law to have a “Spill Prevention and Control Plan.” A spill control plan is required if: the unburied oil storage capacity of the facility is 1,320 gallons or more, or any single container with a capacity in excess of 660 gallons, could reasonably be expected to discharge oil in harmful quantities, as defined in 40 CFR Part 110, into or upon the navigable waters of the United States or adjoining shorelines {40 CFR 112.1 (b)}. Onshore and offshore facilities that could not, due to their locations, reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines are exempt from these regulations {40 CFR 112.1(1)(i)}. Owners of businesses that produce dangerous wastes are also required by state law to have a spill control plan. These businesses should refer to Ecology’s *Stormwater Management Manual for Eastern Washington*. The federal definition of “oil” is: oil of any kind or any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

The businesses and public agencies identified that are required to prepare and implement an Emergency Spill Cleanup Plan shall implement the following:

- Prepare an Emergency Spill Control Plan (SCP) that includes:
 - A description of the facility, including the owner’s name and address;
 - The nature of the activity at the facility;
 - The general types of chemicals used or stored at the facility;
 - A site plan showing the location of storage areas for chemicals, the locations of storm drains, the areas draining to them, and the location and description of any devices to stop spills from leaving the site, such as positive control valves;
 - Cleanup procedures;
 - Notification procedures to be used in the event of a spill, such as notifying key personnel. Agencies such as Ecology, local fire department, Washington State Patrol, and the local jurisdiction, shall be notified; and
 - The name of the designated person with overall spill cleanup and notification responsibility.

An existing emergency spill response plan may be used to implement this BMP.

- Train key personnel in the implementation of the Emergency SCP. Prepare a summary of the plan and post it at appropriate points in the building, identifying the spill cleanup coordinators, location of cleanup kits, and phone numbers of regulatory agencies to be contacted in the event of a spill;
- Update the SCP regularly;
- Immediately notify Ecology and the local jurisdiction if a spill may reach sanitary or storm sewers, groundwater, or surface water, in accordance with federal and Ecology spill reporting requirements;
- Immediately clean up spills. Do not use emulsifiers for cleanup unless an appropriate disposal method for the resulting oily wastewater is implemented. Absorbent material shall not be washed down a floor drain or storm sewer; and,
- Locate emergency spill containment and cleanup kit(s) in high potential spill areas. The contents of the kit shall be appropriate for the type and quantities of chemical liquids stored at the facility.

Whenever Possible:

Operational BMP:

- Spill kits should include appropriately lined drums, absorbent pads, and granular or powdered materials for neutralizing acids or alkaline liquids, where applicable. In fueling areas, absorbent should be packaged in small bags for easy use and small drums should be available for storage of absorbent and/or used absorbent. Spill kits should be deployed in a manner that allows rapid access and use by employees.

Storage of Liquid, Food Waste, or Dangerous Waste Containers

Steel and plastic drums with volumetric capacities of 55 gallons or less are typically used at industrial facilities for container storage of liquids and powders. The BMPs specified below apply to container(s) located outside a building used for temporary storage of accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock or cleaning chemical, or dangerous wastes (liquid or solid), unless the business is permitted by Ecology to store the wastes. Leaks and spills of pollutant materials during handling and storage are the primary sources of pollutants. Oil and grease, acid/alkali pH, BOD, COD are potential pollutant constituents.

Store containers in impervious containment under a roof or other appropriate cover, or in a building. For roll containers (for example, dumpsters) that are picked up directly by the collection truck, a filet can be placed on both sides of the curb to facilitate moving the dumpster. If a storage area is to be used on-site for less than 30 days, a portable temporary secondary system can be used in lieu of a permanent system as described above.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

- Place tight-fitting lids on all containers.
- Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading of containers.
- Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers, and replace and tighten bungs in drums, as needed.
- Businesses accumulating dangerous wastes that do not contain free liquids need only to store these wastes in a sloped designated area with the containers elevated or otherwise protected from stormwater run-on.
- Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage, or any unauthorized use.
- If the material is a dangerous waste, the business owner must comply with any additional Ecology requirements.
- Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code.
- Cover dumpsters, or keep them under cover, such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
- Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

Structural Source Control BMPs:

- Keep containers with dangerous waste, food waste, or other potential pollutant liquids inside a building, unless this is impracticable due to site constraints or Uniform Fire Code requirements.
- Store containers in a designated area, which is covered, bermed or diked, paved, and impervious, in order to contain leaks and spills. The secondary containment shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.
- For liquid wastes, surround the containers with a dike. The dike must be of sufficient height to provide a volume of either: 10 percent of the total enclosed container volume or 110 percent of the volume contained in the largest container, whichever is greater, or, if a single container, 110 percent of the volume of that container.
- Where material is temporarily stored in drums, a containment system can be used as illustrated, in lieu of system above.
- Place containers mounted for direct removal of a liquid chemical for use by employees inside a containment area as described above. Use a drip pan during liquid transfer.

Treatment BMPs:

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local jurisdiction, or to appropriate treatment, such as an API or CP oil/water separator, catch basin filter or other appropriate system (see Chapter 6). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.
- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

Storage or Transfer (Outside) of Solid Raw Materials, By- Products, or Finished Products

Solid raw materials, by-products, or products, such as gravel, sand, salts, topsoil, compost, logs, sawdust, wood chips, lumber and other building materials, concrete, and metal products, are typically stored outside in large piles, stacks, etc. at commercial or industrial establishments. Contact of outside bulk materials with stormwater can cause leachate and/or erosion of the stored materials. Contaminants include TSS, BOD, organics, and dissolved salts (sodium, calcium, and magnesium chloride, etc).

Provide impervious containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutant(s) and TSS.

BMPs that could be implemented to protect water quality:

Always:

Operational BMP:

- Do not hose down the contained stockpile area to a storm drain, or a conveyance to a storm drain, or to receiving water.

Structural Source Control BMP Options:

Choose one or more of the source control BMP options listed below for stockpiles greater than five cubic yards of erodible or water soluble materials, such as soil, road deicing salts, compost, unwashed sand and gravel, sawdust, etc. Also included are outside storage areas for solid materials, such as logs, bark, lumber, metal products, etc.

- Store in a building or paved and bermed covered area; or
- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material as illustrated; or
- Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of uncontaminated stormwater and to collect and convey runoff to treatment. Slope the paved area in a manner that minimizes the contact between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.; or
- For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and at any catch basins as needed to prevent erosion and discharge of the stockpiled material off-site or to a storm drain. Ensure that contaminated stormwater is not discharged directly to catch basins without conveying through a treatment BMP.

Treatment BMP:

Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

Whenever Possible:

Operational BMPs:

- Maintain drainage areas in and around storage of solid materials with a minimum slope of 1.5 percent to prevent pooling and to minimize leachate formation. Areas should be sloped to drain stormwater to the perimeter where it can be collected, or to internal drainage “alleyways” where material is not stockpiled.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials.
- If and when feasible, collect and recycle water-soluble materials (leachates) to the stockpile.
- Stock cleanup materials, such as brooms, dustpans, and vacuum sweepers near the storage area.

9.6.2 Operation and Maintenance

Implement procedures for operation and maintenance (O&M) for structural source control and treatment BMPs. Generic procedures for common BMPs can be found in the Yakima County Stormwater Collection and Conveyance System Operation and Maintenance Plan.

10. Flood Management Projects

Yakima County will assess water quality impacts in the design of all new flood management projects that are associated with the Municipal Separate Storm Sewer System (MS4) or that discharge to the MS4. This will include considering use of controls that minimize impacts to site hydrology and still meet project objectives.

Existing flood management projects that are associated with the MS4 or that discharge to the MS4 may be reviewed and evaluated to determine whether changes or additions should be made to improve water quality.

Traditional approaches of flood management often include projects such as widening channels, dredging riverbeds, or creating dikes, levees, or embankments. While the purpose of these controls are to increase the capacity of the main channel or decrease the amount of water moving into the main channel, water quality may not always be taken into consideration (Ecology, 2003).

The Yakima County Public Services Department's Surface Water Management Division is responsible for flood management project design.

10.1 Water Quality Impact Assessment

Assess the need for structural BMPs such as booms or other devices to collect trash to be installed with the flood management project.

10.2 Existing Flood Management Projects Associated with the MS4

Yakima County flood management projects associated with or discharge to the MS4 include:

- None at this time

11. Other Facilities

Other facilities owned by Yakima County that would reasonably be expected to discharge contaminated runoff include:

- Potable Waterline and Fire Hydrant Flushing
- Printing Operations
- Yakima Air Terminal – McAllister Field
- State Fair Park

11.1 Potable Water Source Discharges

Planned discharges from potable water sources, including water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water may be discharged to the Multiple Separate Storm Sewer System (MS4) or public Underground Injection Controls (UICs) under certain conditions. The discharges must be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4 or public UICs (Yakima County, 2009). The municipal stormwater permit prohibits discharges that are not pH adjusted and de-chlorinated. Washington water quality standards state that pH shall be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 or 0.5 units (depending on the species present in the receiving water).

Water discharged from water line flushing, hyper chlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water may cause a number of environmental impacts if chlorine and pH exceed certain thresholds. Excessive chlorine concentrations may kill nitrifying bacteria and other aquatic life necessary for sustenance for the aquatic food chain/nutrient cycling. Spikes of ammonia and nitrite, through gill necrosis, result in respiratory failure or suffocation. Flushing at high velocities may cause soil erosion and uproot vegetation (Santa Cruz, 2008).

However, care must also be taken during the dechlorination process because over-application of commonly used chemicals such as sodium metabisulfate and sulfur dioxide may deplete the dissolved oxygen concentration or alter pH of receiving waters.

Field Methods for Residual Chlorine Measurement

Many common methods for chlorine measurement such as water quality test strips, swimming pool test kits, and orthotolidine indicator kits lack sensitivity required for ensuring regulatory compliance.

A colorimetric kit supplied by Hach Company is widely used to monitor dechlorination in the field. The kit can measure free or combined chlorine residuals at concentrations of 0 to 4.5 mg/L with a detection limit of 0.1 mg/L. In this method, a pre-measured amount of reagent is added to the water sample, mixed well, and the sample is analyzed for total residual chlorine concentration. A liquid crystal detector indicates the chlorine concentration is solution based on the intensity of the color formed (Tikkanen et al., 2001).

Industrial Testing Systems, Inc. at Rock Hill, South Carolina has developed chlorine-monitoring strips for measuring free and combined chlorine at a wide range of residual chlorine concentration (0.02 to 750 mg/L). concentrations. This method may be useful in measuring residual chlorine concentrations in hyper chlorinated water without having to dilute the samples (Tikkanen et al., 2001).

Dechlorination Methods

Various dechlorinating methods exist, including discharging to stormwater sewer systems. The most common include a dechlorinating diffuser and chemical tablet chamber which water passes through before being discharged. Other emerging chemical and non-chemical technologies may provide an alternative.

Non-Stormwater Sewer System Practices

- Discharge to Sanitary Sewer
- Discharge to Retention Tank
- Land Application

Discharge to MS4 or UICs

- Dechlorinating Diffuser and Chemical Tablet Chamber
- Vitamin C (in ascorbic acid and sodium ascorbate form)
 - Safe and environmentally friendly alternative to sulfur-based compounds.
- Dechlorination Mats/Strips
 - Emerging technology to facilitate effective contact between the flow and sodium sulfite tablets during dechlorination.
 - The dechlorination mat or strip is laid across the flow path or over the storm drain.
- Venturi Based Dechlorination Devices
 - Feeds chemical solutions into chlorinated water flow while attached to the downstream end of a hose connected to fire hydrants.

The above methods were compiled from the following sources:

Chlorine Concerns and the Endangered Species Act: Vitamin C and Fish
(Peterka, 2002)

Guidance Manual for Disposal of Chlorinated Water
(Tikkanen et al., 2002)

Best Management Practices (BMPs) for Municipal Operations
(City of Santa Cruz, 2008)

11.2 Yakima County Department of Printing

Materials used in the printing process include: inorganic acids, resins, solvents, polyester film, developers, alcohol, vinyl lacquer, dyes, acetates, polymers. Waste products may include: waste inks and ink sludge, resins, photographic chemicals, solvents, acid and alkaline solutions, chlorides, chromium, zinc, lead, spent formaldehyde, silver, plasticizers, and used lubricating oils. As the printing operations are conducted indoors, the only likely points of potential contact with stormwater are the outside temporary storage of waste materials and offloading of chemicals at external unloading bays. Pollutants can include TSS, pH, heavy metals, oil and grease, and chemical oxygen demand (COD).

Ensure appropriate disposal and NPDES permitting of process wastes. Cover and contain stored raw and waste materials.

The Yakima County Department of Printing is responsible for all operation and maintenance activities associated with printing operations.

BMPs that could be implemented to protect water quality:

Always:

Operational BMPs:

Discharge process wastewaters to a sanitary sewer, if approved by the local jurisdiction, or to an approved process wastewater treatment system.

- Do not discharge process wastes or wastewaters into storm drains or surface water.
- Determine whether any of these wastes qualify for regulation as dangerous wastes and dispose of them accordingly.

Structural BMP:

- Store raw materials or waste materials that could contaminate stormwater in covered and contained areas.

Whenever Possible:

- Train all employees in pollution prevention, spill response, and environmentally acceptable materials handling procedures.
- Store materials in proper, appropriately labeled containers. Identify and label all chemical substances.
- All stormwater management devices should be inspected regularly and maintained as necessary.
- Try to use press washes without listed solvents, and with the lowest possible volatile organic compound (VOC) content. Do not evaporate ink cleanup trays to the outside atmosphere.

- Place cleanup sludge into a container with a tight lid and dispose of as hazardous waste. Do not dispose of cleanup sludge in the garbage or in containers of soiled towels.

For additional information on pollution prevention, the following Washington Department of Ecology publications are recommended: *A Guide for Lithographic Printers*, Publication #94-139 (Appendix F) and *A Guide for Photo Processors*, Publication #94-138 (Appendix G).

11.3 Yakima Air Terminal - McAllister Field

Implementation of best management practices (BMPs) for aircraft fueling, de-icing, cleaning, and maintenance operations may help protect stormwater from contamination. Similar operations related to runway/taxiways may also produce contaminated stormwater runoff if proper BMPs are not implemented.

Stormwater runoff from runways/taxiways discharges through natural dispersion into adjacent grass, by approximately six outfalls into Spring and Wide Hollow Creeks, and possibly to the ground by drywells (unconfirmed). Commercial properties in the northern portion of the Yakima Air Terminal – McAllister Field discharge into the City of Yakima's MS4.

Horizon Air currently holds an Industrial NPDES Permit for operations performed at the Yakima Air Terminal – McAllister Field. Yakima Air Terminal – McAllister property ownership and responsibility for operations are split equally between the City of Yakima and Yakima County. Yakima Air Terminal – McAllister Field may apply for an Industrial Stormwater Permit in the future.

Operation and maintenance activities at the Yakima Air Terminal – McAllister Field associated with parking lots, buildings, vehicles, and landscaping/open space will incorporate the BMPs outlined within each applicable previous chapter of this document.

Airfield Terminal and McAllister Field Maintenance staff are responsible for operation and maintenance activities performed at the Yakima Air Terminal and McAllister Field. Some properties connected to the airport with similar operations are owned by the City of Yakima/ Yakima County but leased to private tenants. Operation and maintenance activities are performed on these properties by the private tenants who will also implement the BMPs outlined in this chapter.

11.3.1 Deicing and Anti-Icing Operations

Deicing and/or anti-icing compounds are used on airport runways and aircraft to control ice and snow. Typically ethylene glycol and propylene glycol are deicers used on aircraft.

Spent glycol discharges in aircraft application areas are process wastewaters that are regulated under Ecology's industrial stormwater general permit. BMPs for aircraft deicing must be consistent with aviation safety and the operational needs of the aircraft operator.

BMPs that could be implemented to protect water quality:

BMPs for Aircraft:

Always:

- Conduct aircraft deicing or anti-icing applications in impervious containment areas. Collect aircraft deicer or anti-icer spent chemicals, such as glycol, draining from aircraft in deicing or anti-icing application areas. Convey the spent chemicals, in accordance with an adopted plan approved by agencies with jurisdiction, to a sanitary sewer, treatment facility, or other disposal or recovery facility consistent with the plan. Divert deicing runoff from paved gate areas to appropriate collection areas or conveyances for proper treatments or disposal.
- Do not allow spent deicer or anti-icer chemicals or stormwater contaminated with aircraft deicer or anti-icer chemicals to be discharged from application areas, including gate areas, to surface water, or groundwater, directly or indirectly.
- Transfer deicing and anti-icing chemicals on an impervious containment pad, or equivalent spill/leak containment area, and store in secondary containment areas. (See storage of liquids in above-ground tanks).

Whenever Possible:

- Establish a centralized aircraft de/anti-icing facility, if feasible and practicable, or in designated areas of the tarmac equipped with separate collection drains for the spent deicer liquids.
- Consider installing an aircraft de/anti-icing chemical recovery system, if practicable, or contract with a chemical recycler.

BMPs for Airport Runways/Taxiways:

Always:

- Avoid excessive application of all de/anti-icing chemicals, to prevent contamination of stormwater. Apply at appropriate rate to provide aircraft safety.
- Store and transfer de/anti-icing materials on an impervious containment pad or an equivalent containment area and/or under cover in accordance with “BMP Storage and Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products” in this document. Other material storage and transfer approaches may be considered if it can be demonstrated that stormwater will not be contaminated, or that the de/anti-icer material cannot reach surface or ground waters.
- Follow manufacturer’s recommendations.

Whenever Possible:

- Include limits on toxic materials and phosphorus in the specifications for de/anti-icers.
- Consider using anti-icing materials rather than deicers if it will result in less adverse environmental impact.
- Select cost-effective de/anti-icers that cause the least adverse environmental impact.
- Sweep/clean up accumulated de/anti-icing materials and grit from runways as soon as practicable after the road surface clears.

11.4 State Fair Park

All operation and maintenance activities at State Fair Park will incorporate the BMPs outlined within each applicable chapter of this document.

State Fair Park consists of the Central Washington Fairgrounds, the Grandstand, the Yakima SunDome, and Yakima County Stadium. Yakima County owns the property at State Fair Park and leases it to the non-profit Central Washington Fair Association.

The Central Washington Fair Association is responsible for all operations and maintenance activities at State Fair Park.

References

- City of Mt. Vernon, 2008, Storm Water Pollution Prevention Plan Fir Street Maintenance Facility.
- City of Santa Cruz, 2008, Best Management Practices (BMPs) for Municipal Operations.
- City of Seattle Fleets and Facilities Departments, 2007, Generic Stormwater Pollution Prevention Plan.
- Clark County Clean Water Program, 2009, Clark County Stormwater Pollution Control Manual.
- Environment Canada, 2007, Best Practices for the Use and Storage of Chloride-Based Dust Suppressants: Environment Canada, Chemicals Sector Division, Gatineau, Quebec.
- Novotney, M., Winer R., 2008, Municipal Pollution Prevention/ Good Housekeeping Practices: Center for Watershed Protection, Ellicott, Maryland.
- Rabasca, K., Rinehart, C., 2006, Guidelines and Standard Operating Procedures Illicit Discharge Detection and Elimination and Pollution Prevention/ Good Housekeeping for Stormwater Phase II Communities in New Hampshire.
- Peterka, G., 2002, Chlorine Concerns and the Endangered Species Act: Vitamin C and Fish: American Water Works Association, national conference, New Orleans, Louisiana, Abstracts, <http://www.ilikewater.com>.
- Tanner, D.Q., Wood, T.M., 2000, The Effects of Calcium Magnesium Acetate (CMA) Deicing Material on the Water Quality of Bear Creek Clackamas County, Oregon, 1999: Water-Resources Investigations Report 00-4092.
- Tikkanen, M.W., Schroeter, J.H., Leong, Y.C., Rajagopalan, G., 2001, Guidance Manual for the Disposal of Chlorinated Water.
- Washington State Department of Ecology Water Quality Program, 2003, Model Municipal Stormwater Program for Eastern Washington: <http://www.ecy.wa.gov/biblio/0310076.html>.
- Washington State Department of Ecology Water Quality Program, 2004, Stormwater Management Manual for Eastern Washington.
- Washington State Department of Ecology Water Quality Program, 2004, Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities.

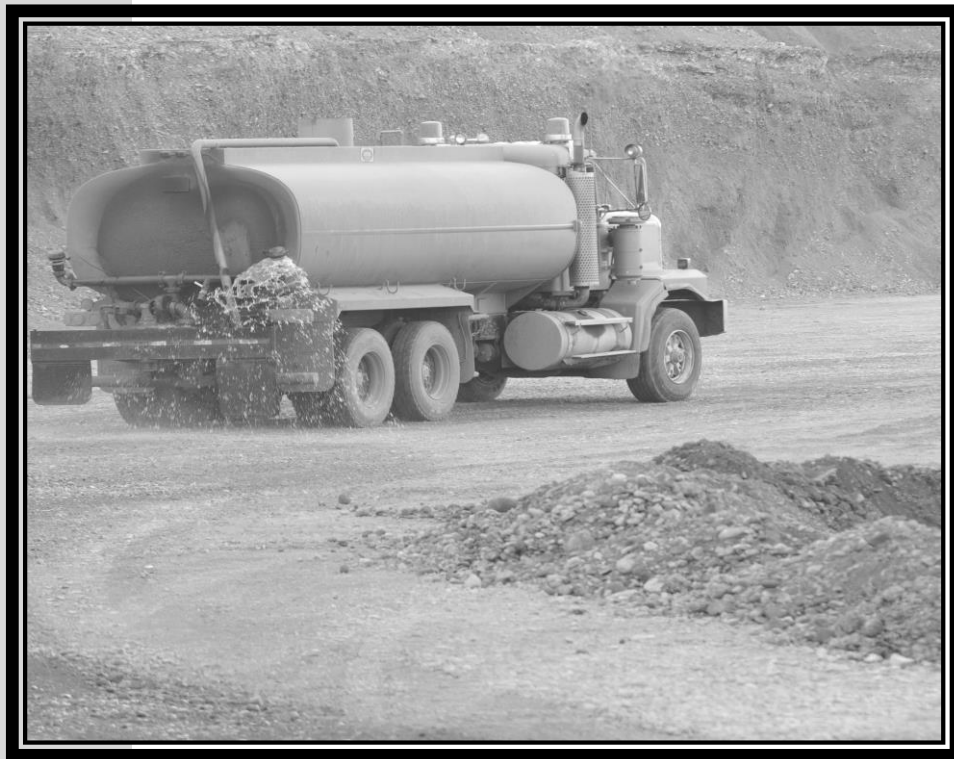
Washington State Department of Ecology Water Quality Program, 2007, Eastern Washington Phase II Municipal Stormwater Permit:
<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseiiEwa/ewph2permit.html>

Washington State Department of Ecology Water Quality Program, 2008, Stormwater Discharges Associated with INDUSTRIAL Activity.

Yakima County, 2009, Regional Stormwater Illicit Discharge Model Ordinance.

Appendix A thru Appendix E. (Included as Separate Documents)

Appendix A.



Methods for Dust Control



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For more information contact:

Hazardous Waste and Toxics Reduction Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6700

Washington State Department of Ecology - www.ecy.wa.gov

- | | |
|---------------------------------------|--------------|
| ○ Headquarters, Olympia | 360-407-6000 |
| ○ Northwest Regional Office, Bellevue | 425-649-7000 |
| ○ Southwest Regional Office, Olympia | 360-407-6300 |
| ○ Central Regional Office, Yakima | 509-575-2490 |
| ○ Eastern Regional Office, Spokane | 509-329-3400 |

Accommodation Requests

To request ADA accommodation including materials in a format for the visually impaired, call the Hazardous Waste and Toxics Reduction Program, 360-407-6700. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

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Why is Dust a Problem?

Dust can contain soil, ash, soot, salts, pollen and spores, and a host of other materials depending on the location and activity causing the dust. For example, dust from construction sites, industrial areas, agricultural operations, or roadways might contain pesticides, heavy metals, asbestos, bacteria, fungi, and a variety of other contaminants. Dust particles are very small and easily inhaled. Even short-term exposure to dust can cause respiratory problems and allergic reactions.

Dust emissions also contribute to air pollution significantly. Outdoor dust occurs throughout Washington, especially in dry areas like Eastern Washington. At various times of the year, dry weather conditions and wind can cause big dust storms, but there are many other common sources of dust emissions as well.

Sources of dust emissions include:

- Agricultural field operations
- Parking lots or feed lots
- Rural areas
- Waste cleanup sites
- Industrial facilities
- Land clearing
- Construction activities
- Demolition activities
- Storage piles
- Masonry
- Landscaping
- Paved and unpaved roads
- Transportation and track out
- Activities on vacant land
- Equipment yards

Dust contributes to:

- Health and respiratory problems
- Vehicle accidents from low visibility
- Impacts to fish and other aquatic life
- Impacts to soil and vegetation
- Impacts to water quality
- Vehicle and equipment erosion
- Lowered property values
- Lowered quality of life
- Complaints from the public

Controlling Dust Emissions

Dust emissions can be prevented or reduced in four basic ways:

1. Limit the creation or presence of dust-sized particles.
2. Reduce wind speed at ground level.
3. Bind dust particles together.
4. Capture and remove dust from its sources.

Some dust control techniques work with many sources of dust:

- Plant or mulch areas that won't received vehicle traffic.
- Apply gravel or landscaping rock to areas where planting, mulching, or paving is impractical.
- Construct natural or artificial wind breaks or wind screens. Consider restricting landclearing or earthmoving activities during periods of high winds.
- Apply water to reduce emissions from temporary sources.
- Clear vegetation only from areas you will work right away.
- Surface-apply chemical suppressants to non-trafficked areas to form a less erodible soil surface.

Other techniques are more specific:

Unpaved, Trafficked Areas

Lower speed limits. High vehicle speed increases the amount of dust stirred up from unpaved roads and lots. Lowering the speed of a vehicle from 45 miles per hour(mph) to 35 mph can reduce dust emissions by up to 22 percent.



Restrict the number or type of vehicles that can access the road, if possible. Restricting use by tracked vehicles and heavy trucks also helps prevent damage to road surface and base.

Paved, Trafficked Areas

- Improve paved material conditions by reducing the use of skid control sand or salt. Use coarse material that isn't easily crushed into powder during snow and ice season.
- Vacuum or wet sweep fine dirt and skid control materials from paved roads soon after winter weather ends and at other times as needed.
- Reduce vehicle track out: fill muddy areas with gravel or other surface material, install grizzlies, or build vehicle tire/underbody wash stations near unpaved road junctions.
- Pave or stabilize shoulders of paved roads with gravel and vegetation.
- Provide for stormwater drainage and construct curbing to prevent water erosion onto paved roads.

Upgrade the Road

- Increase surface strength by improving particle size, shape, and mineral types that make up the surface and base materials.
- Add surface gravel to reduce the source of dust emission. Limit the amount of fine particles (smaller than .075 mm) to 10-20 percent.
- Improve drainage and crown, the normal slope toward the outer edge of a road surface.
- Use geotextile fabrics to increase the strength of new roads or roads undergoing reconstruction.
- Use alternate, paved routes, if available. Paved surfaces produce up to 90 percent less dust than unpaved surfaces.
- Apply chemical dust suppressants by blending the product with the top few inches of surface material. Suppressants may also be applied as surface treatments. Chemical treatment can reduce emissions by 30 to 80 percent.
- Pave or treat permanent haul roads, construction sites, and parking or staging areas at commercial, municipal, or industrial facilities.



Other Specific Sources

- Apply load control measures like load covering, freeboard, bed-liners, and watering. Require prompt clean-up of spills.
- Cover piles with wind-impervious fabric.
- Limit use of off-road recreational vehicles on open land. Confine operations to specific areas, require permits, or prohibit use.
- *For agricultural fields:* use strip cropping, increase soil surface roughness, plant wind breaks, rotate crops, reduce tillage, plant cover crops, limit burning, and apply mulch.
- *For feed lots:* use sprinkler systems, surface amendments, manure harvesting, and vegetative barriers to control dust and odor.

Chemical Dust Suppression

Chemical dust suppressants are commercially available for use on many types of emission sources. The performance of a product depends on many factors:

- Application method and rate.
- Surface moisture content during application.
- Hydrological conditions, like site precipitation and drainage.
- Mechanical stability of the surface aggregate.
- Percent of fines in the aggregate mix.
- Structure of the base and subgrade.

Don't expect a chemical suppressant to compensate for deficiencies in surface characteristics, material composition, local site, or climate factors.

Keep in mind that most of the products designed for trafficked areas are primarily intended for medium-traffic, low cost roads, that are typically surfaced with gravel. Dust suppression and periodic unpaved road maintenance are normally combined. For unpaved road applications, products *applied and mixed into the road surface* usually work better than if simply applied to the surface.

Evaluate available products against your own specific emission source, site, performance, and cost criteria. Review the manufacturer's product literature, safety data sheet (SDS), and instructions before purchase and prior to use. Consider the risk to human health or the environment from hazardous characteristics of product ingredients, application practices, and the environmental characteristics of the site.

Be aware that during preparation or application, chemical dust suppressants may exhibit hazardous characteristics such as corrosivity or ignitability. Some products may produce excessive heat when mixed with water. Others may contain toxic or carcinogenic ingredients or contaminants. Observe all safety precautions and follow the manufacturer's directions when handling, mixing, and applying chemical suppressants.

Any suppressant product or its ingredients may migrate from a treated site due to carelessness in application, runoff, leaching, volatility, dusting, or adhesion to vehicles. In areas where surface water or groundwater is nearby and where stream flow rates are low, adverse environmental impacts are possible.

The burden of proof for product safety lies with the chemical manufacturers, distributors and users. Ask the vendor whether their product has characteristics or meets criteria that would cause it to designate as a Washington State dangerous waste as it is applied to the ground, after drying or curing, or as a result of biochemical decay.

Washington's Globally Harmonized System for Hazard Communication (Chapter 296-901, WAC) requires chemical manufacturers to obtain or develop an SDS for each hazardous chemical they produce. All employers must have an SDS at the workplace for each hazardous chemical they use.

The Department of Ecology does not approve, recommend, or endorse specific products or service providers. However, we can help you in evaluating the environmental safety of specific products. Contact your regional office of Ecology's Hazardous Waste and Toxics Reduction Program for assistance and ask about safer alternatives.

Do not use undocumented material for dust control. All legitimate products have manufacturer product literature and an SDS that describe the product's ingredients, characteristics, recommended use, safety practices, and limitations of use. If Ecological information (SDS Section 12) is not provided on the SDS, obtain and review this information from the manufacturer before making a purchasing decision.

Prepare a Dust Control Plan

A good dust control plan can help reduce negative effects from dust. At a minimum a dust control plan should include:

- Identification of all fugitive dust sources.
- A description of the dust control method(s) to be used for each source.
- A schedule, rate of application, calculation or some other means of identifying how often, how much or when the control method is to be used.
- Provisions for monitoring and recordkeeping.
- A backup plan in case the first control plan does not work or is insufficient.
- The name and phone number of the person responsible for making sure the plan is implemented and who can be contacted in the event of a dust complaint.

Be sure to consult with your local Air Pollution Control agency.

Cost of Dust Suppression Projects

Developing an effective and cost-efficient dust control program means accurately identifying and accounting for the true costs and savings of any new alternative, compared to your current practices. Using unpaved roads as an example, the costs can be grouped into the categories listed below:

Road Improvement Costs

Drainage improvements, geometric improvements, repairing of failed areas, excavation and removal of substandard material, and addition of surface material. (Note: These costs are not part of dust suppression program costs if they would be required anyway, without dust suppression.)

Surface Preparation Costs

Addition of select material (fines or coarse material), breaking up and loosening the road surface, watering, shaping, and compacting.

Product Supply and Application Costs

Material cost, transportation cost, application cost, and contract supervisor cost (if a project supervisor is provided by the contractor).

Miscellaneous Costs

Traffic control, detour, inspection, crew supervision, material storage (if inventory is maintained) and liability costs.

Dust Program Savings and Benefits

Road Maintenance and Repair Savings

Less frequent regrading and less frequent need to add supplementary road materials accrue savings due to reduced loss of gravel and fines and greater durability of the road surface.

Savings from Non-road and Off-site Benefits

Savings accrued from dust control program benefits not specifically related to the road itself, such as human health, vehicles and equipment, and the environment.

Washington Regulations Related to Dust Control

The following laws apply in Washington:

[Chapter 70.94 RCW](#)¹ Washington Clean Air Act and [Chapter 173-400 WAC](#)²
General Regulations for Air Pollution Sources

These statutes require owners and operators of fugitive dust sources to prevent fugitive dust from becoming airborne and to maintain and operate sources to minimize emissions.

¹ Revised Code of Washington

² Washington Administrative Code

Chapter 70.95I RCW Used Oil Recycling

Prohibits the use of used oil as a dust suppressant. In fact, federal regulation 40 CFR Part 279, Standards for the Management of Used Oil (Subpart I) prohibits the use of used oil as a dust suppressant in all 50 states unless a state petitions EPA. If you plan to use a chemical suppressant, verify that it does not contain any used oil. Used oil is defined as: “(a) lubricating fluids that have been removed from an engine crankcase, transmission, gearbox, hydraulic device, or differential of an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine; (b) any oil that has been refined from crude oil, used, and as a result of use, has been contaminated with physical or chemical impurities; and (c) any oil that has been refined from crude oil and, as a consequence of extended storage, spillage, or contamination, is no longer useful to the original purchaser” (RCW 70.95I.010).

Chapter 90.48 RCW, Water Pollution Control

Section .080 prohibits the discharge of any material into surface or groundwater that could cause pollution as defined in WAC 173-200-020(22). If your site is near surface or groundwater, use dust control measures that will not have any aquatic impact. If you decide to use a chemical dust suppressant, select a product with no or low aquatic toxicity.

Ecology’s [Sand and Gravel General Permit](#) for sand and gravel operations has specific requirements for use of chemical treatment products including a prohibition of the use of ligninsulfonate for dust suppression in excavated areas, including areas where topsoil has been removed.

Chapter 70.105 RCW, Hazardous Waste Management

Prohibits disposal to the ground of any dangerous (hazardous) waste. If you are planning to use a chemical dust suppressant, make sure it does not contain any dangerous waste ingredients.

Chapter 70.105D RCW Hazardous Waste Cleanup - Model Toxics Control Act

This law requires the identification and cleanup of hazardous sites. Ecology can investigate reports of releases or the presence of hazardous substances. If a hazardous product is used as a dust suppressant and Ecology later receives a complaint of contamination, a site assessment may be conducted.

A cleanup may be required if a potential threat to human health or the environment is determined. The determination depends on the hazardous substance(s) present, the concentration(s), the environmental characteristics of the site including proximity to surface and groundwater, as well as the current or proposed future use of the property.

Anyone considering the use of products that contain hazardous substances should carefully weigh the risk of possible future cleanup costs or loss in property value, especially if land use is likely to change toward more unrestricted uses such as residential housing.

[Chapter 90.03 RCW](#) Water Code and [Chapter 90.44 RCW](#) Regulation of Public Groundwaters

These laws require a water right permit for all surface water withdrawal and for any water from a well that will exceed 5,000 gallons per day (RCW 90.44.050). If you plan to use water for dust suppression at your site, be sure that you have a legal right to that water. If in doubt, check with Ecology's [Water Resources Program](#). Temporary permits are usually obtainable in a short time period. In some instances, water may need to be obtained from a different area and hauled in, or from an existing water right holder.

Information and Resources

[Washington Clean Air Agencies](#)

[Benton Clean Air Agency](#) – Benton County

[Ecology Central Regional Office](#) – Chelan, Douglas, Kittitas, Klickitat, Okanogan counties

[Ecology Eastern Regional Office](#) – Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman counties

[Ecology Northwest Regional Office](#) – San Juan County

[EPA Region 10](#) – Tribal lands

[Northwest Clean Air Agency](#) – Island, Skagit, Whatcom counties

[Olympic Region Clean Air Agency](#) – Clallam, Grays Harbor, Jefferson, Mason, Pacific, Thurston counties

[Puget Sound Clean Air Agency](#) – King, Kitsap, Pierce, Snohomish counties

[Southwest Clean Air Agency](#) – Clark, Cowlitz, Lewis, Skamania, Wahkiakum counties

[Spokane Regional Clean Air Agency](#) – Spokane County

[Yakima Regional Clean Air Agency](#) – Yakima County

Dust Palliative Selection and Application Guide:

<http://www.fs.fed.us/eng/pubs/html/99771207/99771207.html>

Aggregate Roads Dust Control - A Brief Synthesis of Current Practices

<http://www.lrrb.org/media/reports/2013RIC67.pdf>

University of New Hampshire – Technology Transfer Center: Unpaved Roads:

<http://www.t2.unh.edu/unpaved-roads>

EPA's Safer Choice Standard: <http://www2.epa.gov/saferchoice/safer-choice-standard>

Search Safer Choice Products: <http://www2.epa.gov/saferchoice/products>

APPENDIX 1 – Minimum Technical Requirements for Stormwater Management at New Development and Redevelopment Sites

Local jurisdictions are required to adapt these Minimum Technical Requirements, and/or more stringent requirements, into local ordinances or other regulatory mechanisms no later than three years after the effective date of this permit as part of their Stormwater Management Programs to control construction and post-construction stormwater runoff. Projects proposed by the local jurisdiction's own departments and agencies must comply with these requirements.

This Appendix is adapted from Chapter 2 of the *Stormwater Management Manual for Eastern Washington* (2004), including corrections and clarifications posted to the Department's website on or before February 15, 2006, and the *Construction Stormwater General Permit* issued by the Department on November 16, 2005.

Exemptions

The following practices are exempted from the Minimum Technical Requirements:

Forest Practices:

Forest practices regulated under Title 222 WAC are exempt. Conversions of forest lands to other uses are not exempt.

Commercial Agriculture:

Commercial agriculture practices involving working the land for production are generally exempt. However, the construction of impervious surfaces is not exempt.

Oil and Gas Field Activities or Operations:

Construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations are exempt. Operators are encouraged to implement and maintain Best Management Practices to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events.

Road and Parking Area Preservation/Maintenance:

The following road and parking area maintenance practices are exempt (see also Partial Exemptions below):

- Pothole and square cut patching;
- Crack sealing;

- Resurfacing with in-kind material without expanding the road prism;
- Overlaying existing asphalt or concrete pavement with bituminous surface treatment (BST or “chip seal”), asphalt or concrete without expanding the area of coverage;
- Shoulder grading;
- Reshaping/regrading drainage systems; and
- Vegetation maintenance.

Partial Exemptions

The following practices are generally exempted from all of the Minimum Technical Requirements except for Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*:

Underground Utility Projects:

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*.

Road and Parking Area Preservation/Maintenance:

A preservation or maintenance project is defined as preserving/protecting infrastructure by rehabilitating or replacing existing structures to maintain operational and structural integrity, and for the safe and efficient operation of the facility. Maintenance projects do not increase the traffic capacity of a roadway or parking area. The following practices are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*:

- Removing and replacing a concrete or asphalt roadway to base course or subgrade or lower without expanding or improving the impervious surfaces.
- Repairing the roadway base or subgrade.
- Overlaying existing gravel with bituminous surface treatment (BST or “chip seal”) or asphalt or concrete without expanding the area of coverage, or overlaying BST with asphalt, without expanding the area of coverage. For this type of project, partial exemption applies only under the following conditions:
 - For roads, these practices are exempt from additional Core Elements only if the traffic surface will be subject to an average daily traffic volume of less than 7,500 on an urban road or an average daily traffic volume of less than 15,000 vehicles on a rural road, freeway, or limited access control highway. If these thresholds are exceeded, refer to the Redevelopment section above to determine which Core Elements apply.

- For parking areas, these practices are exempt from additional Core Elements only if the traffic surface will be subject to less than 40 trip ends per 1,000 square feet of building area or 100 total trip ends. If these thresholds are exceeded, refer to the Redevelopment section above to determine which Core Elements apply.

Safety Improvement Projects:

Projects to improve motorized and/or non-motorized user safety that do not enhance the traffic capacity of a roadway are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention* except as specified under sub-item (a) under conditions for applying Core Element #5 *Runoff Treatment* in the Redevelopment section above. Certain safety improvement projects such as sidewalks, bike lanes, bus pullouts and other transit improvements must be evaluated on a case-by-case basis to determine whether additional Core Elements apply. A safety project that enhances the traffic carrying capacity of a roadway is not exempt from other Core Elements. Local governments shall keep records of all projects granted exemptions to the Core Elements.

Local Exceptions/Variations

Requirements:

Exceptions to the Core Elements may be granted by the Permittee prior to project approval and construction. The Permittee may grant an exception following an application for an exception with legal public notice per the Permittee's guidance and requirements for exceptions and variances. The Permittee's decision should include a written finding of fact.

The Permittee may grant an exception to the Core Elements if such application imposes a severe and unexpected economic hardship. To determine whether the application imposes a severe and unexpected economic hardship on the project applicant, the Permittee must consider and document with written findings of fact the following:

- The current (pre-project) use of the site, and
- How the application of the minimum requirement(s) restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements; and
- The possible remaining uses of the site if the exception were not granted; and
- The uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
- A comparison of the estimated amount and percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the minimum requirements; and
- The feasibility for the owner to alter the project to apply the minimum requirements.

In addition any exception must meet the following criteria:

- The exception will not increase risk to the public health and welfare, nor injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and
- The exception is the least possible exception that could be granted to comply with the intent of the Minimum Requirements.

If the Permittee chooses to allow jurisdiction-wide exceptions or variances to the requirements of the Manual, those exceptions must be approved by the Department. Permittees shall keep records of all local exceptions/variances to the Core Elements, pursuant to section S9 *Reporting and Record Keeping Requirements* of this Permit. Project-specific design deviations based on site-specific conditions generally do not require approval of the Department and are left to the discretion of the Permittee.

Core Element #1: Preparation of a Stormwater Site Plan

Requirements

All new development and redevelopment projects that meet the **regulatory threshold** and are subject to the Minimum Technical Requirements shall complete a Stormwater Site Plan (SSP) prepared in accordance with Chapter 3 of the *Stormwater Management Manual for Eastern Washington* (2004).

Core Element #2: Construction Stormwater Pollution Prevention

Local jurisdictions may choose to allow projects to comply with Core Element #2 for an individual site by documenting coverage under the Department of Ecology's *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* and fully implementing the Construction Stormwater Pollution Prevention Plan elements as required by that permit. Permittees remain responsible for site inspection and enforcement of the requirements, to ensure that construction operators follow their SWPPPs in accordance with local jurisdiction regulations. Local jurisdictions may choose to allow site operators to apply an "Erosivity Waiver" to projects disturbing less than five acres that meet the requirements at the end of this section; such projects would be waived from the requirement that the jurisdiction review site plans for construction phase stormwater pollution prevention.

Requirements

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters. Projects meeting the **regulatory threshold** and not qualifying for an Erosivity Waiver, as described at the end of this section, if allowed by the local jurisdiction, shall prepare a Stormwater Pollution Prevention Plan (SWPPP) for construction activity. The SWPPP shall be implemented beginning with initial soil disturbance and until final stabilization.

Stormwater BMPs shall be consistent with the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department.

Construction Stormwater Pollution Prevention Plan (SWPPP) Elements: The construction site operator shall include each of the twelve elements below in the narrative of the SWPPP and ensure that they are implemented unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits:

- a. Prior to beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
- b. The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access:

- a. Construction vehicle access and exit shall be limited to one route, if possible.
- b. Access points shall be stabilized with quarry spalls, crushed rock or other equivalent BMP to minimize the tracking of sediment onto public roads.
- c. Wheel wash or tire baths shall be located on site, if the stabilized construction entrance is not effective in preventing sediment from being tracked onto public roads.
- d. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area.
- e. Street washing is allowed only after sediment is removed in accordance with 2.d, above. Street wash wastewater shall be controlled by pumping back on site or otherwise be prevented from discharging into systems tributary to waters of the state.

3. Control Flow Rates:

- a. Properties and waterways downstream from development sites shall be protected from erosion due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by the local jurisdiction.
- b. Where necessary to comply with 3.a, above, stormwater retention or detention facilities shall be constructed as one of the first steps in grading. Detention facilities shall be functional prior to construction of site improvements (*e.g.*, impervious surfaces).
- c. If permanent infiltration ponds are used for flow control during construction, these facilities should be protected from siltation during the construction phase.

4. Install Sediment Controls:

- a. Stormwater runoff from disturbed areas shall pass through a sediment pond, or other appropriate sediment removal BMP, prior to leaving a construction site or prior to discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but shall meet the flow control performance standard of 3.a, above.
5. Sediment control BMPs (sediment ponds, traps, filters, etc.) shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place. BMPs intended to trap sediment on site shall be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
6. Stabilize Soils:
 - a. Exposed and unworked soils shall be stabilized by application of effective BMPs that prevent erosion.
 - b. No soils shall remain exposed and unworked for more than the time periods set forth below:
 - At sites with mean annual precipitation greater than or equal to 12 inches:
 - 10 days during the dry season (July 1 through September 30)
 - 5 days during the wet season (October 1 through June 30)
 - At sites with mean annual precipitation less than 12 inches:
 - 30 days during the dry season (July 1 through September 30)
 - 15 days during the wet season (October 1 through June 30)

The time period(s) may be adjusted by a local jurisdiction, if the jurisdiction can show that local precipitation data justify a different standard.
 - c. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.
 - d. Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways and drainage channels.
7. Protect Slopes:
 - a. Design and construct cut and fill slopes in a manner that will minimize erosion.
 - b. Off-site stormwater (run-on) or groundwater shall be diverted away from slopes and undisturbed areas with interceptor dikes, pipes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

- At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains shall handle the expected peak flow velocity from a 6-month, short duration storm for the developed condition.
 - c. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.
 - d. Check dams shall be placed at regular intervals within constructed channels that are cut down a slope.
8. Protect Drain Inlets:
- a. Storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
 - b. Inlet protection devices shall be cleaned or removed and replaced when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
9. Stabilize Channels and Outlets:
- All temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the following expected peak flows. Channels shall handle the expected peak flow velocity of the 6-month, short duration storm for the developed condition.
 - a. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.
10. Control Pollutants:
- a. 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.
 - b. Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks shall include secondary containment.
 - c. Maintenance, fueling and repair of heavy equipment and vehicles shall be conducted using spill prevention and control measures. Contaminated surfaces shall be cleaned immediately following any spill incident.
 - d. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer with local sewer district approval.

- e. Application of fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' label requirements for application rates and procedures shall be followed.
- f. BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. These sources include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. The Permittee shall require construction site operators to adjust the pH of stormwater if necessary to prevent violations of water quality standards.
- g. The Permittee shall require construction site operators obtain written approval from the Department prior to using chemical treatment other than CO₂ or dry ice to adjust pH.

11. Control De-Watering:

- a. Foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond.
- b. Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to, or directly into surface waters of the state, as specified above in #8 *Stabilize Channels and Outlets*, provided the de-watering flow does not cause erosion or flooding of receiving waters. Clean de-watering water should not be routed through stormwater sediment ponds.
- c. Other de-watering disposal options may include: (i) infiltration; (ii) transport offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters; (iii) On-site chemical treatment or other suitable treatment technologies approved by the local jurisdiction; (iv) sanitary sewer discharge with local sewer district approval, if there is no other option; or (v) use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized de-watering.
- d. Highly turbid or contaminated dewatering water shall be handled separately from stormwater.

12. Maintain BMPs:

- a. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function in accordance with BMP specifications.
- b. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Appendix 1- Minimum Technical Requirements

13. Manage the Project:

- a. Development projects shall be phased to the maximum degree practicable and shall take into account seasonal work limitations.
- b. The Local Jurisdiction must require construction site operators to maintain, and repair as needed, all sediment and erosion control BMPs to assure continued performance of their intended function.
- c. The Local Jurisdiction must require construction site operators to periodically inspect their sites. Site inspections shall be conducted by a Certified Erosion and Sediment Control Lead who shall be identified in the SWPPP and shall be present on-site or on-call at all times.
- d. The Local Jurisdiction must require construction site operators to maintain, update and implement their SWPPP. Local Jurisdictions shall require construction site operators to modify their SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

Erosivity Waiver

The local jurisdiction may allow construction site operators to qualify for a waiver from the requirement to submit a SWPPP for local jurisdiction review if the following conditions are met:

1. The site will result in the disturbance of less than 5 acres; and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater; and
 - a. The project's rainfall erosivity factor ("R" Factor) is less than 5 during the period of construction activity, as calculated using the Texas A&M University online rainfall erosivity calculator at: . The period of construction activity begins at initial earth disturbance and ends with final stabilization; and
 - b. The entire period of construction activity falls within the following timeframe(s):
 - June 15 through October 15 for sites with mean annual precipitation of 12 inches or more; or
 - No additional timeframe restrictions apply for sites with mean annual precipitation of less than 12 inches; and
2. The site or facility has not been declared a significant contributor of pollutants; and
3. There are no planned construction activities at the site that will result in non-stormwater discharges; and
 - The waiver is allowed by the local jurisdiction; and
4. The construction site operator notifies the local jurisdiction of the intention to apply this waiver at least one week prior to commencing land disturbing activities. The notification

must include a summary of the project information used in calculating the project's rainfall erosivity factor (see #2 above) and a certified statement that:

- The operator will comply with applicable local stormwater requirements; and
- The operator will implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

Core Element #3: Source Control of Pollution

Requirements

All new development and redevelopment projects meeting the **regulatory threshold** shall apply all known, available and reasonable source control BMPs. Operational and structural source control BMPs shall be selected, designed, and maintained according to Chapter 8 of the *Stormwater Management Manual for Eastern Washington* (2004) or another technical stormwater manual approved by the Department.

Core Element #4: Preservation of Natural Drainage Systems

Requirements

All new development and redevelopment projects meeting the **regulatory threshold** must preserve natural drainage systems to the extent possible at the site.

The manner by which runoff is discharged from the project site must not cause a significant adverse impact to downstream receiving waters and down-gradient properties and should be addressed as part of the off-site analysis described in Appendix 3A of the *Stormwater Management Manual for Eastern Washington* (2004).

All outfalls must address energy dissipation as necessary. A project proponent who believes that energy dissipation should not be required for a new outfall must provide justification in the project's stormwater site plan or drainage study report.

Core Element #5: Runoff Treatment

Requirements

Runoff treatment is required for projects meeting the **regulatory threshold** when the technical thresholds/requirements below for Basic Treatment, Metals Treatment, Oil Treatment, or Phosphorus Treatment are met. Treatment facilities shall be selected, designed, sized, constructed, operated and maintained in accordance with this Core Element and the guidance in Chapters 4 and 5 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department.

All Permittees must require runoff treatment facilities to be sized for the applicable design storm(s) described in this section: each jurisdiction must identify a preferred method or methods for sizing treatment facilities or provide alternative guidance. All runoff treatment facilities must be sized for the entire flow that is directed to them.

When Core Element #5 *Runoff Treatment* is required, Core Element #7 *Operation and Maintenance* also is required.

Basic Treatment

Basic runoff treatment (to remove solids) is required for all **new development** projects creating 5,000 square feet or more of **pollutant-generating impervious surface** (PGIS) areas. Treatment is required for discharges to all surface waters of the state, including perennial and seasonal streams, lakes and wetlands where the PGIS threshold is met. Runoff treatment is also required for discharges of stormwater to ground where the vadose zone does not provide adequate treatment capacity (see Chapter 5.6 the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department).

Basic runoff treatment is required for **redevelopment** projects creating 5,000 square feet or more of **PGIS** where:

- The project takes place at an industrial site as defined by EPA (40 CFR 122.26(b)(14)) with outdoor handling, processing, storage, or transfer of solid raw materials or finished products, or
- The project takes place at a commercial site with outdoor storage or transfer of solid raw materials or treated wood products, or
- A need for additional stormwater control measures has been identified through a TMDL or other water cleanup plan or other planning process, or
- The project takes place at a **high-use site**, or
- The project takes place in an area subject to vehicular traffic under any of the following conditions:
 - The project improves a soft shoulder to a curb and gutter roadway with projected **average daily traffic** (ADT) of 7,500 or more vehicles.
 - The project replaces and/or improves the surface of a parking area where the projected number of **trip ends** exceeds 40 per 1,000 square feet of building area or 100 total trip ends per day.
 - The project replaces and/or improves the surface of an **urban road** where the projected ADT is 7,500 or more vehicles per day.
 - The project replaces and/or improves the surface of a **freeway** or **rural road** where the projected ADT is 15,000 or more vehicles per day.
 - The project affects the area within 500 feet of a controlled intersection on a limited access control highway with projected ADT of 7,500 or more vehicles per day. Only this area must be treated.

Exceptions: **Non-pollutant generating impervious surface** (NPGIS) areas are exempt from basic treatment requirements unless the runoff from these areas is not separated from the runoff

generated from PGIS areas. All runoff treatment facilities must be sized for the entire flow that is directed to them.

Projects that meet the requirements for dispersal and infiltration (see Chapter 6 of the *Stormwater Management Manual for Eastern Washington* (2004), particularly BMP T5.30) and do not meet the thresholds for requiring oil treatment are exempt from basic treatment requirements. Discharges to surface water from projects with a total PGIS area <5,000 square feet are exempt from basic treatment requirements unless those areas are subject to the storage or handling of hazardous substances, materials or wastes as defined in 49 CFR 171.8, RCW 70.105.010, and/or RCW 70.136.020.

Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Basic Treatment Requirements.

Certain exemptions may exist for Category 4 wetlands (see the section “Use of Existing Wetlands to Provide Runoff Treatment” at the end of this Core Element).

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

Metals Treatment

Metals treatment is required in addition to basic treatment for **new development projects** with **moderate-use sites**, **high-use sites**, and sites that meet any of the following definitions:

- Industrial sites as defined by EPA (40 CFR 122.26(b)(14)) with benchmark monitoring requirements for metals; or industrial sites subject to handling, storage, production, or disposal of metallic products or other materials, particularly those containing arsenic, cadmium, chromium, copper, lead, mercury, nickel or zinc.
- On-street parking areas of municipal streets in commercial and industrial areas.
- Highway rest areas.
- Runoff from metal roofs not coated with an inert, non-leachable material.

Metals treatment is required in addition to basic treatment for **redevelopment** projects with **high-use sites** or **high ADT roadways and parking areas** and for projects where:

- An additional need for stormwater control measures to remove metals has been identified through a TMDL or other water cleanup plan, or
- The project takes place at an industrial site that is subject to benchmark monitoring for metals.

Exceptions: Unless a specific water quality problem has been identified, the following discharges are exempt from metals treatment requirements:

- Discharges to non-fish-bearing streams.

- Direct discharges to the main channels of the following rivers and direct discharges to the following lakes: Banks Lake, Lake Chelan, Columbia River, Grande Ronde River, Kettle River, Klickitat River, Methow River, Moses Lake, Potholes Reservoir, Naches River, Okanogan River, Pend Oreille River, Similkameen River, Snake River, Wenatchee River, and Yakima River.
- Subsurface discharges, unless identified as hydraulically connected to surface waters of the State.
- Restricted residential and employee-only parking areas, unless subject to through traffic.

Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Metals Treatment Requirements.

Certain exemptions may also apply to Category 4 wetlands (see “Use of Existing Wetlands to Provide Runoff Treatment” at the end of this section).

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

Oil Treatment

Oil treatment is required for all **high-use sites** and **high ADT roadways and parking areas at new development and redevelopment** projects. Some sites will require a spill control type of oil control facility (see Chapter 8 of the Stormwater Management Manual for Eastern Washington) for source control separately from or in addition to this treatment requirement. Oil treatment/control is required in addition to any other runoff treatment required per this Core Element.

Separator technologies for oil treatment are required only for the following high-use sites:

- High-density intersections with expected ADT of 25,000 or more vehicles on main roadway and 15,000 or more vehicles on any intersecting roadway,
- Non-employee parking areas of commercial or industrial sites with trip end counts greater than 100 vehicles per 1,000 SF gross building area,
- Areas of commercial and industrial sites subject to use, storage, or maintenance of a fleet of 25 or more vehicles that are over ten tons gross weight,
- Fueling stations and facilities, and
- Sites subject to petroleum transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil.

For the following sites, a catch basin preceded by passive oil control vault, such as a chamber with a turned-down elbow, may be applied in lieu of an approved separator technology as long as

they are inspected/maintained/cleaned at least once per year or more frequently as needs are identified:

- A customer or visitor parking lot with an expected trip end count equal to or greater than 300 vehicles (best professional judgment should be used in comparing this criterion with the preceding criterion); and
- Commercial on-street parking areas on streets with an expected total ADT count equal to or greater than 7,500; or

At all other high-use sites and high ADT traffic areas subject to the oil treatment requirement, sorptive technologies, not separators, are required. Basic treatment methods with sorptive properties, such as swales or filters, may be selected to fulfill this requirement; or catch basin inserts may be used at these sites. A catch basin preceded by passive oil control vault, such as a chamber with a turned-down elbow, may be applied at sites with ADT greater than 30,000 as long as they are inspected/maintained/cleaned at least once per year or more frequently as needs are identified.

High-use roadway intersections shall treat lanes where vehicles accumulate during the signal cycle, including left and right turn lanes and through lanes, from the beginning of the left turn pocket. If no left turn pocket exists, the treatable area shall begin at a distance equal to three car lengths from the stop line. If runoff from the intersection drains to more than two collection areas that do not combine within the intersection, treatment may be limited to any two of the collection areas where the cars stop.

High-use sites and high ADT roadways and parking areas must treat runoff from the high-use portion of the site using oil control treatment options in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* prior to discharge or infiltration. For high-use sites located within a larger project area, only the impervious area associated with the high-use site is subject to oil control treatment, but the flow from that area must be separated; otherwise the treatment controls must be sized for the entire area.

Exceptions: Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Oil Treatment Requirements.

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

Phosphorus Treatment

Requirements: Phosphorus treatment is required only where federal, state, or local government has determined that a water body is sensitive to phosphorus and that a reduction in phosphorus from new development and redevelopment is necessary to achieve the water quality standard to protect its beneficial uses. Where it is deemed necessary, a strategy shall be adopted to achieve the reduction in phosphorus.

Treatment Facility Selection

Treatment facilities must be selected in accordance with the guidance in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department, to meet the treatment requirements identified for the project's proposed land use and site conditions.

Treatment Facility Sizing

Each treatment BMP is sized based on a water quality design volume, or a water quality design flow rate. Permittees shall adopt criteria to provide for consistent sizing of treatment facilities. Computational methods for predicting runoff volumes and flow rates for a proposed development condition are included in Chapter 4 of the *Stormwater Management Manual for Eastern Washington* (2004). Specific design criteria for treatment facilities may be taken from Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004) or another technical stormwater manual approved by the Department. Specifically, public road projects may be designed using BMPs in the current version of the Washington State Department of Transportation *Highway Runoff Manual* approved by the Department.

Water quality design volume: Each Permittee shall specify which of the following methods will be used to determine treatment volumes in their jurisdiction. Different methods may be specified for different types of projects. Volume-based treatment BMPs are sized the same whether located upstream or downstream from detention facilities.

- *Runoff Volume Method 1:* The volume of runoff predicted for the proposed development condition from the regional storm with a 6-month return frequency. An alternative to this method is the modified Type IA storm described in Chapter 4.2 of the *Stormwater Management Manual for Eastern Washington* (2004); this alternative method is intended for use on small projects where the designer's software does not accept storms longer than 24 hours.
- *Runoff Volume Method 2:* The volume of runoff predicted for the proposed development condition from the SCS Type IA 24-hour storm with a 6-month return frequency.
- *Runoff Volume Method 3:* In Regions 2 and 3, volume-based facilities may be sized for 0.5 inch predicted runoff produced for the proposed development condition from all impervious surface areas that contribute flow to the treatment facility. (This method may be modified for design of BMP T5.30 Bio-infiltration swale in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).)
- *Runoff Volume Method 4:* The volume of runoff predicted for the proposed development condition from the SCS Type II storm with a 6-month return frequency.
- *Runoff Volume Method 5:* Another sizing approach and criteria based on peer-reviewed methods and supported by local data that meet the objective of treating at least 90% of the annual volume of runoff from the site. Snowmelt should be considered in determining the water quality design volume if this method is selected.

Appendix 1- Minimum Technical Requirements

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Water quality design flow rate: Flow-rate-based treatment BMPs are sized differently depending on whether they are located upstream or downstream from detention facilities, if detention is required. For runoff treatment facilities sited downstream of detention facilities, the design flow rate is the full 2-year release rate of the detention facility. For runoff treatment facilities preceding detention facilities or when detention facilities are not required, each Permittee shall specify which of the following methods will be used to determine flow rates in their jurisdiction. Different methods may be specified for different types of projects. For large facilities receiving inflow from multiple sources, the flow rate generated by the regional or Type IA storm should also be checked.

- *Flow Rate Method 1:* The runoff flow rate predicted for the proposed development condition from the short-duration storm with a 6-month return frequency. Time intervals for some facilities are specified in the BMP design requirements in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).
- *Flow Rate Method 2:* The runoff flow rate predicted for the proposed development condition from the SCS Type II 24-hour storm with a 6-month return frequency. Time intervals for some facilities are specified in the BMP design requirements in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).
- *Flow Rate Method 3:* The runoff flow rate for the proposed development condition calculated by the Rational Method using the 2-year Mean Recurrence Interval (see Chapter 4.7 of the *Stormwater Management Manual for Eastern Washington* (2004)). This method may only be used to design facilities based on instantaneous peak flow rates.

Bypass Requirements

A bypass must be provided for all treatment BMPs unless the facility is able to convey the 25-year short-duration storm without damaging the BMP or dislodging pollutants from within it. Extreme runoff events may produce high flow velocities through BMPs that can damage and or dislodge pollutants from within the facility. The designer must: check the maximum allowable velocity (typically less than 2 ft/s) or shear stress specified for the BMP; and implement a flow bypass as necessary to prevent exceeding these velocities. Bypass is not recommended for wet ponds, constructed wetlands, and similar volume-based treatment facilities; inlet structures for these facilities should be designed to dampen velocities; the pond dimensions will further dissipate the energy.

Use of Existing Wetlands to Provide Runoff Treatment

Stormwater treatment facilities are not allowed within a wetland or its natural vegetated buffer except for:

- Necessary conveyance systems approved by the local government; or
- As allowed in a wetland mitigation plan; or
- When the requirements below are met.

A wetland can be considered for use in stormwater treatment if:

- The wetland meets the criteria for “Hydrologic Modification of a Wetland” in Core Element #6 Flow Control; and either
- It is a Category 4 wetland according to the *Eastern Washington Wetland Rating System*; or
- It is a Category 3 wetland according to the *Eastern Washington Wetland Rating System* and the wetland has been previously disturbed by human activity, as evidenced by agriculture, fill areas, ditches *or* the wetland is dominated by introduced or invasive weedy plant species as identified in the rating analysis.

Basic treatment is required prior to discharge to Category 3 wetlands; a Category 3 wetland that meets the above requirements may be used to meet metals treatment requirements. Oil control is required for a discharge to wetlands if the Technical Thresholds/Requirements are met.

Mitigation shall be required for the impact of using a wetland as a stormwater treatment facility. Appropriate measures include enhancement, expansion and/or preservation of a buffer around the wetland.

Core Element #6: Flow Control

Requirements

New development projects that meet the **regulatory threshold** and result in 10,000 square feet or more of new impervious surfaces shall construct stormwater flow control facilities for any discharge of stormwater directly, or through a conveyance system, into surface water.

Redevelopment projects are not required to construct stormwater flow control facilities unless required under a basin plan or other federal, state or local requirement.

The stormwater flow control facility shall be designed to protect stream morphology and associated instream habitat from adverse impacts due to increased peak flows and flow durations following development. Flow control facilities shall be selected, designed, constructed, operated and maintained according to criteria established by the local jurisdiction.

In order to prevent localized erosion, energy dissipation at the point of discharge is required for all projects unless site-specific conditions warrant an exception.

When Core Element #6 *Flow Control* is required, Core Element #7 *Operation and Maintenance* also is required.

Exemptions

Direct discharges to the following surface waters are exempt from flow control requirements to protect stream morphology:

1. Any river or stream that is:
 - Fifth order or greater as determined from a 1:24,000 scale map; or
 - Fourth order or greater as determined from a 1:100,000 or larger scale map.

The maps should be standard USGS maps or GIS data sets derived from USGS base maps.

2. Any lake or reservoir with a contributing watershed area greater than 100 square miles.
3. Reservoirs with outlet controls that are operated for varying discharges to the downstream reaches as for hydropower, flood control, irrigation, or drinking water supplies. Uncontrolled, flow-through impoundments are not exempt.
4. Streams that flow only during runoff-producing events. The runoff carried by the stream following the 2-year, Type IA rainfall event must not discharge via surface flow to a non-exempt surface water. To be exempt, the stream may carry runoff during an average annual snowmelt event but must not have a period of baseflow during a year of normal precipitation.

Hydrologic Modification of a Wetland

A wetland receiving stormwater from a new development or redevelopment project can be considered for **hydrologic modification** if it is a Category 3 or Category 4 wetland according to the *Eastern Washington Wetland Rating System* and:

- There is good evidence that the natural hydrologic regime of the wetland can be restored by augmenting its water supply with excess stormwater runoff; or the wetland is under imminent threat exclusive of stormwater management and could receive greater protection if acquired for a stormwater management project rather than left in existing ownership; and:
- The runoff is from the same natural drainage basin; the wetland lies in the natural routing of the runoff; and the site plan allows runoff discharge at the natural location. Exceptions may be made for regional facilities planned by the local jurisdiction, but the wetland should receive water from sites in the same watershed.

Hydrologic modification shall not be allowed if the wetland is classified as Category 1 or Category 2 according to the *Eastern Washington Wetland Rating System* unless the project proponent demonstrates that preferred methods of excess stormwater disposal (*e.g.*, infiltration) are not possible at the site and that other options (*e.g.*, evaporation) would result in more damage to the wetland by limiting inflow.

Mitigation shall be required for the impact of hydrologic modification to a wetland. Appropriate measures include expansion, enhancement and/or preservation of a buffer around the wetland.

Core Element #7: Operation and Maintenance

Requirements

Where structural BMPs are required, property owners shall operate and maintain the facilities in accordance with an Operation and Maintenance (O&M) plan that is prepared in accordance with the provisions in Chapters 5 and 6 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department. The O&M plan shall address all proposed stormwater facilities and BMPs, and identify the party (or

parties) responsible for maintenance and operation; the O&M plan must also address the long-term funding mechanism that will support proper O&M. At private facilities, a copy of the plan shall be retained onsite or within reasonable access to the site, and shall be transferred with the property to the new owner. For public facilities, a copy of the plan shall be retained in the appropriate department. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection.

Cities or Counties may develop generic O&M plans, including checklists of actions and procedures for the operators, for BMPs that are commonly used in public projects; commercial and residential property developers may also develop generic O&M plans, including checklists of actions and procedures for the operators, for BMPs that are commonly used in their projects.

Appendix C.



Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities

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Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities

Prepared by:

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How to Find the Stormwater Manual on the Internet

The Stormwater Management Manual for Western Washington is also available on Ecology’s Stormwater Homepage at: <http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>

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The advisory committee consisted of the following members:

Name	Affiliation
Ron Devitt	Ecology Northwest Regional Office
Bob Dick	Northwest Forestry Association, Olympia
Nathan Graves	Kennedy Jenks Consultants for the Association of WA Business
Keith Johnson	Ecology Headquarters
Ken Johnson	Weyerhaeuser Company
Charles Keller	Boeing Co.
Heather Kibbey	Pierce County
Ray Latham	Ecology Central Regional Office
Grant Nelson	Association of WA Business
Marilou Pivrotto	Ecology Southwest Regional Office
Gary Smith	Independent Business Association
Paul Turner	Ecology Eastern Regional Office

A. Purpose of this Guidance

The purpose of this guidance is to assist operating managers and owners of industrial facilities in preparing a Stormwater Pollution Prevention Plan (SWPPP) that complies with Ecology's 2002 Industrial Stormwater General Permit (Permit). It contains the following:

- A summary of the SWPPP requirements as specified in Permit Condition S9
- The required content of a SWPPP
- Descriptions of required BMPs for industrial activities
- A summary of the monitoring guidance and a list of benchmark values
- An example SWPPP
- Blank forms for recording monitoring information and BMP recommendations.

This guidance has no independent regulatory authority and does not establish new regulatory requirements or standards. Using this guidance document does not relieve the responsible company official from understanding and complying with all permit requirements (Reference 1). Other background documents recommended as routine ongoing references are: "*How To Do Stormwater Sampling*" (Reference 2) and the western and eastern Washington stormwater manuals (References 3 and 4). www.ecy.wa.gov/programs/wq/stormwater

B. Objectives of the SWPPP:

1. To implement and maintain best management practices (BMPs) that identify, reduce, eliminate, and/or prevent the discharge of stormwater pollutants.
2. To prevent violations of surface water quality, groundwater quality, and sediment management standards.
3. To prevent adverse impacts to receiving water by controlling peak rates and volumes of stormwater runoff.
4. To eliminate the discharges of unpermitted process wastewater, domestic wastewater, noncontact cooling water, and other illicit discharges to stormwater drainage systems.

C. SWPPP Requirements (Permit Condition S9)

General Requirements

New facilities: develop a SWPPP and implement it before beginning operation.

Existing facilities: not normally required to revise their SWPPP unless necessary to accommodate significant process changes at their facility or other action that requires modification of permit coverage or changes in design, construction, operation, or maintenance of any BMP which cause(s) the SWPPP to be less effective in controlling pollutants, or, as required

to meet permit conditions, including meeting water quality standards. Ecology may require implementation of additional BMPs, including treatment BMPs, if an applicable benchmark value specified in the 2002 permit is exceeded.

SWPPP Availability: Retain the SWPPP on site or within reasonable access to the site. You must make it immediately available to Ecology personnel on site or submit a copy of the SWPPP within two (2) weeks of receiving a request or, for discharges to a storm sewer system, to the municipal operator of the storm sewer system. Ecology will maintain a copy of the SWPPP for each industrial facility and the public may view a copy of the permittee's SWPPP at the appropriate regional office. Upon receiving a request from the public for a copy of the SWPPP the permittee:

- Shall provide a copy of the SWPPP, as requested, within a reasonable time frame,
 - May contact the requester to determine if the entire SWPPP is needed or if specific portions satisfy the requestor's needs,
 - May notify the requestor of the location at or near the permitted facility and times within normal business hours that the SWPPP can be viewed;and
 - May notify Ecology and the requestor of claims to confidential business information and/or security concerns with releasing the SWPPP to the public. The permittee shall identify the general sections of concern. Ecology shall then coordinate with the permittee and requestor to provide such information as needed to satisfy the requestor's needs. Disputes pertaining to released SWPPP material shall be subject to Special Condition S13. of the Permit, or such other applicable course of appeal as pertains to the information under consideration.

Use of New Stormwater Manuals

New and existing facilities may select BMPs from the most recent published edition of an applicable stormwater management manual such as the 2001 *Stormwater Management Manual for Western Washington* (3) and the *Stormwater Management Manual for Eastern Washington* (4) when published, or equivalent manual.

D. Preparing and Updating the SWPPP (See Flowchart in Section E)

Responsible Signatory Official

A responsible company official or duly authorized representative must sign the SWPPP, its significant updates, monitoring results, and all certifications required by the permit. The responsible company official can be a vice president or higher, a general partner, or an owner of the company or facility. To delegate to a duly authorized representative, the responsible company official must submit to Ecology the name of the individual or a position (plant manager, superintendent, or equivalent) as the duly authorized representative having overall responsibility for environmental matters. The company official responsible for preparing,

updating, and implementing the SWPPP and for compliance with the permit should be thoroughly familiar with the permit requirements.

The SWPPP will include a BMP that identifies specific individuals (a pollution prevention team) by name or by title within the plant organization who are responsible for developing the SWPPP and assisting the plant manager in its implementation, maintenance, and modification. The activities and responsibilities of the pollution prevention team should address all aspects of the facility's SWPPP.

Other environmental management plans/permits for your facility should also be reviewed to determine their impact on stormwater pollutants. Examples include an NPDES wastewater discharge permit; and any of the following plans: Federal Spill Control and Countermeasures, Hazardous Waste Reduction, Dangerous Waste and Toxics Reduction, and Occupational Safety and Health Plans. (Appendix D)

E. SWPPP Contents

This section provides guidance to help the permittee comply with Special Condition S9.B. of the Permit.

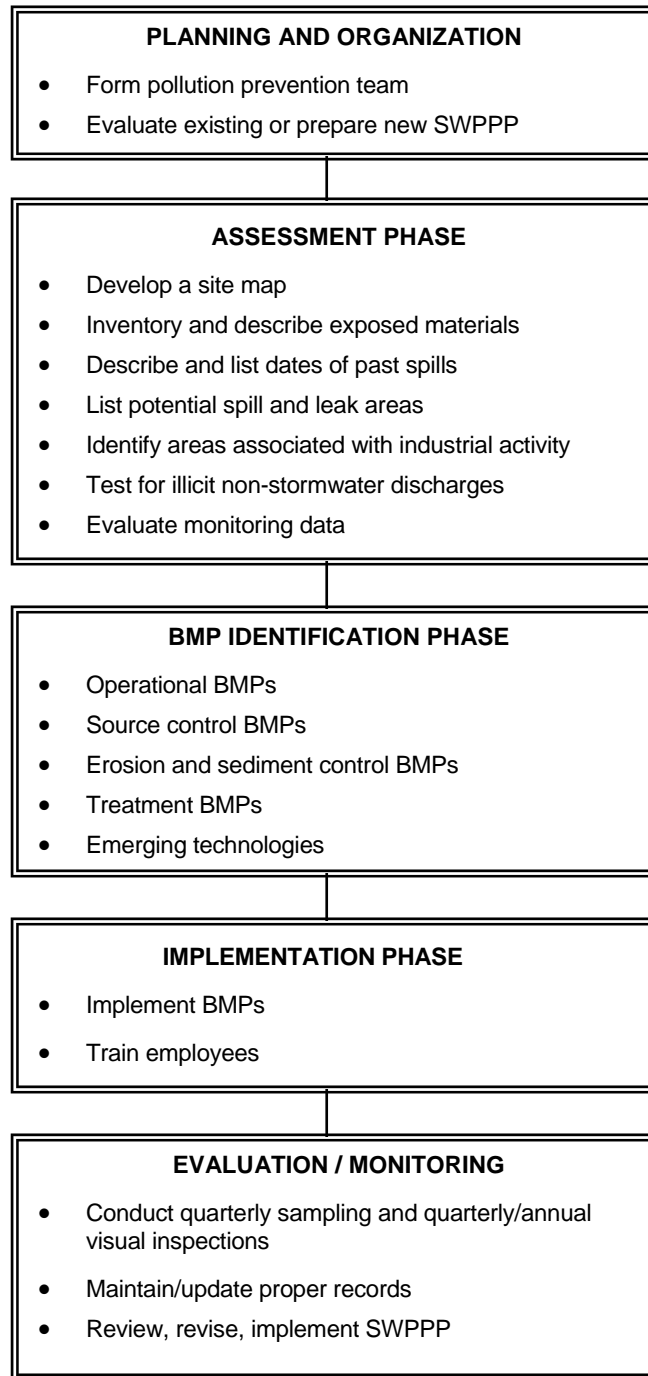
Note: The worksheets in Appendix C may be used to record the SWPPP information identified in this section of the guidance.

1. Facility assessment

Description of the industrial operation

Describe the industrial (manufacturing, transportation, processing, etc.) activities conducted at the site and provide a general layout. Include buildings, storage of raw materials, and the flow of goods and materials through the facility. A process flow diagram would be helpful. Include any variations that could impact stormwater including seasonal and climate-related changes in production, particularly if the changes affect contact with stormwater.

SWPPP PREPARATION FLOWCHART



Site Map

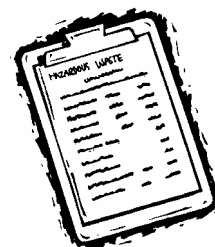
Draw a site map to an identified scale or with relative distances between significant structures and drainage systems that includes the following:

- Identifiers (names) of significant features.
- Stormwater drainage and discharge structures.
- An outline of the stormwater drainage areas for each stormwater discharge point (including discharges to ground water).
- Buildings and paved areas.
- Areas of pollutant contact (actual or potential).
- Surface water locations (including wetlands and drainage ditches).
- Areas of existing and potential soil erosion in a significant amount.
- Vehicle (trucks, vans, forklifts, etc.) service areas.

Materials Inventory

The applicable worksheets in Appendix C may be used to list materials with a narrative that describes materials handling practices including the following:

- List of significant materials handled, treated, stored, or disposed of that can be exposed to stormwater or snowmelt and result in stormwater pollution of a significant amount. Include the location of each material that is exposed to stormwater and a measure of its quantity, by volume or weight. Also include the significant materials handled during past activities.
- Materials handled indoors that could be tracked outdoors by equipment or vehicles.
- Explanations of how significant materials are handled, treated, stored, and disposed of to prevent pollution of stormwater and how each material has or can contaminate stormwater, including past activities.
- A list of the pollutants that may be present in your stormwater discharges.
- Method(s) and location(s) of on-site storage and disposal and a list of significant past spills and leaks of toxic or hazardous pollutants.



Note: The category of significant materials includes, but is not limited to, raw materials; fuels; materials such as solvents, detergents, plastic pellets; finished materials such as metallic products, raw materials used in food processing or production, hazardous substances designated under Section 101 (14) CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizer; pesticide; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges.

2. Identifying Areas Associated with Industrial Activity

List pollutant generating activities and areas and describe their potential to be a pollutant source in a significant amount. Pollutant generating activities and areas can include:

- Loading and unloading of dry (bulk) or liquid materials.
- Dust or particulate generating processes.
- On-site solid waste or residual treatment, storage, or disposal; material handling sites; refuse sites; and sites used for the application or disposal of process wastewaters.
- Vehicle and equipment maintenance, fueling, and washing/cleaning.
- Outdoor storage area(s) of materials or products, stockpile area(s), tank farms, etc.
- Petroleum transfer area.
- Manufacturing building roofs and other processing areas where particles are emitted from air vents and are likely to mix with stormwater.
- Roofs or other surfaces composed of materials that may be mobilized (eluted) by stormwater, (e.g., galvanized or copper roofs).
- Outdoor manufacturing or processing area.
- Plant yards, immediate access roads and rail lines, manufacturing buildings, and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

Also check storage tanks, pipes, or pumping areas and note any leaks, spills, or staining. Is the loading and unloading of materials exposed to stormwater? Do the dumpsters have a lid, or are they stored in a covered area? Verify whether the dumpsters or other disposal units have “unsealed” bottoms. Also pay attention to material handling equipment, including everything from vehicles to pallets, where raw and waste materials from industrial activities are exposed to stormwater.

Note: Areas separate from the industrial activity are excluded from permit coverage. Examples of excluded areas are office buildings and parking lots used solely for employee parking, if the drainage does not mix with stormwater runoff from areas with industrial activity.

3. Identify Past Spills and Leaks

Update in the SWPPP the significant spills and leaks of oils and toxic or hazardous pollutants that have occurred during the three years prior to the effective date of the Permit. Include the information specified in Worksheet #4. This list will provide additional information on the potential sources of stormwater contamination. One way of identifying whether small spills and leaks are taking place is by noting areas with “residues” of a material that may pollute the stormwater.



4. Include a Monitoring (sampling and visual inspection) Plan

Identify who is responsible for monitoring and thoroughly describe monitoring procedures to meet permit requirements including sampling points, frequencies, methods, parameters, completing the discharge monitoring report, etc. Follow the sampling guidance in reference 2 carefully and review the summary of the Monitoring Guidance in Section G. At a minimum the monitoring plan must include:

- Who conducts the sampling and visual inspections
- Descriptions of all points of discharge to storm drains or to surface water and where samples will be taken and why sampling points were or were not selected at all multiple discharges
- An explanation how volumes/rates of each discharge will be/are estimated considering storm duration, intensity and quantity; tributary area and slope; and permeability of pervious and impervious areas.
- A record of the differences in exposure to pollutants, e.g., periodic vs. continuous; and pollutant concentrations likely in the discharge(s).
- A list of the pollutant parameters (constituents) for analysis
- Procedures for sample collection and handling, sending samples to the lab, and submitting the results to Ecology
- A check list for visual monitoring (See Worksheet #11)

5. Illicit Non-stormwater Discharges (See BMP #3 in Appendix A)

Include measures to identify and eliminate unpermitted discharges of process and domestic wastewater, cooling water and other wastewaters to storm drains or to surface waters. Process wastewater means any water which, during manufacturing or processing comes in direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product, including stormwater that commingles with process water. Wastewaters may need a separate NPDES discharge permit. As required in Section S4. of the Permit, the SWPPP must include a certification by the responsible official from your facility that a test has been conducted for the presence of non-stormwater discharges. Conduct the test during the dry season (July, August, and September) at all stormwater discharge locations. You must keep a record if you are unable to test or certify for the presence of non-stormwater discharges because you do not have access to a particular outfall, manhole, or other point of access to a final stormwater discharge point. Complete a “Failure to Certify” form (Worksheet #7) and include with your SWPPP.

As a result of the 2002 permit appeal, Ecology anticipates covering certain non-stormwater discharges including discharges from fire fighting activities; fire protection system flushing, testing, and maintenance; discharges of potable water, including water line flushing provided that water line flushing water is dechlorinated; uncontaminated air conditioning or compressor condensate; irrigation drainage; uncontaminated ground water or spring water; and discharges associated with dewatering of foundations, footing drains, or utility vaults where flows are not

contaminated with process materials such as solvents. The following information on these conditionally approved non-stormwater discharges, except for discharges from fire fighting activities and of uncontaminated ground or spring water, must be included in the SWPPP:

- Identification and location of the discharge to the stormwater collection system of each non-stormwater discharge.
- Characterization of the non-stormwater source, including estimated flows or flow volume, and likely pollutants, which may be present.
- Evaluation of non-stormwater discharges for any chemical contamination, including cooling tower mist.
- Evaluation, design, and implementation of available and reasonable best management practices to reduce or eliminate pollutants and/or flow volumes in non-stormwater discharges.

6. Schedule for Implementing Additional or Enhanced BMPs

Include a schedule in the SWPPP for implementing additional or enhanced BMPs, which are either ordered by Ecology or are necessary due to facility changes or a self-inspection, within 30 days of self-determination or an Ecology order. Modification of BMPs to reduce pollutants may also be necessary for a change in design, construction, or operation and maintenance (O&M) of any BMP, and/or if a BMP is observed to be insufficiently effective during a visual inspection. Non-capital BMPs must be completed within two (2) weeks and capital BMPs (see Permit – Appendix 2 for definition) within six (6) months after completing the implementation plan for addition or modification of BMPs.

Describe any capital improvements (e.g., detention pond, oil removal, filter, cover (roof) for exposed materials, paving, construction of outside storage buildings, overhangs, containment areas, covered fuel island with Portland cement pavement, etc.) Provide the date (s) of completion of the capital and non-capital improvements.

7. BMPs for Compliance with the 2002 Industrial Stormwater General Permit

The Permit requires the implementation of best management practices to comply with state water quality standards; all known, available, and reasonable methods of prevention, control, and treatment (AKART); and federal technology-based treatment requirements. These standards and technology-based requirements have been adopted as rules. Permittees must demonstrate that their BMPs meet the standards and requirements described in the Washington State rules. This may be achieved in one of two ways:

Option 1 – The Demonstration Approach. The technical basis for the selection of all stormwater BMPs must be documented in the SWPPP including how stormwater BMPs were selected; the pollutant removal performance expected from the BMP being selected; the technical bases which

support the performance claims for the BMPs being selected; and an assessment of how the selected BMPs will achieve compliance with state water quality standards, the state AKART requirements, and the federal technology-based treatment requirements under 40 CFR part 125.3. Ecology expects the demonstration documentation to be based on good science and sound engineering judgment. An example of an acceptable technology assessment protocol is the protocol for emerging stormwater treatment technologies (Technology Assessment Protocol-Ecology (TAPE)) which can be downloaded at www.ecy.wa.gov/programs/wq/stormwater/newtech/

Option 2 – The Presumptive Approach. Permittees who choose to follow the stormwater management practices contained in approved stormwater technical manuals, including the proper selection, implementation, and maintenance of appropriate BMPs, are presumed to have satisfied the demonstration requirement and do not need to include within the SWPPP the technical bases, which support the performance claims for the BMPs being used. Unless there is site-specific information to indicate otherwise, permittees who choose the presumptive approach are presumed to be in compliance with standards as set forth in Permit Special Condition S7.

Other approved stormwater technical manuals include:

- *Stormwater Management Manual for Western Washington*, August 2001, for sites west of the crest of the Cascade Mountains;
- *Stormwater Management Manual for Eastern Washington*, (completion expected by early 2004) for sites east of the crest of the Cascade Mountains.
- *Industrial Stormwater General Permit Implementation Manual for Log Yards*, (completion expected by January 2004)
- *Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities* – DOE-WQ #94-146, 1994. Updating this manual is planned during 2004.

Operational BMPs

To comply with the permit, the categories of operational BMPs listed in this section are a minimum set of BMPs that must be included in the SWPPP. Source-specific operational BMPs are also specified in Appendix A.

- **Formation of a Pollution Prevention Team.** The responsible company official must organize a pollution prevention team and assign responsibilities that comply with the Permit. The responsibilities include:
 - Assigning one or more individuals by name and title to be responsible for developing the SWPPP and assisting the plant manager in its implementation, maintenance, and modification.
 - Holding regular meetings to review the overall operation of the BMPs.
 - Establishing responsibilities for sampling, inspections, operation and maintenance, and availability for emergency situations.

- Arranging the training of all team members in the operation, maintenance, and inspections of BMPs.
- **Good Housekeeping.** Good housekeeping is an ongoing approach to improve and maintain a clean and orderly work environment and includes the following BMPs:
 - Promptly contain and clean up solid and liquid pollutant leaks and spills including oils, solvents, fuels, and dust from manufacturing operations on any soil, vegetation, or paved area exposed to stormwater.
 - Sweep paved material handling and storage areas regularly as needed to collect and dispose of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch, or receiving water unless necessary for dust control purposes to meet air quality regulations and unless the pollutants are conveyed to a treatment system approved by the local jurisdiction. Contact Ecology's regional office for a wastewater discharge permit, if required.
 - Clean oils, debris, sludge, etc. from all BMP systems regularly, including catch basins, sedimentation basins, oil/water separators, boomed areas, and conveyance systems, to prevent the contamination of stormwater. (Appendix D.3. – dangerous wastes.)
 - Promptly repair or replace all substantially cracked or otherwise damaged paved secondary containment, high-intensity parking, and any other drainage areas, which are subjected to pollutant material leaks or spills.
 - Promptly repair or replace all leaking connections, pipes, hoses, valves, etc., which can contaminate stormwater.
 - Use solid absorbents, e.g., clay and peat absorbents and rags for cleanup of liquid spills/leaks, where practicable.
- **Preventive Maintenance.** A preventive maintenance program includes inspection and maintenance of stormwater management devices (BMPs) and drainage systems, and routine inspections of industrial facility operations including vehicle maintenance. Equipment such as tanks, containers (drums), and outside piping, pumps, and process equipment should be checked regularly for signs of deterioration. The following are additional preventive BMPs applicable at industrial sites:
 - Prevent the discharge of unpermitted liquid or solid wastes, process wastewater, and sewage to ground or surface water or to storm drains, which discharge, to surface water or to the ground. Floor drains in potential pollutant source areas shall not be connected to storm drains, surface water, or to the ground. Eliminate illicit non-stormwater discharges within 30 days of discovery.
 - Conduct all oily parts cleaning, steam cleaning, or pressure washing of equipment or containers inside a building and/or on an impervious contained area such as a

concrete pad. Direct contaminated stormwater from such an area to a sanitary sewer where allowed by local sewer authority, or to a storm drain after implementing BMP #17 (see Appendix A–BMPs for washing and steam cleaning).

- Do not pave over contaminated soil unless it has been determined that ground water has not been and will not be contaminated by the soil. Call Ecology for assistance.
- Construct impervious areas that are compatible with the materials handled. Portland cement concrete, asphalt, or equivalent material may be considered.
- Use drip pans to collect leaks and spills from equipment such as cranes at ship/boat building and repair facilities, log stackers, industrial parts, trucks, and other vehicles that are stored outside. Empty drip pans immediately after a spill or leak is collected in an uncovered area.
- Drain oil from fuel filters before disposal. Discard empty oil and fuel filters, oily rags, and other oily solid waste into appropriately closed and properly labeled containers and in compliance with the Uniform Fire Code.
- For the storage of liquids use containers, such as steel and plastic drums, that are rigid and durable, corrosion resistant to the weather and fluid content, non-absorbent, water tight, rodent-proof, and equipped with a close fitting cover.
- For the temporary storage of solid wastes contaminated with liquids or other potential pollutant materials use dumpsters, garbage cans, drums and comparable containers that are durable, corrosion resistant, non-absorbent, non-leaking, and equipped with either a solid cover or screen cover to prevent littering. If covered with a screen, the container must be stored under a lean-to or equivalent structure.
- Where exposed to stormwater, use containers, piping, tubing, pumps, fittings, and valves that are appropriate for their intended use and for the contained liquid.



Note: Evidence of stormwater contamination can include the presence of floatable, visible sheen, color, or turbidity in the runoff or existing or historical operational problems at the facility. Use pH paper or meter to test for stormwater contamination in areas subject to acid or alkaline contamination.

- **Spill Prevention and Reporting and Emergency Cleanup.** Identify area(s) of the facility where oil, hazardous material, or other pollutant spill(s) is/are likely to occur and their drainage points. Ensure that employees are aware of response procedures, including material handling and storage requirements. Access to appropriate spill cleanup equipment is essential. The SWPPP may include excerpts from other spill plans for the facility, e.g., Federal Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act. (See Appendix A-BMP #13 for spills)

The following are required spill control and reporting BMPs:

- Stop, contain, and clean up all spills immediately upon discovery. Do not flush absorbent materials or other spill cleanup materials to a storm drain or to surface water. Collect the contaminated absorbent material as a solid and place in appropriate disposal containers.
- If any spill has reached, or may reach, a sanitary or a storm sewer, ground water, or surface water, notify Ecology and the local sewer authority immediately (not to exceed one hour). Take reasonable steps to minimize any adverse impacts to waters of the state and to correct the problem. Follow up with written documentation covering the event *within thirty (30) days* unless otherwise directed by Ecology. Compliance with the preceding requirements does not relieve the permittee from responsibility to maintain continuous compliance with all permit conditions or the resulting liability for failure to comply.
- Place and maintain emergency spill containment and cleanup kit(s) at outside areas where there is a potential for fluid spills. These kits should be appropriate for the materials being handled and the size of the potential spill, and readily accessible to personnel responsible for spill response.
- Oil includes the following: oil, gasoline, or diesel fuel that causes a violation of the state of Washington's Water Quality Standards, or, that causes a film or sheen upon or discoloration of the waters of the state or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Note: Ecology recommends that the kit(s) include salvage drums or containers, such as high-density polyethylene, polypropylene or polyethylene sheet-lined steel; polyethylene or equivalent disposal bags; an emergency response guidebook; safety gloves/clothes/equipment; shovels or other soil removal equipment; and oil containment booms and absorbent pads—all stored in an impervious container.

- **Reporting and Recordkeeping** (See also S5 of the Permit)
 - Retain records of all monitoring including original continuous recordings, inspection, monitoring instrument calibration and maintenance, all permit application records of data, reports required by the permit including DMRs (discharge monitoring reports), and all compliance records, for a minimum of five years.
 - Report sampling results to Ecology quarterly on a DMR, either hard copies or electronically. Keep copies of discharge monitoring reports with the SWPPP. Send a DMR every quarter even when there is no sample. If no sample was taken, you must explain why on the DMR. Also, include any pollutant sampling data that is not required by the permit and an explanation for any missing quarterly data. Quarterly reports must be submitted within 45 days following the end of a reporting period and no later than May 15, August 14, November 14, and February 14 to Industrial Stormwater Permit Manager, Department of Ecology, Water Quality Program, P.O. Box 47696, Olympia, WA 98504-7696.

- For each sample, record the following: the date of analysis; exact place, method, time of, and name of individual conducting the sampling or analysis; analytical methods used; and analytical results. Include an explanation for not following any sampling criteria. Laboratory analytical reports on organics and metals must also include Chemical Abstract Service number, method detection limit, and practical quantitation limits (PQL) and must be kept on site.
- The results of each inspection (visual monitoring) event shall be summarized in an inspection report or checklist and be entered into or attached to the SWPPP. Quarterly visual monitoring reports must be signed by the person making the observations and, if different, reviewed and also signed in accordance with Condition G17. It shall include a certification that, in the judgment of the person doing the inspection, the facility is in compliance or non-compliance with the permit requirements identifying any incidents of non-compliance. The visual inspection report must include: scope of the inspection, the date of the inspection, major observations relating to the implementation of the SWPPP (performance of the BMPs, etc.), a summary of the actions which will be taken to meet permit requirements, and a tracking procedure to ensure that an inspection report is prepared and appropriate action steps taken in accordance with S5.E. of the permit.
- Submit a report to Ecology on noncompliance with the terms and conditions of this permit including visual inspections, discharges of greater than significant amounts of pollutants, and significant spill events of oil or hazardous substances within 30 days of discovery. The report shall contain a description of the noncompliance, including exact dates and times, and (if the noncompliance has not been corrected) the anticipated time it is expected to continue. Include the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (See S5.E. of the permit) Immediately notify Ecology's regional office of any noncompliance according to S5.E of the permit.
- **Inspections.** In the SWPPP, include procedures for complying with inspection and recordkeeping requirements by listing personnel who will conduct inspections, describing a tracking procedure to ensure that inspections are reported and appropriate actions taken as a result of the inspections, listing the personnel with signatory authority, describing how records will be retained for five years, and the name of the person who will be responsible for writing and signing the certificate of compliance with permit requirements.
- **Employee Training on Maintaining and Implementing the SWPPP.** An annual employee training program on the SWPPP and its implementation is required. Train all employees who work in pollutant source areas in identifying pollutant sources and in understanding pollutant control measures, spill prevention and response, good housekeeping, and environmentally acceptable material handling/management practices—particularly those related to vehicle and equipment liquids such as fuels, and vehicle/equipment cleaning. Include in the SWPPP the content, method, and frequency of the training and a log of the training dates.

9. Source-Specific Structural Source Control BMPs

Include descriptions of all structural source control BMPs in the SWPPP required for the pollutant generating activities and sources existing at the facility. For permittees choosing to use stormwater manuals or any other technical guidance documents approved by Ecology (the presumptive approach) the BMPs listed as applicable are considered the minimum required BMPs for an industrial activity. The operational and structural source control BMPs specified in Appendix A for the following pollutant generating sources can be implemented to comply with the permit:

- Dust control at manufacturing areas
- Fueling at dedicated stations
- Non-stormwater illicit connections to storm drains
- Pesticide management
- Loading and unloading liquid or solid material
- Maintenance and repair of vehicles and equipment
- Maintenance of stormwater drainage and treatment systems
- Manufacturing activities-outside
- Mobile fueling of vehicles and heavy equipment
- Painting/finishing/coating of vehicles/buildings/equipment
- Roof/building drains at manufacturing and commercial buildings
- Soil erosion and sediment control at industrial sites
- Spills of oil and hazardous substances
- Container storage of liquids, food wastes, or dangerous wastes
- Liquid storage in permanent above-ground tanks
- Outside storage or transfer of solid raw materials, by-products, or finished products
- Washing and steam cleaning vehicles/equipment/building structures

Note: If other pollutant generating sources or activities exist at a site, they must also be listed in the SWPPP.

10. Treatment BMPs

A discharge exceeding a benchmark value of a pollutant will trigger a level of concern by Ecology which may order the implementation of treatment BMPs if operational and structural source control BMPs do not reduce a pollutant below its benchmark value. A thorough explanation as to whether treatment is necessary must be included in the SWPPP. Applicable treatment BMPs are identified in Appendix A – Structural Source Control BMPs for specific pollutant sources. Treatment BMPs for typical stormwater pollutants are also identified below:

- For gross solids and turbidity (benchmark value of 25 NTU): sedimentation, filtration, or equivalent treatment. Consider emerging technologies where applicable. Descriptions of several emerging technologies and a procedure for evaluating and accepting emerging technologies are explained in Chapter 12, Volume V of Ecology's 2001 Stormwater Management Manual for Western Washington (Reference 3). It can be downloaded at www.ecy.wa.gov/programs/wq/stormwater/manual.html. Also, you can download the emerging technology testing protocol (TAPE), a listing of emerging technologies, and the status of several ongoing evaluations of technologies at www.ecy.wa.gov/programs/wq/stormwater/newtech/
- For oil and grease (benchmark value of 15 mg/L): applicable emerging technologies, oil/water separator, and activated carbon filter. If an ongoing or frequently recurring visible sheen is observed in the stormwater discharge, implement additional BMPs to prevent the sheen. If the discharge contains below a benchmark value of oil and grease and still has an ongoing or recurring visible sheen, submit a report to the Ecology regional office summarizing the effort to control the sheen. The report should include discharge data, inspection results, and BMPs implemented to attempt to control the sheen. After receiving such a report, an Ecology inspector may visit the site to decide whether further controls are necessary.
- If the pH of a stormwater discharge is below 6.0 or above 9.0, install a neutralization system or convey to an industrial wastewater treatment system. Carbon dioxide-based neutralization systems are being developed for high pH stormwater.
- For total zinc (benchmark value of 117 ug/L) use advanced treatment measures as specified in Reference 3.
- In those areas of eastern and central Washington with low rainfall, a no discharge option using infiltration and evapotranspiration can also be considered as long as ground water quality standards are not violated.

Engineering Practice for Treatment BMPs. Design, construct, and operate treatment BMPs in accordance with the criteria in an applicable Ecology stormwater manual or in accordance with professional engineering practice that is based on equivalent standards. (See also WAC 173-240-160; Requirements for Professional Engineer)

11. Stormwater Peak Runoff Rate and Volume Control

Include a narrative that describes flow control BMPs which are required for new development and redevelopment. Stormwater peak flow and volume control and duration requirements for western Washington are specified in minimum requirement #7 of the stormwater manual (Reference 3). Permittees who choose not to use approved SWMMs or other technical guidance documents to meet this requirement must include within the SWPPP the technical basis for their chosen BMPs (the demonstration approach).

12. Erosion and Sediment Control BMPs

Identify and include in your SWPPP, any activities or areas that have a high potential for significant soil erosion or that cause an exceedance of the benchmark value for turbidity, and identify measures to prevent or control the erosion. Refer to Ecology's stormwater manual (Reference 3) for designs and descriptions of appropriate BMPs. The SWPPP must document how stormwater BMPs were selected, the technical basis that supports the performance claims for the BMPs being selected, and an assessment of how the selected BMP will reduce the potential for soil erosion using either the presumptive or the demonstration approach.

13. Operation and Maintenance

All pollutant treatment and control systems and laboratories installed or used for compliance with the permit must be properly operated and maintained (O&M). Recommended O&M procedures for certain BMPs are provided in Chapter 4, Volume V of Ecology's 2001 Stormwater Manual. (3, 4). Bypass of untreated stormwater is prohibited unless it is consistent with the design criteria for the facility and with other provisions of Section S8 of the permit.

14. Handling and Disposal of Solid and Liquid Wastes from Stormwater Treatment, Storage, and Conveyance Systems

The owner or operator of an industrial facility is responsible for the legal handling and disposal of all liquid and solid waste generated or accumulated on their site. Disposal of waste materials from maintenance activities, including liquids and solids from the maintenance of catch basins and other stormwater facilities, shall be conducted in accordance with the Minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC or the recent Chapter 173-350, as applicable. Liquids or solids generated in the collection, storage, or treatment of contaminated stormwater may also be regulated as a hazardous or dangerous waste, and are subject to the Dangerous Waste Regulations, Chapter 173-303 WAC.

If you need help with the proper disposal and handling of the solid waste at your facility, first, contact the local jurisdiction solid waste or public works department. Contact the local government official where your facility is located from the following list:

COUNTY/CITY	PHONE	COUNTY/CITY	PHONE
Adams	(509) 659-3276	Kittitas	(509) 962-7542
Asotin	(509) 243-2074	Klickitat	(509) 773-4448
Bellingham,	(360) 676-6850	Lewis	(360) 740-1123
City of Benton		Lincoln	
Prosser	(509) 786-5611	Office	(509) 725-7041
Tri-Cities	(509) 736-3084	Transfer Station	(509) 725-0122
Chelan/Douglas	(509) 886-0899	Mason Landfill	(360) 427-9670
Clallam			ext 271
Port Angeles City Landfill	(360) 417-4875	Okanogan	(509) 422-7315
Olympic Disposal	(360) 417-0120	Pacific	(360) 875-9368
Clark/Skamania	(360) 737-6118	Pend Oreille	(509) 447-4821

COUNTY/CITY	PHONE	COUNTY/CITY	PHONE
Columbia	(509) 382-4121	Pierce	
Cowlitz/Wahkiakum	(360) 577-3125	General Number	(253) 798-4050
Ferry	(509) 775-5217	Recorded Information	(253) 798-4115
Franklin	(509) 545-3551	Web Page	
Garfield	(509) 843-1262	www.co.pierce.wa.us/So dWaste	
Grant	(509) 754-6082	San Juan	(360) 378-2114
Gays Harbor	(360) 249-4413	Skagit	(360) 336-9400
Island	(360) 679-7386	Snohomish	(425) 388-3429
Jefferson	(360) 385-9160	Snohomish, City of	1-800-732-9253
King		Snohomish County/City of	(509) 625-7898
County Solid Waste Utility (located outside of City)	(206) 296-6542	Stevens	(509) 684-4548
Seattle Solid Waste Utility (General Information or Dial '0' for Reception)	(206) 684-7600	Tacoma, City of	(253) 591-5543
City Facilities that Recycle	(206) 389-7304	Thurston	(360) 754-4111
County Facilities that Recycle	(206) 296-8800	Walla Walla	(509) 527-4463
Kitsap	(360) 895-5777	Whatcom	(360) 676-6724
		Whitman	(509) 397-3861
		Yakima	(509) 574-2450

F. Significant Amounts, Benchmark Values, and Effluent Limits

To determine whether a treatment facility must be installed after implementing operational and structural source control BMPs, you need to consider how the significant amount and benchmark value will be used in making this decision. A significant amount of a pollutant is defined as a pollutant that is amenable to treatment, prevention, or that has the potential to cause or contribute to a violation of surface water quality, ground water quality, or sediment management standards. A permit benchmark value may be used by Ecology as an indicator of a significant amount of a pollutant that needs further reduction. Therefore, Ecology may order implementation of additional BMPs, including treatment, to reduce a pollutant below a benchmark value. Effluent limits that must be met are also specified in the permit for some industries. The table below lists benchmark values that apply to all permittees and those that apply only to specific industries. (See explanatory notes below the table)

Parameter	Analytical Method	Benchmark Value
Turbidity	meter	25 NTU
pH	Meter or pH paper	6-9 pH units
BOD ₅	USEPA 405.1 or Std, Methods 5210B	30 mg/L
Total Zinc	USEPA 200.7	117 µg/L
Petroleum-Oil/grease	USEPA 1664 or 1664A	15 mg/L
Total Copper ¹	USEPA 200.7	63.6 µg/L ⁽³⁾

Parameter	Analytical Method	Benchmark Value
Total Lead ¹	USEPA 200.7	81.6 µg/L
Hardness ¹	USEPA 130.1 or 130.2	NA
Nitrate/Nitrite as N ²	USEPA 353.1 or 353.2	0.68 mg/L
Ammonia ²	USEPA 350.1	19 mg/L
Phosphorous (TP) ²	USEPA 365.1, 365.3 or SM 4500-PH/PI	2.0 mg/L
BOD ₅ ²	USEPA 405.1, SM 5201B	30 mg/L

1. Additional parameters required if the zinc benchmark value is exceeded for two consecutive quarters. Hardness is not required for discharges to marine waters.
2. Air transportation sites analyze nitrate/nitrite, ammonia, and BOD₅; Chemical/Allied Products and Food and Kindred Products sites analyze nitrate/nitrite, phosphorous (TP), and BOD₅.
3. Subject to final resolution of litigation and issuance of modified permit

Additional Pollutant Parameters

Carefully review Special Conditions S3 and S4 of the permit to determine which additional pollutant parameters must be monitored if your facility is among the specific industrial groups or conducts the activities listed including hazardous and non-hazardous waste landfills, coal piles, significant contributors, timber products industry, paper and allied products, food and kindred products, primary metals, metals mining, automobile salvage, scrap recycling, and metals fabricating.

G. Monitoring Stormwater Discharges

Monitoring must be conducted in accordance with the SWPPP Monitoring Plan and may follow the sampling procedures in Ecology's *How to do Stormwater Sampling* (Reference 2). The information below is a summary of the monitoring requirements of the Permit which should be included in the Monitoring Plan.

1. Sampling

All permitted facilities must conduct quarterly sampling (during representative facility operations) and visual inspections of authorized stormwater discharges to surface water. The sampling results must be reported to Ecology quarterly on DMRs, including no discharges and a no sampling (or analysis of a parameter) decision based on eight consecutive quarters of a reported value that is equal to or less than the benchmark value. For 303(d) listed or waters with total maximum daily load (TMDL), refer to S4.F for sampling criteria.

The sampling protocol includes the following:

- A grab sample taken within the first hour or a time or flow proportional sample within the first 30 minutes for a minimum of 2 hours after the onset of the discharge.
- Sampling points at greatest exposure to pollutants must be selected. Where the pollutant type doesn't vary at multiple discharge sites only the discharge at highest pollutant

concentration may be sampled and documented in the SWPPP. Otherwise each point of discharge must be sampled and analyzed. Include area and type of drainage surface (e.g., vegetated, paved) so that volumes or flows of all discharges can be estimated. The sampling point must be as close to the point of discharge as is practicable.

- The parameters required to be analyzed are turbidity, pH, total zinc, and oil and grease-petroleum based. If the zinc is above the benchmark value for two consecutive quarters, then total copper, total lead, and hardness (not required for discharge to marine water) analyses are also required beginning with the next sampling quarter.
- To qualify for sampling, a storm event must be of an intensity of at least 0.1 inch rainfall/24 hours and must be preceded by at least 24 hours of no measurable precipitation.
- Include explanations of any sampling variances, anomalies, and deviations from permit criteria, in the SWPPP.
- Check permit Section S4.B. for exceptions to sampling requirements.

For 303(d) listed waters or waters subject to TMDL determination (except 303(d) Listings for sediment and tissue) also include quarterly monitoring of parameters on the 303(d) list, and for allocated pollutants based on a TMDL determination, except for temperature. Fecal coliform is required only if it is from an industrial activity at the facility. Monitoring may be suspended for a listed parameter if the parameter is not detected in eight consecutive quarterly samples or, for pH, if the pH values are not outside the range of 6.5-8.5 in fresh water and not outside the range of 7.0-8.5 in marine waters.

If a 303(d) receiving water is listed for sediment also analyze total suspended solids (TSS) in the discharge and use secondary treatment discharge standards of 30 mg/L monthly average and 45 mg/L instantaneous maximum as the benchmark values.

2. Visual Monitoring by Personnel Named in the SWPPP (Use Worksheets 6, 7, & 11)

Conduct quarterly visual inspections of the discharges to ground and surface water during sampling and an annual inspection of the remaining unsampled discharges during a storm event. The inspection must include:

- Verification that the descriptions of the pollutant sources are accurate; the site map reflects current conditions; and structural and non-structural BMPs are implemented, properly maintained, and adequate. Adjust BMPs, as needed, and modify the SWPPP accordingly.
- Observations of the presence of floating materials including oil and grease, visible sheen, discoloration, turbidity, and odor in the stormwater discharges and in outside vehicle maintenance/repair and liquid handling and storage areas. In areas where acid or alkaline materials are handled or stored, use pH paper or meter to identify those types of stormwater contaminants, where needed.

- Include in the SWPPP an implementation schedule for necessary improvements within 30 days of an inspection. Implement non-capital BMPs within two weeks and capital BMPs within six months after revising the SWPPP.
- The responsible person named in the SWPPP must certify each visual monitoring report pursuant to G17 and keep it on site with the SWPPP.

Conduct at least one dry season inspection during July, August, or September each year after at least 7 consecutive days of no precipitation and determine whether there is/are unpermitted non-stormwater discharges to storm drains or receiving waters, such as domestic wastewater, noncontact cooling water, process wastewater (including leachates) and vehicle/equipment washwater. Inspect all discharge points during dry weather for odors, discolorations, abnormal flows or conditions. As a rule, the discharge point should be dry during a period of extended dry weather since a stormwater collection system should only collect stormwater. Keep in mind, however, that drainage of a particular rain event can continue for three days or more after the rain has stopped. Infiltration of ground water into the underground collection system is also common. If a non-stormwater discharge is discovered, notify an Ecology regional office and eliminate the illicit discharge within 30 days or apply for a permit.

3. Additional Information that should be included in the Monitoring Plan

Sample Analysis, Handling, and Preservation. Samples should be analyzed, handled, and preserved in accordance with Code of Federal Regulations Title 40, Part 136. Typically, acceptable analytical methods include USEPA methods and Standard Methods for the Examination of Water and Wastewater (APHA). Laboratories accredited (Chapter 173-50 WAC) must be used for pollutants other than for flow, temperature, settleable solids, conductivity, pH, turbidity, and internal process control parameters. If use of an accredited lab is required, then analysis of conductivity, pH, and turbidity must also be conducted.

Special Considerations for Oil and Grease Sampling. Only grab samples must be taken for oil/grease. The sample should not be transferred from one container to another—rather, a wide-mouth solvent prerinsed one-liter glass bottle with a Teflon insert in the lid should be used to collect the sample. The sample must be preserved by adding sulfuric or hydrochloric acid to a pH of less than 2.0 and then stored no longer than 28 days at four degrees C, until analyzed. (See Reference 2 for details)

Health and Safety: Monitoring personnel should be trained in proper safety procedures. Stormwater monitoring may subject sampling personnel to hazardous conditions, such as the following:

- Hazardous weather conditions (e.g., wind, lightning, flooding)
- Sampling in confined spaces (e.g., manholes)
- Hazards associated with chemicals and biological hazards (e.g., rodents and snakes)
- Physical hazards (e.g., traffic, falling objects, sharp edges, slippery footing)
- Lifting injuries from opening or removing access panels and manhole covers, etc.

H. The Effect on the SWPPP of Changing Ownership or Ceasing Operation

If the business is sold and the operation continues to be basically the same, the new owner may assume coverage under the previous owner's permit. The new owner may assume ownership of the current SWPPP by modifying the SWPPP according to any changes in the operation. Both the previous and new owner shall complete a "Transfer of Ownership" form (Appendix E). The new owner shall submit, along with the transfer request form, a new stormwater application form for permit coverage, and mark it as a "Change of Information" along with the current stormwater permit number. An adjusted permit fee billing statement will be processed and mailed to both parties. The previous owner should retain a copy of the original stormwater permit coverage application and SWPPP for a minimum of three years. (See Permit Condition G14)

I. References

1. *The Industrial Stormwater General Permit*, Ecology, September 20, 2002
2. *How To Do Stormwater Sampling*, Ecology, December 2002
3. *Stormwater Management Manual for Western Washington*; Ecology, August 2001.
4. *Stormwater Management Manual for Eastern Washington*, Ecology, when published
5. *Stormwater General Permit Implementation Manual for Log Yards*, Ecology, when published
6. *BMPs to Prevent Stormwater Pollution at Vehicle Recycler Facilities*, Ecology, 1994.
7. *Spill Prevention and Countermeasure Plans, Section 311, Clean Water Act*
8. *Emergency Spill Response in Washington State*, Ecology Publication # 97-1165-CP.

Appendix A

Source-Specific Operational and Structural Source Control Best Management Practices

1. BMPs for Dust Control at Manufacturing Areas

Description of Pollutant Sources. Industrial material handling activities can generate dust that is typically removed using exhaust systems. This can generate air emissions that can contaminate stormwater. Dusts can be generated at cement and concrete products mixing and wherever powdered materials are handled. Particulate materials that are of concern to air pollution control agencies include grain dust, sawdust, coal, gravel, crushed rock, cement, and boiler fly ash. The objective of this BMP is to reduce the stormwater pollutants caused by dust generation and control.

Pollutant Control Approach. Prevent dust generation and emissions where practicable, regularly clean-up dust that can contaminate stormwater, and convey dust contaminated stormwater to proper treatment.

Applicable BMPs

- Clean, as needed, powder material handling equipment and vehicles that can be sources of stormwater pollutants to remove accumulated dust and residue.
- Regularly sweep dust accumulation areas that can contaminate stormwater. Sweeping should be conducted using vacuum filter equipment to minimize dust generation and to ensure optimal dust removal.
- In manufacturing operations, train employees to carefully handle powders to minimize the generation of dust where stormwater is likely to be contaminated.
- Consider using dust filtration/collection systems such as bag house filters, cyclone separators, etc., to control vented dust emissions that could contaminate stormwater. Control of zinc dusts in rubber production is one example.
- Use water spray to flush dust accumulations to sanitary sewers where allowed by the local sewer authority or to other appropriate treatment system.
- Use approved dust suppressants such as those listed in Ecology Publication *Techniques for Dust Prevention and Suppression*, #96-433. (Ecology, 1996). Application of some products may not be appropriate in close proximity to receiving waters or conveyances close to receiving waters. For more information, check with an Ecology regional office or the local jurisdiction.

Treatment BMPs, if required (See Section E.10.). For removal of TSS in stormwater, use sedimentation basins, wet ponds, wet vaults, catch basin filters, vegetated filter strips, or equivalent sediment removal BMPs (3, 4).

2. BMPs for Fueling At Dedicated Stations

Description of Pollutant Sources. Typically, stormwater contamination at fueling stations is caused by leaks/spills of fuels, lube oils, radiator coolants, and vehicle washwater.

Pollutant Control Approach. Cover with roof or canopy and conduct the fueling in an impervious containment area.

Operational BMPs

- Prepare an emergency spill response and cleanup plan (see applicable spill control BMPs) and have designated trained person(s) available either on site or on call at all times to promptly and properly implement that plan and immediately cleanup all spills. Keep suitable cleanup materials, such as dry adsorbent materials, on site to allow prompt cleanup of a spill.
- Train employees on the proper use of fuel dispensers. Post signs in accordance with the Uniform Fire Code (UFC). Post “No Topping Off” signs (topping off gas tanks causes spillage and vents gas fumes to the air). Make sure that the automatic shutoff on the fuel nozzle is functioning properly.
- The person conducting the fuel transfer must be present at the fueling pump during fuel transfer, particularly at unattended or self-serve stations.
- Keep drained oil filters in a suitable container or drum.

Structural Source Control BMPs

- Design the fueling island to control spills (dead-end sump or spill control separator in compliance with the UFC) and to treat collected stormwater and/or wastewater to required levels. Slope the concrete containment pad around the fueling island toward drains—either trench drains, catch basins, and/or a dead-end sump. The slope of the drains shall not be less than 1 percent (Section 7901.8 of the UFC). Drains to treatment shall have a shutoff valve, which must be closed in the event of a spill. The spill control sump must be sized in compliance with Section 7901.8 of the UFC; or
- Design the spill containment pad of the fueling island with a sill or berm raised to a minimum of four inches (Section 7901.8 of the UFC) to prevent the runoff of spilled liquids and to prevent run-on of stormwater from the surrounding area. Raised sills are not required at the open-grate trenches that connect to an approved drainage-control system.
- The fueling pad must be paved with Portland cement concrete, or equivalent. Asphalt is not considered an equivalent material.
- The fueling island must have a roof or canopy to prevent the direct entry of precipitation onto the spill containment pad (see Figure 2.1). The roof or canopy should, at a minimum, cover the spill containment pad (within the grade break or

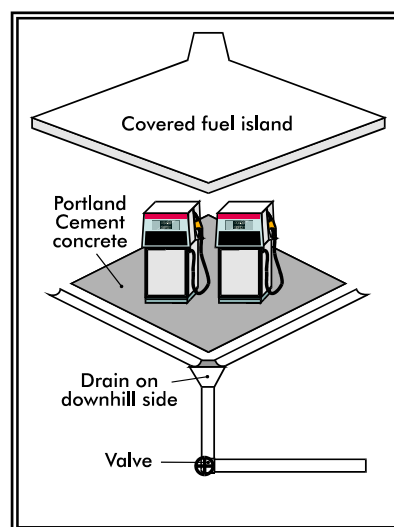


Figure 2.1 – Covered Fuel Island

fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain. Convey all roof drains to storm drains outside the fueling containment area.

- If treatment of the runoff is required (see section E.10.) stormwater collected on the fuel island containment pad must be conveyed to a sanitary sewer system, if approved by the sanitary authority; or to an appropriate treatment system such as an oil/water separator, media filter, biofilter, or equivalent treatment. Discharges from treatment systems to storm drains or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a benchmark value of oil and grease-petroleum.
- Alternatively, stormwater collected on the fuel island containment pad may be collected and held for proper off-site disposal.
- Conveyance of any fuel-contaminated stormwater to a sanitary sewer must be approved by the local sewer authority and must comply with pretreatment regulations (WAC 173-216-060). These regulations prohibit discharges that could cause fire or explosion. An explosive or flammable mixture is defined under state and federal pretreatment regulations, based on a flash point determination of the mixture. If contaminated stormwater is determined not to be explosive, then it could be conveyed to a sanitary sewer system.
- Transfer the fuel from the delivery tank trucks to the fuel storage tank in impervious contained areas and ensure that appropriate overflow protection is used. Alternatively, cover nearby storm drains during the filling process and use drip pans under all hose connections.

Additional BMPs for vehicles ten feet in height or greater

A roof or canopy may not be practicable at fueling stations that regularly fuel vehicles that are ten feet in height or greater. At those types of fueling facilities, the following BMPs apply, as well as the applicable BMPs and fire prevention (UFC requirements) of this BMP for fueling stations.

- If a roof or canopy is impractical the concrete fueling pad must be equipped with emergency spill control, which includes a shutoff valve for the drainage from the fueling area. The valve must be closed in the event of a spill. An electronically actuated valve is preferred to minimize the time lapse between spill and containment. Spills must be cleaned up and disposed off site in accordance with BMPs for Spills of Oil and Hazardous Substances.
- If treatment is required (see Section E.10.) the valve may be opened to convey contaminated stormwater to a sanitary sewer, if approved by the sewer authority, or to oil/water separator, media filter, biofilter, or equivalent treatment. Discharges from treatment systems to storm drains or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a benchmark value of oil and grease.

3. BMPs for Non-stormwater Illicit Connections to Storm Drains

Description of Pollutant Sources. Illicit connections are unpermitted sanitary or process wastewater discharges to a storm drain or to a surface water, rather than to a sanitary sewer, industrial process wastewater or other appropriate treatment. Examples of non-stormwater discharges include any water used directly in the manufacturing process (process water), air conditioner condensate, non-contact cooling water, vehicle wash water, and sanitary wastewater.

Pollutant Control Approach. Identify and eliminate unpermitted discharges within 30 days, or obtain an NPDES permit, where necessary.

Operational BMPs

- Identify and eliminate unpermitted non-stormwater discharges to storm drains, ground water, or surface water; and, convey unpermitted discharges to a sanitary sewer if allowed by the local sewer authority, or to other approved treatment; and, obtain appropriate permits for these discharges. Call the appropriate Ecology regional office if you discover a discharge of non-stormwater discharging to a surface water. *The discharge must be eliminated within 30 days*, or you may need to apply for Ecology's individual NPDES or State Waste Discharge Permit. Unless the discharge is eliminated or application is made for permit coverage, you are subject to enforcement action by Ecology or third party lawsuits.
- Conduct a survey of sanitary and industrial wastewater, condensate, cooling water, and any other contaminant discharge connections to storm drains and to surface water as follows:
 - Conduct a field survey of buildings, particularly older buildings, and other industrial areas to locate storm drains from buildings and paved surfaces. Note where these join the public storm drain(s).
 - During non-stormwater conditions inspect each storm drain for non-stormwater discharges. Record the locations of all non-stormwater discharges. Include all permitted discharges.
 - If useful, prepare a map of each area as it is to be surveyed. Show on the map the known location of storm drains, sanitary sewers, and permitted and unpermitted discharges. Aerial photos may be useful. Check records such as piping schematics to identify known side sewer connections and show these on the map. Consider using smoke, dye, or chemical analysis tests to detect connections between two conveyance systems (e.g., process water and stormwater). If desirable, conduct TV inspections of the storm drains and record the footage on videotape. Compare the observed locations of connections with the information on the map and revise the map accordingly. Note suspect connections that are inconsistent with the field survey. Several of the common dry weather inspection methods are described below.

Common Dry Weather Methods for Locating Non-stormwater Discharges

- Review a sewer map or plant schematic (a map of pipes and drainage systems used to carry process wastewater, non-contact cooling water, air conditioner condensate, and sanitary wastes (bathrooms, sinks, etc.)). It is not uncommon to find that accurate and current information is not available. If you have an accurate and current map, simply examine the pathways of the different water circuits cited above. Determine where interior floor drains discharge. The drain(s) may be connected to the stormwater drainage system. If so, they *must* be disconnected and redirected to the sanitary sewer. Contact your local sewage utility before redirecting flow to the sanitary sewer.
- Observe all discharge points during dry weather for odors, discolorations, abnormal flows or conditions. As a rule, the discharge point should be dry during a period of extended dry weather since a stormwater collection system should only collect stormwater.
- Smoke testing of wastewater and stormwater collection and conveyance is used to detect connections between the two systems. During dry weather, the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet, sink, floor drain, wastewater conveyance, etc., indicates that there may be a connection with the stormwater system. If so, they must be disconnected and redirected to the sanitary sewer. Contact your local sewage utility before redirecting flow to the sanitary sewer.
- A dye test can be performed by simply releasing a dye into floor drains, sinks, basins, or other potential contaminant sources that may discharge to a surface water or storm sewer system. Examine discharge points in the stormwater collection system or surface water for discoloration.

4. BMPs for Pesticide Management

Description of Pollutant Sources. Runoff from pesticide application areas can cause contaminants of stormwater. Pesticide applications at access roads and yard areas include sap stain and insect control on lumber and logs, rooftop moss removal, and killing nuisance rodents. Leaching and dripping from treated parts, container leaks, product misuse, and outside storage of pesticide contaminated materials and equipment can cause stormwater contamination.

Pollutant Control Approach. Develop and implement an Integrated Pest Management Plan (IPM) and use pesticides only as a last resort. If pesticides/herbicides are used they must be carefully applied in accordance with label instructions on U.S. Environmental Protection Agency (EPA) registered materials.

Operational BMPs for the Use of Pesticides

- Develop and implement an IPM (Reference 3) and use pesticides only as a last resort. An IPM program may consist of the following steps:
 - Step 1. Correctly identify problem pests and understand their life cycle.
 - Step 2. Establish tolerance thresholds for pests.
 - Step 3. Monitor to detect and prevent pest problems.

- Step 4. Modify the maintenance program to promote healthy plants and discourage pests.
- Step 5. Use cultural, physical, mechanical, or biological controls first if pests exceed the tolerance thresholds.
- Step 6. Evaluate and record the effectiveness of the control and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.
- Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping, and public notice procedures. All procedures shall conform to the requirements of Chapter 17.21 RCW and Chapter 16-228 WAC (Appendix D.7). Include the following BMPs:
 - Choose the least toxic pesticide available that is capable of reducing the infestation to acceptable levels. The pesticide should readily degrade in the environment and/or have properties that strongly bind it to the soil. Any pest control used should be conducted at the life stage when the pest is most vulnerable. Any method used should be site-specific and not used wholesale over a wide area.
 - Apply the pesticide according to label directions. Under no conditions shall pesticides be applied in quantities that exceed manufacturer's instructions.
 - Mix the pesticides and clean the application equipment in an area where accidental spills will not enter surface or ground waters and will not contaminate the soil.
 - Store pesticides in enclosed areas or in covered impervious containment. Ensure that pesticide contaminated stormwater or spills/leaks of pesticides are not discharged to storm drains. Do not hose down the paved areas to a storm drain or conveyance ditch. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
 - Clean up any spilled pesticides and ensure that the pesticide contaminated waste materials are kept in designated covered and contained areas.
 - Include immediate shutoff of the pesticide application equipment in the event of an emergency.
 - Do not spray pesticides within 100 feet of open waters including wetlands, ponds, and streams, sloughs and any drainage ditch or channel that leads to open water except when approved by Ecology or the local jurisdiction. All sensitive areas including wells, creeks, and wetlands must be flagged prior to spraying.
 - As required by the local government or by Ecology, complete public posting of the area to be sprayed prior to the application.

- Spray applications should be conducted only during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.
 - Consider alternatives to the use of pesticides such as covering or harvesting weeds, substituting vegetative growth, and manually controlling weeds and removing moss.
 - Rinseate from equipment cleaning and/or triple rinsing of pesticide containers should be used as product or recycled into product.
 - Once a pesticide is applied, its effectiveness should be evaluated for possible improvement. Records should be kept showing the applicability and inapplicability of the pesticides considered. An annual evaluation procedure should be developed including a review of the effectiveness of pesticide applications, impact on buffers and sensitive areas (including potable wells), public concerns, and recent toxicological information on pesticides used/proposed for use.
 - If individual or public potable wells are located in the proximity of commercial pesticide applications, contact the regional Ecology hydrogeologist to determine if additional pesticide application control measures are necessary.
- Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants such as Pythium root rot, ashy stem blight, and parasitic nematodes. The following are three possible mechanisms for disease control by compost addition (USEPA Publication 530-F-9-044):
 1. Successful competition for nutrients by antibiotic production.
 2. Successful predation against pathogens by beneficial microorganism.
 3. Activation of disease-resistant genes in plants by composts.

Note: Installing an amended soil/landscape system can preserve both the plant system and the soil system more effectively. This type of approach provides a soil/landscape system with adequate depth, permeability, and organic matter to sustain itself and continue working as an effective stormwater infiltration system and a sustainable nutrient cycle.

For more information, contact the WSU Extension Home-Assist Program, (253) 445-4556, or Bio-Integral Resource Center (BIRC), P.O. Box 7414, Berkeley, CA 94707, or the Washington Department of Ecology to obtain “Hazardous Waste Pesticides” (Publication #89-41); and/or EPA to obtain a publication entitled “Suspended, Canceled and Restricted Pesticides” which lists all restricted pesticides and the specific uses that are allowed. Valuable information from these sources may also be available on the internet.

5. BMPs for Loading and Unloading Areas for Liquid or Solid Material

Description of Pollutant Sources. Loading and unloading of liquid and solid materials are typically conducted at shipping and receiving, outside storage, fueling areas, etc. Materials transferred can include products, raw materials, intermediate products, waste materials, fuels, and scrap metals. Leaks and spills of fuels, oils, powders, organics, heavy metals, salts, acids, alkalis, etc., during transfer are potential causes of stormwater contamination. Spills from hydraulic line breaks are a common problem at loading docks.

Pollutant Control Approach. Cover and contain the loading/ unloading area where necessary to prevent run-on of stormwater and run-off of contaminated stormwater.

Operational BMPs

At All Loading/ Unloading Areas

- A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could otherwise be washed off by stormwater. Sweep outside areas that are covered for a period of time by containers, logs, or other material after the areas are cleared.
- Place drip pans, or other appropriate temporary containment device, at locations where leaks or spills may occur such as hose connections, hose reels, and filler nozzles. Drip pans shall always be used when making and breaking connections (see Figure 2.2). Check loading/unloading equipment such as valves, pumps, flanges, and connections regularly for leaks and repair as needed.

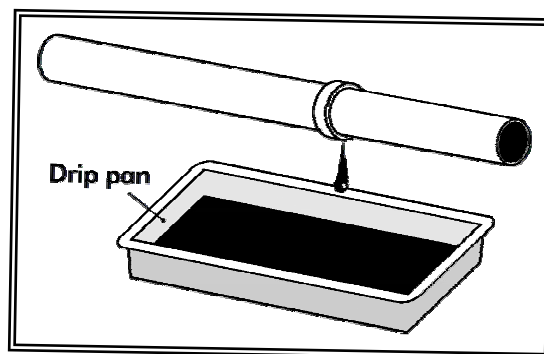


Figure 2.2 – Drip Pan

At Tanker Truck and Rail Transfer Areas to Above/Below-ground Storage Tanks

- To minimize the risk of accidental spillage, prepare an operations plan that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it or otherwise have it readily available to employees.
- Prepare and implement an emergency spill cleanup plan for the facility (See BMP Spills of Oil and Hazardous Substances) which includes the following BMPs:
 - Ensure the cleanup of liquid/solid spills in the loading/unloading area immediately, if a significant spill occurs, and, upon completion of the loading/unloading activity, or, at the end of the working day.
 - Retain and maintain an appropriate oil spill cleanup kit on-site for rapid cleanup of material spills. .

- Ensure that an employee trained in spill containment and cleanup is present during loading/unloading.
- Report spills as required in BMP on spills

At Rail Transfer Areas to Above/Below-Ground Storage Tanks. Install a drip pan system as illustrated (see Figure 2.3) within the rails to collect spills/leaks from tank cars and hose connections, hose reels, and filler nozzles.

Loading/Unloading from/to Marine Vessels. Facilities and procedures for the loading or unloading of petroleum products must comply with Coast Guard requirements specified in Appendix D.5.

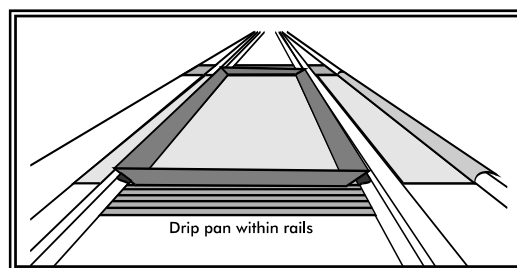


Figure 2.3 – Drip Pan Within Rails

Transfer of Small Quantities from Tanks and Containers. Refer to BMPs Storage of Liquids in Permanent Above-ground Tanks, and Storage of Liquid, Food Waste, or Dangerous Waste Containers, for requirements on the transfer of small quantities from tanks and containers, respectively.

Structural Source Control BMPs

At All Loading/Unloading Areas

- Consistent with Uniform Fire Code requirements (Appendix D.2) and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building, under a roof, or lean-to, or other appropriate cover.
- Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the run-off or loss of any spilled material from the area.
- Large loading areas frequently are not curbed along the shoreline. As a result, stormwater passes directly off the paved surface into surface water. Place curbs along the edge or slope the edge such that the stormwater can flow to an internal storm drain system that leads to an approved treatment BMP.
- Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated “alleyways” that are not covered by material, containers, or equipment.
- For the transfer of pollutant liquids in areas that cannot contain a catastrophic spill, consider installing an automatic shutoff system in case of unanticipated off-loading interruption (e.g., coupling break, hose rupture, overfill, etc.).

At Loading and Unloading Docks

- Install/maintain overhangs or door skirts that enclose the trailer end (see Figures 2.4 and 2.5) to prevent contact with rainwater.
- Design the loading/unloading area with berms, sloping, etc., to prevent the run-on of stormwater.
- Retain on-site the necessary materials for rapid cleanup of spills.

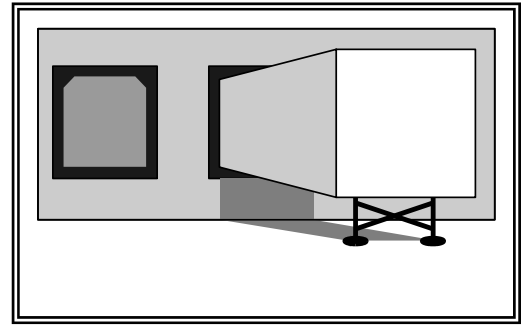


Figure 2.4 – Loading Dock with Door Skirt

At Tanker Truck Transfer Areas to Above/Below-ground Storage Tanks

- Pave the area on which the transfer takes place. If any transferred liquid, such as gasoline, is reactive with asphalt, pave the area with Portland cement concrete.
- Slope, berm, or dike the transfer area to a dead-end sump, spill containment sump, a spill control (SC) oil/water separator, or other spill control device. The minimum spill retention time should be 15 minutes at the greater flow rate of the highest fuel dispenser nozzle through-put rate, or the peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad, whichever is greater. The volume of the spill containment sump should be a minimum of 50 gallons with an adequate grit sedimentation volume.

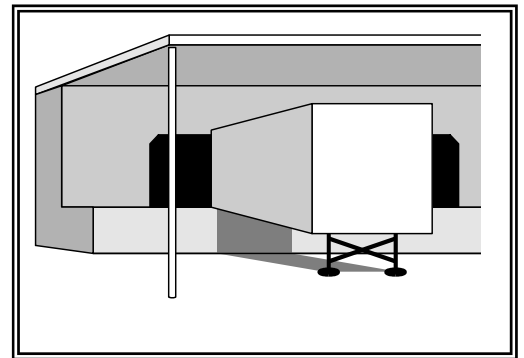


Figure 2.5 – Loading Dock with Overhang

6. BMPs for Maintenance and Repair of Vehicles and Equipment

Description of Pollutant Sources. Pollutant sources include parts/vehicle cleaning, spills/leaks of fuel and other liquids, replacement of liquids, outdoor storage of batteries/liquids/parts, and vehicle parking.

Pollutant Control Approach. Control of leaks and spills of fluids using good housekeeping and cover and containment BMPs.

Operational BMPs

- Inspect for leaks all incoming vehicles, parts, and equipment stored temporarily outside.
- Use drip pans or containers under parts or vehicles that drip or that are likely to drip liquids, such as during dismantling of liquid containing parts or removal or transfer of liquids.
- Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system.
- Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.

- Do not pour/convey washwater, liquid waste, or other pollutant into storm drains or to surface water. Do not hose down work areas to storm drains. Use dry methods for cleaning leaked fluids. Check with the local sanitary sewer authority for approval to convey to a sanitary sewer.
- Do not connect maintenance and repair shop floor drains to storm drains or to surface water. To allow for snowmelt during the winter, a drainage trench with a sump for particulate collection can be installed and used only for draining the snowmelt and not for discharging any vehicular or shop pollutants.
- Consider storing damaged vehicles inside a building or other covered containment until all liquids are removed. Remove liquids from vehicles retired for scrap.
- Consider cleaning parts with aqueous detergent based solutions or non-chlorinated solvents such as kerosene or high flash mineral spirits, and/or use wire brushing or sand blasting whenever practicable. Avoid using toxic liquid cleaners such as methylene chloride, 1,1,1-trichloroethane, trichloroethylene, or similar chlorinated solvents. Choose cleaning agents that can be recycled.
- Inspect all BMPs regularly, particularly after a significant storm. Identify and correct deficiencies to ensure that the BMPs are functioning as intended.

Structural Source Control BMPs

- Conduct all maintenance and repair of vehicles and equipment in a building, or other covered impervious containment area that is sloped to prevent run-on of uncontaminated stormwater and run-off of contaminated stormwater.
- Park large mobile equipment, such as log stackers, in a designated contained area.

Treatment BMPs, if required (See Section E. 10.). Contaminated stormwater run-off from vehicle staging and maintenance areas may be conveyed to a sanitary sewer, if allowed by the local sewer authority, or to an API or CP oil and water separator followed by a basic treatment BMP, media filtration systems, or other equivalent oil treatment system (3, 4).

7. BMPs for Maintenance of Stormwater Drainage and Treatment Systems

Description of Pollutant Sources. Facilities include roadside catch basins, conveyance systems, detention facilities such as ponds and vaults, oil and water separators, biofilters, settling basins, infiltration systems, and all other types of stormwater treatment systems presented in Volume V of SWMM (3). Oil and grease, hydrocarbons, debris, heavy metals, sediments, and contaminated water are found in catch basins, oil and water separators, settling basins, etc.

Pollutant Control Approach. Provide maintenance and cleaning of debris, sediments, and oil from stormwater collection, conveyance, and treatment systems to obtain proper operation.

Operational BMPs. Maintain stormwater treatment facilities according to the O&M procedures presented in Section 4.6 of Volume V (3) in addition to the following BMPs:

- Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine whether improvements in O&M are needed.

- Promptly repair any deterioration threatening the structural integrity of the facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways.
- Ensure that storm sewer capacities are not exceeded and that heavy sediment discharges to the sewer system are prevented.
- Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc., and discharge to a sanitary sewer if approved by the sewer authority or truck to a local or state government approved disposal site.
- Post warning signs; “Dump No Waste - Drains to Ground Water,” “Streams,” “Lakes,” or emboss on or adjacent to all storm drain inlets *where practical*.

8. BMPs for Outside Manufacturing Activities

Description of Pollutant Sources. Manufacturing pollutant sources include outside process areas, stack emissions, and areas where manufacturing activity has taken place in the past and significant pollutant materials remain and are exposed to stormwater.

Pollution Control Approach. Cover and contain outside manufacturing and prevent stormwater run-on and contamination, where feasible.

Operational BMP

Sweep paved areas regularly, as needed, to prevent contamination of stormwater.

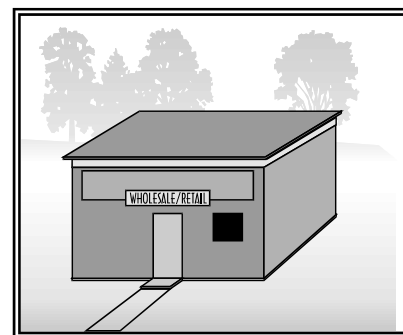


Figure 2.6 – Enclose the Activity

Structural Source Control BMPs

- Alter the activity by eliminating or minimizing the contamination of stormwater.
- Enclose the activity (see Figure 2.6). If possible, enclose the manufacturing activity in a building.
- Cover the activity and connect floor drains to a sanitary sewer, if approved by the local sewer authority. Berm or slope the floor as needed to prevent drainage of pollutants to outside areas. (Figure 2.7)
- Isolate and segregate pollutants as feasible. Convey the segregated pollutants to a sanitary sewer, process treatment or a dead-end sump depending on available methods and applicable permit requirements.

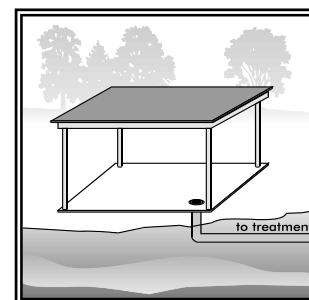


Figure 2.7 – Cover the Activity

9. BMPs for Mobile Fueling of Vehicles and Heavy Equipment

Description of Pollutant Sources. Mobile fueling, also known as fleet fueling, wet fueling, or wet hosing, is the practice of filling fuel tanks of vehicles by tank trucks that are driven to the yards or sites where the vehicles to be fueled are located. Diesel fuel is considered as a Class II Combustible Liquid, whereas gasoline is considered as a Flammable Liquid.

Pollutant Control Approach. Proper training of the fueling operator and the use of spill/drip control and reliable fuel transfer equipment with backup shutoff valving are typically needed.

Note that some local fire departments may have restrictions on mobile fueling practices.

Operational BMPs

- Ensure that all mobile fueling operations are approved by the local fire department and comply with local and Washington State fire codes.
- In fueling locations that are in close proximity to sensitive aquifers, designated wetlands, wetland buffers, or other waters of the state, approval by local jurisdictions is necessary to ensure compliance with additional local requirements.
- Ensure the compliance with all 49 CFR 178 requirements for DOT 406 cargo tanker. Documentation from a Department of Transportation (DOT) Registered Inspector shall be proof of compliance.
- Ensure the presence and the constant observation/monitoring of the driver/operator at the fuel transfer location at all times during fuel transfer and ensure that the following procedures are implemented at the fuel transfer locations:
 - Locating the point of fueling at least 25 feet from the nearest storm drain or inside an impervious containment with a volumetric holding capacity equal to or greater than 110 percent of the fueling tank volume, or covering the storm drain to ensure no inflow of spilled or leaked fuel. Storm drains that convey the inflow to a spill control separator approved by the local jurisdiction and the fire department need not be covered. Potential spill/leak conveyance surfaces must be impervious and in good repair.
 - Placing a drip pan or an absorbent pad under each fueling location prior to and during all dispensing operations. The pan (must be liquid tight) and the absorbent pad must have a capacity of 5 gallons. Spills retained in the drip pan or the pad need not be reported.
 - The handling and operation of fuel transfer hoses and nozzle, drip pan(s), and absorbent pads as needed to prevent spills/leaks of fuel from reaching the ground, storm drains, and receiving waters.
 - Not extending the fueling hoses across a traffic lane without fluorescent traffic cones, or equivalent devices, conspicuously placed so that all traffic is blocked from crossing the fuel hose.
 - Removing the fill nozzle and cessation of filling when the automatic shut-off valve engages. Do not allow automatic shutoff fueling nozzles to be locked in the open position.
 - Not “topping off” the fuel receiving equipment.

- Provide the driver/operator of the fueling vehicle with:
 - Adequate flashlights or other mobile lighting to view fill openings with poor accessibility. Consult with local fire department for additional lighting requirements.
 - Two-way communication with his/her home base.
- Train the driver/operator annually in spill prevention and cleanup measures and emergency procedures. Make all employees aware of the significant liability associated with fuel spills.
- The fueling operating procedures should be properly signed and dated by the responsible manager, distributed to the operators, retained in the organization files, and made available in the event an authorized government agency requests a review.
- Ensure that the local fire department (911) and the appropriate regional office of the Department of Ecology are immediately notified in the event of any spill entering the surface or ground waters. Establish a “call down list” to ensure the rapid and proper notification of management and government officials should any significant amount of product be lost off-site. Keep the list in a protected but readily accessible location in the mobile fueling truck. The “call down list” should also pre-identify spill response contractors available in the area to ensure the rapid removal of significant product spillage into the environment.
- Maintain in all fueling vehicles a minimum of the following spill cleanup materials that are readily available for use :
 - Non-water absorbents capable of absorbing 15 gallons of diesel fuel.
 - A storm drain plug or cover kit.
 - A non-water absorbent containment boom of a minimum 10 feet in length with a 12-gallon absorbent capacity.
 - A non-metallic shovel.
 - Two, five-gallon buckets with lids.
- Maintain and replace equipment on fueling vehicles, particularly hoses and nozzles, at established intervals to prevent failures.

Structural Source Control BMP. Automatic fuel transfer shut-off nozzles; and, an adequate lighting system at the filling point.

10. BMPs for Painting/Finishing/Coating of Vehicles/Boats/ Buildings/ Equipment

Description of Pollutant Sources. Surface preparation and the application of paints, finishes and/or coatings to vehicles, buildings, and/or equipment outdoors can be sources of pollutants. Potential pollutants include organic compounds, oils and greases, heavy metals, and suspended solids.

Pollutant Control Approach. Cover and contain painting and sanding operations and apply good housekeeping and preventive maintenance practices to prevent the contamination of stormwater with painting oversprays and grit from sanding.

Operational BMPs

- Train employees in the careful application of paints, finishes, and coatings to reduce misuse and over spray. Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly clean and temporarily store collected debris daily.
- Do not conduct spraying, blasting, or sanding activities over open water or where wind may blow paint into water.
- Wipe up spills with rags and other absorbent materials immediately. On dock areas sweep rather than hose down debris. If hosing is conducted, collect any hose water generated and convey to appropriate treatment and disposal. Do not hose down the area to a storm drain or receiving water or conveyance ditch to receiving water.
- Use a storm drain cover, filter fabric, or similarly effective run-off control device if dust, grit, washwater, or other pollutants may escape the work area and enter a catch basin. The containment device(s) must be in place at the beginning of the workday. Collect contaminated run-off and solids and properly dispose of such wastes before removing the containment device(s) at the end of the workday.
- Use a ground cloth, pail, drum, drip pan, tarpaulin, or other protective device for activities such as paint mixing and tool cleaning outside or where spills can contaminate stormwater.
- Properly dispose of all wastes and prevent all uncontrolled releases to the air, ground, or water.
- Clean brushes and tools covered with non-water-based paints, finishes, or other materials in a manner that allows collection of used solvents (e.g., paint thinner, turpentine, xylol) for recycling or proper disposal.
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater.

Structural Source Control BMPs. Enclose and/or contain all work while using a spray gun or conducting sand blasting and in compliance with applicable air pollution control, OSHA, and WISHA requirements. Do not conduct outside spraying, grit blasting, or sanding activities during windy conditions which render containment ineffective.

11. BMPs for Roof/ Building Drains at Manufacturing and Commercial Buildings

Description of Pollutant Sources. Stormwater run-off from roofs and sides of manufacturing buildings can be sources of pollutants caused by leaching of roofing materials, building vents, and other air emission sources. Vapors and entrained liquid and solid droplets/particles have been identified as potential pollutants in roof/building runoff. Metals, solvents, acidic/alkaline pH, BOD, and organics are some of the pollutant constituents identified.

Pollutant Control Approach. Evaluate the potential sources of stormwater pollutants and apply source control BMPs where practicable.

Operational Source Control BMPs

- If leachates and/or emissions from buildings are suspected sources of stormwater pollutants, then sample and analyze the stormwater draining from the building.
- If a roof/building stormwater pollutant source is identified, implement appropriate source control measures such as air pollution control equipment, selection of materials, operational changes, material recycle, and process changes.

12. BMPs for Soil Erosion and Sediment Control at Industrial Sites

Description of Pollutant Sources. Industrial activities on soil areas; exposed and disturbed soils; steep grading; etc., can be sources of sediments that can contaminate stormwater run-off.

Pollutant Control Approach. Limit the exposure of erodible soil, stabilize or cover erodible soil where necessary to prevent erosion, and/or provide treatment for stormwater contaminated with TSS caused by eroded soil.

Cover BMP Options

- Vegetative cover such as grass, trees, and shrubs on erodible soil areas, or
- Covering with mats such as clear plastic, jute, synthetic fiber, and/or
- Preservation of natural vegetation including grass, trees, shrubs, and vines.

Structural Practice Options

Consider biofilter, sedimentation basin, silt fence, gravel filter berm and proper grading. For other BMPs and design information, refer to Volume II of the SWMM (3)

13. BMPs for Spills of Oil and Hazardous Substances

Description of Pollutant Sources. Owners or operators of facilities engaged in drilling, producing, gathering, storing, processing, transferring, distributing, refining or consuming oil and/or oil products are required by federal law to have a spill prevention and control plan if the storage capacity of the facility, which is not buried, is 1,320 gallons or more of oil, or any single container with a capacity in excess of 660 gallons and which, due to its location, could reasonably be expected to discharge oil in harmful quantities, as defined in 40 CFR Part 110, into or upon the navigable waters of the United States or adjoining shorelines {40 CFR 112.1 (b)}. Onshore and offshore facilities, which, due to their location, could not reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines, are exempt from these regulations {40 CFR 112.1(1)(i)}. Owners of businesses that produce dangerous wastes are also required by state law to have a spill control plan (Appendix D.3). The federal definition of oil is oil of any kind or any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Pollutant Control Approach. Maintain, update, and implement an oil spill prevention/cleanup plan.

Operational BMPs. Industries that are required to prepare and implement an emergency spill cleanup plan shall implement the following:

- Prepare an emergency spill control plan, which includes:
 - A description of the facility including the owner's name and address.
 - The nature of the activity at the facility.
 - The general types of chemicals used or stored at the facility.
 - A site plan showing the location of storage areas for chemicals, the locations of storm drains, the areas draining to them, and the location and description of any devices to stop spills from leaving the site such as positive control valves.
 - Cleanup procedures.
 - Notification procedures to be used in the event of a spill, such as notifying key personnel. Agencies such as Ecology, local fire department, Washington State Patrol, and the local sewer authority, shall be notified.
 - The name of the designated person with overall spill cleanup and notification responsibility.
- Train key personnel in the implementation of the Emergency Spill Control Plan. Prepare a summary of the plan and post it at appropriate points in the building, identifying the spill cleanup coordinators, location of cleanup kits, and phone numbers of regulatory agencies to be contacted in the event of a spill;
- Update the spill control plan regularly;

14. BMPs for Storage of Liquid, Food Waste, or Dangerous Wastes in Containers

Description of Pollutant Sources. Steel and plastic drums with volumetric capacities of 55 gallons or less are typically used at industrial facilities for container storage of liquids and powders. The BMPs specified below apply to container(s) located outside a building used for temporary storage of accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock or cleaning chemical, or Dangerous Wastes (liquid or solid) unless the business is permitted by Ecology to store the wastes (Appendix D.4). Leaks and spills of pollutant materials during handling and storage are the primary sources of pollutants. Oil and grease, acid/alkali pH, BOD, COD are potential pollutant constituents.

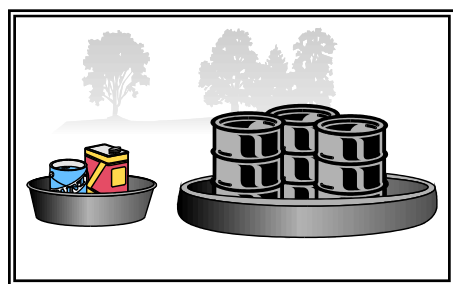


Figure 2.8
Secondary Containment
System

Pollutant Control Approach. Store containers in impervious containment under a roof or other appropriate cover, or in a building. For roll-containers (for example, dumpsters) that are picked up directly by the collection truck, a file can be placed on both sides of the curb to facilitate moving the dumpster. If a storage area is to be used on site for less than 30 days, a portable temporary secondary system like that shown in Figure 2.8 can be used in lieu of a permanent system as described above.

Operational BMPs

- Place tight-fitting lids on all containers.
- Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading of containers.
- Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers and replace and tighten bungs in drums as needed.
- Businesses accumulating dangerous wastes that do not contain free liquids need only to store these wastes in a sloped designated area with the containers elevated or otherwise protected from storm water run-on.
- Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage, or any unauthorized use (see Figure 2.9).
- If the material is a dangerous waste, the business owner must comply with any additional Ecology requirements. (Appendix D.3)
- Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (Appendix D.2).
- Cover dumpsters, or keep them under cover such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
- Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

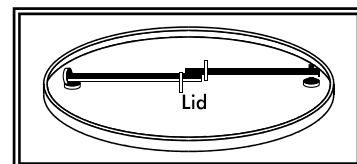


Figure 2.9
Locking System for Drum

Structural Source Control BMPs

- Keep containers with dangerous waste, food waste, or other potential pollutant liquids inside a building unless this is impracticable due to site constraints or Uniform Fire Code requirements.
- Store containers in a designated area, which is covered, bermed or diked, paved and impervious in order to contain leaks and spills (see Figure 2.10). The secondary containment shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.
- For liquid wastes, surround the containers with a dike as illustrated in Figure 2.10. The dike must be of sufficient height to provide a volume of either 10 percent of the total enclosed container volume or 110 percent of the volume contained in the largest container, whichever is greater, or, if a single container, 110 percent of the volume of that container.

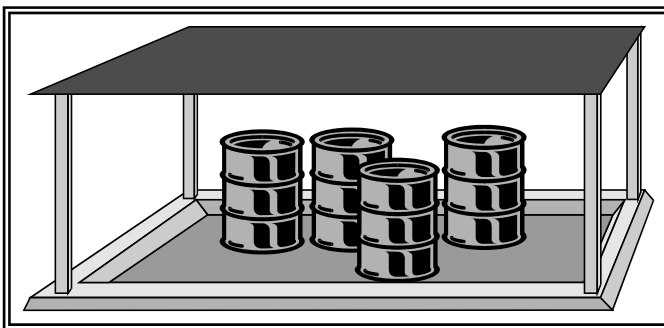


Figure 2.10 – Covered and Bermed Containment Area

Where material is temporarily stored in drums, a containment system can be used as illustrated, in lieu of the above system (see Figure 2.8).

- Place containers mounted for direct removal of a liquid chemical for use by employees inside a containment area as described above. Use a drip pan during liquid transfer

Treatment BMP, if required (See Section E.10.)

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local Sewer Authority, or to appropriate treatment such as an API or CP oil/water separator, catch basin filter, or other appropriate system (3, 4). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with fire codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.
- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

15. BMPs for Storage of Liquids in Permanent Above-ground Tanks

Description of Pollutant Sources. Above-ground tanks containing liquids (excluding uncontaminated water) may be equipped with a valved drain, vent, pump, and bottom hose connection. They may be heated with steam heat exchangers equipped with steam traps. Leaks and spills can occur at connections and during liquid transfer. Oil and grease, organics, acids, alkalis, and heavy metals in tank water and condensate drainage can also cause stormwater contamination at storage tanks.

Pollutant Control Approach. Install secondary containment or a double-walled tank. Slope the containment area to a drain with a sump. Stormwater collected in the containment area may need to be discharged to treatment such as an oil/water separator, or equivalent BMP (3, 4). Add safeguards against accidental releases including protective guards around tanks to protect against vehicle or forklift damage and tagging valves to reduce human error. *Tank water and condensate discharges are process wastewater that may need an NPDES Permit.*

Operational BMPs

- Inspect the tank containment areas regularly to identify problem components such as fittings, pipe connections, and valves, for leaks/spills, cracks, corrosion.
- Place adequately sized drip pans beneath all mounted taps and drip/spill locations during filling/unloading of tanks. Valved drain tubing may be needed in mounted drip pans.
- Sweep and clean the tank storage area regularly, if paved.
- Replace or repair tanks that are leaking, corroded, or otherwise deteriorating.
- All installations shall comply with the Uniform Fire Code (Appendix D) and the National Electric Code.

Structural Source Control BMPs

- Locate permanent tanks in impervious (Portland cement concrete or equivalent) secondary containment surrounded by dikes as illustrated in Figure 2.12, or UL approved double-walled tanks. The dike must be of sufficient height to provide a containment volume of either 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank, whichever is greater, or, if a single tank, 110 percent of the volume of that tank.
- Slope the secondary containment to drain to a dead-end sump (optional), or equivalent, for the collection of small spills.
- Include a tank overfill protection system to minimize the risk of spillage during loading.

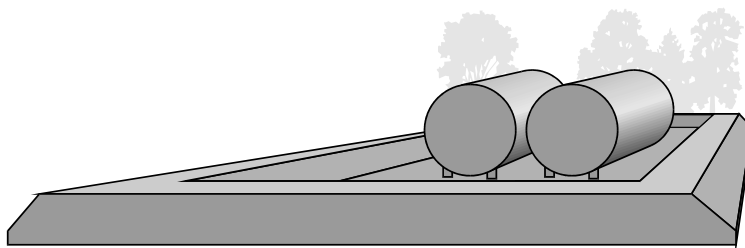


Figure 2.12 – Above-ground Tank Storage

Treatment BMPs, if required (See Section E.10.). If the tank containment area is uncovered, equip the outlet from the spill-containment sump with a shutoff valve, which is normally closed and may be opened, manually or automatically, to convey contaminated stormwater to approved treatment or disposal, or to convey uncontaminated stormwater to a storm drain. Evidence of contamination can include the presence of visible sheen, color, or turbidity in the runoff, or existing or historical operational problems at the facility. Use pH paper or meter for testing areas subject to acid or alkaline contamination.

Required Treatment BMP at Petroleum Tank Farms Convey stormwater contaminated with floating oil or debris in the contained area through an API or CP-type oil/water separator (3) or other approved treatment prior to discharge to storm drain or surface water.

16. BMPs for Outside Storage or Transfer of Solid Raw Materials, By-Products, or Finished Products

Description of Pollutant Sources. Solid raw materials, by-products, or products such as gravel, sand, salts, topsoil, compost, logs, sawdust, wood chips, lumber and other building materials, concrete, and metal products sometimes are typically stored outside in large piles, stacks, etc. at commercial or industrial establishments. Contact of outside bulk materials with stormwater can cause leachate, and erosion of the stored materials. Contaminants include TSS, BOD, organics, and dissolved salts (sodium, calcium, and magnesium chloride, etc).

Pollutant Control Approach. Provide impervious containment with berms, dikes, etc., and/or cover to prevent run-on and discharge of leachate pollutant(s) and TSS.

Operational BMPs

- Do not hose down the contained stockpile area to a storm drain or a conveyance to a storm drain or to a receiving water.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials.

Structural Source Control BMP Options. Choose one or more of the source control BMP options listed below for stockpiles greater than five cubic yards of erodible or water soluble materials such as soil, road deicing salts, compost, unwashed sand and gravel, and sawdust. Also included are outside storage areas for solid materials such as logs, bark, lumber, metal products, etc.

- Store in a building or paved and bermed covered area as shown in Figure 2.13, or,
- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material as illustrated (see Figure 2.14), or
- Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of uncontaminated stormwater and to collect and convey runoff to treatment. Slope the paved area in a manner that minimizes the contact between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.
- For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and at any catch basins as needed to prevent erosion and discharge of the stockpiled material offsite or to a storm drain. Ensure that contaminated stormwater is not discharged directly to catch basins without conveying through a treatment BMP.

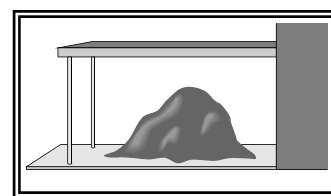


Figure 2.13
Covered Storage Area for Bulk Solids (include berm if needed)

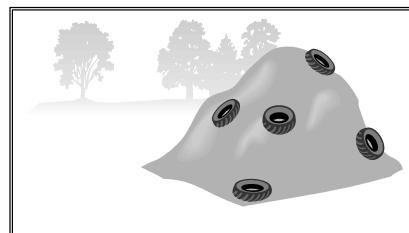


Figure 2.14
Material Covered with Plastic Sheeting

Treatment BMP, if required (See Section E.10.). Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

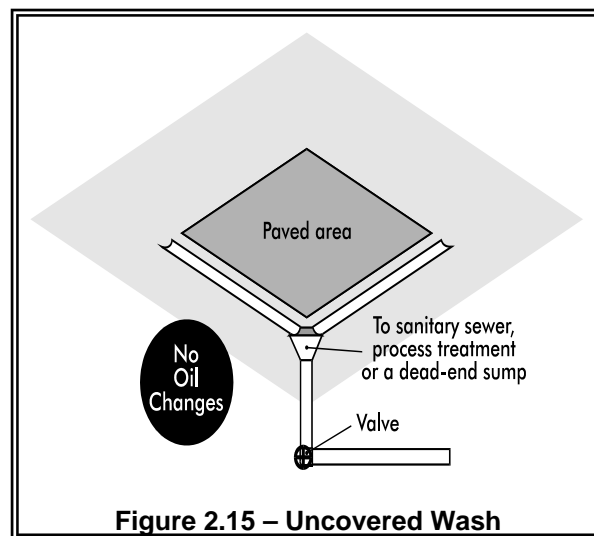
17. BMPs for Washing and Steam Cleaning Vehicles/ Equipment/ Building Structures

Description of Pollutant Sources. Washwater from cleaning activities can contain oil and grease, suspended solids, heavy metals, soluble organics, soaps, and detergents that can contaminate stormwater.

Pollutant Control Approach. The preferred approach to separate the uncontaminated stormwater from the pollutant sources is to cover and/or contain the cleaning activity, or conduct the activity inside a building. Wash water must be conveyed to industrial treatment or a sanitary sewer after approval by the local sewer authority; temporarily stored before proper disposal; or recycled, with no discharge to the ground, to a storm drain, or to surface water. Washwater may be discharged to the ground after proper treatment in accordance with *Ecology guidance WQ-95-056, "Vehicle and Equipment Washwater Discharges," June 1995*. The quality of any discharge to the ground after proper treatment must comply with Ecology's Ground Water Quality Standards, Chapter 173-200 WAC. Contact the local Ecology regional office for an NPDES Permit application for discharge of washwater to surface water or to a storm drain after on-site treatment.

Structural Source Control BMPs

- Conduct vehicle/ equipment washing in a building or under a roof , with washwater draining to industrial treatment facility or a sanitary sewer, if approved by the local sewer authority,
 - Conduct outside washing operation in a designated wash area as follows:
 - Conduct washing on a paved spill containment pad to prevent the run-on of stormwater from adjacent areas. Slope the spill containment area so that washwater is collected in a containment pad drain system with perimeter drains, trench drains or catchment drains. Size the containment pad to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed.
 - Convey the washwater to a sump (like a grit separator) and then to a sanitary sewer (if allowed by the local Sewer Authority), or industrial wastewater treatment, or recycle system. An NPDES permit would be required for any washwater discharge to a storm drain or receiving water after treatment. Contact the Ecology regional office for NPDES Permit requirements.
 - For discharge to a sanitary sewer, the containment sump must have a positive control outlet valve for spill control with live containment volume and oil/water separation. Size the minimum live storage volume to contain the maximum expected daily washwater flow plus the sludge storage volume below the outlet pipe. The outlet valve will be shut during the washing cycle to collect the washwater in the sump. The valve should remain shut for at least two hours following the washing operation to allow the oil and solids to separate before discharge to a sanitary sewer.
- (See Ecology Publication WQ-95-056)The inlet valve could be closed when washing is not occurring, thereby preventing the entry of uncontaminated stormwater into the pretreatment/ treatment system. The stormwater can then drain into the conveyance/ discharge system outside of the wash pad (essentially bypassing the wash water treatment/conveyance system). Post signs to inform operating personnel of the operation and purpose of the valve. Clean the concrete pad thoroughly until there is no foam or visible sheen in the washwater prior to closing the inlet valve and allowing uncontaminated stormwater to bypass (overflow and drain off) the pad. (Figure 2.15)
- For uncovered wash pads, the positive control outlet valve may be manually operated, but an automatic pneumatic or electric valve system is preferable. The valve may be on



a timer circuit to be opened on completion of a wash cycle. The timer would then close the valve after the sump or separator is drained (Figure 2.15).

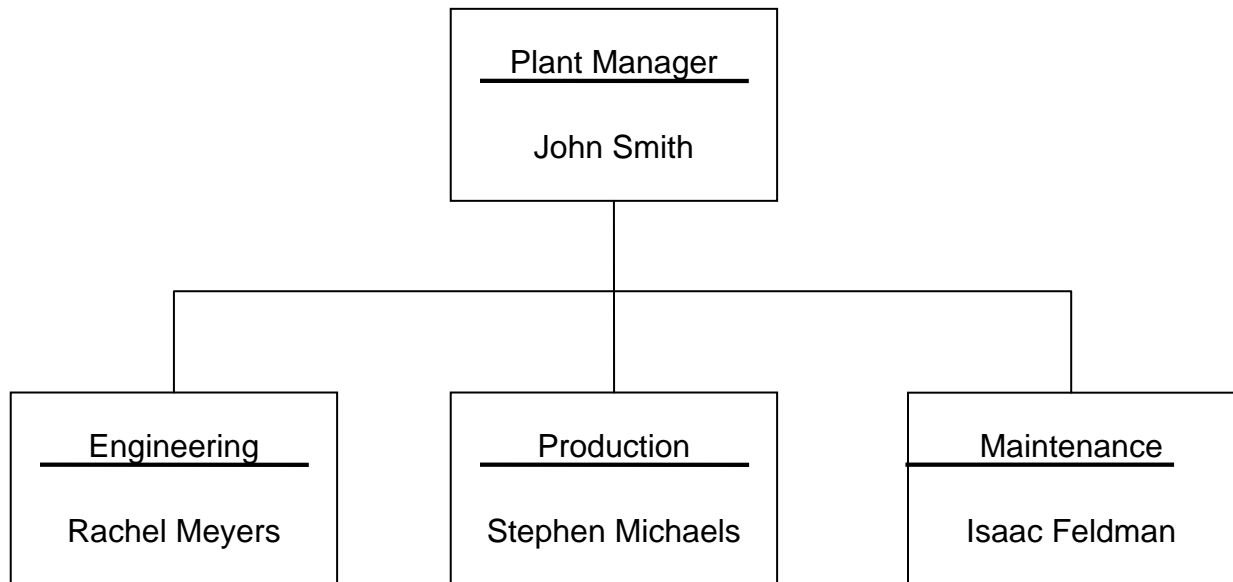
- Because soluble/emulsifiable detergents can be used in the wash medium, the selection of soaps and detergents and treatment BMPs should be considered carefully. *Oil/water separators are ineffective in removing emulsified or water soluble detergents.*

Appendix B

Example of an Industrial SWPPP

A-B-C Metals
40 Wonka Drive
Anytown, OK 12345
January 31, 2003

POLLUTION PREVENTION TEAM ORGANIZATION CHART



A-B-C Metals

Initial Preliminary SWPPP Checklist

- _____ Identify areas where other potential pollutants spills may occur besides oil.
- _____ Conduct visual observations for flows, odors, oil sheens, or other abnormal conditions.
- _____ Review material handling procedures, storage, cleanup equipment.
- _____ Implement maintenance schedule for all treatment systems, storm drains, catch basins, and plant equipment that may contaminate stormwater.
- _____ Identify materials and equipment exposed to stormwater.
- _____ Place dumpsters under cover or with a lid; assure no leaching from bottom.
- _____ Implement good housekeeping procedures for entire site.
- _____ Implement training for all employees in the industrial area.
- _____ Conduct a wet season (October 1 - April 30) and dry season (July, August, September) inspection annually to verify that no illegal discharges go to storm drains.
- _____ Implement source control best management practices (BMPs) for fueling station, vehicle equipment, loading and unloading areas, dangerous waste material and outside storage of materials.
- _____ Prepare SWPPP implementation schedule and milestone dates.
- _____ Review the SWPPP for adequacy of existing BMPs.
- _____ Always have SWPPP and related permit documents available for inspectors from state and local governments.
- _____ Plan to call Ecology staff person cited in the stormwater permit coverage letter whenever technical assistance is needed for water quality issues for the facility.

A-B-C Metals

Stormwater Pollution Prevention Plan Comparison with Spill Control Plan

A-B-C Metals Company has implemented a spill prevention plan for its above ground fuel storage tank. Overlaps are noted below:

Isaac Feldman is the spill coordinator and reports directly to John Smith. He will be the stormwater spill prevention and response coordinator.

A complete description of potential for oil to contaminate stormwater discharges including quantity of oil that could be discharged.

Curbing around above ground fuel storage tank identified on site map.

Expanded spill plan schedules and procedures to include SWPPP requirements.

Incorporated spill plan training into stormwater training programs on spill prevention and response.

Relevant portions of the spill plan will be included in this SWPPP.

A-B-C Metals 40 Wonka Drive Anytown, OK 12345 October 31, 2002	
Stormwater Pollution Prevention Plan (SWPPP)	
Emergency Contact: John Smith	Work Phone: (101) 555-1234
Title: Plant Manager	Emergency Phone: (101) 555-6929
Secondary Contact: Rachel Meyers	Work Phone: (101) 555-3923
Title: Engineering Supervisor	Emergency Phone: (101) 555-6789
Type of Manufacturer: Metal Fabrication	Startup Date: October 31, 2002
Operating Schedule: 8:00 a.m. - 11:30 p.m.	
Number of Employees: The plant has 21 employees, including part time staff. Shifts overlap all day.	
Average Wastewater Discharge:	
NPDES Permit Number: SO3999911 Effective: September 22 2002	
SWPPP Implemented:	

Pollution Prevention Team	Worksheet #1
	Completed by: <u>John Smith</u>
	Title: <u>Plant Manager</u>
	Date: <u>October 31, 2002</u>
Responsible Official: _____ Title: <u>Plant Manager</u> Team Leader: <u>John Smith</u> Office Phone: <u>(101) 555-1234</u> Responsibilities: Signatory authority; coordinate all stages of plan development and implementation; coordinate employee training program; keep all records and ensure reports are submitted. _____ _____	
(1) <u>Stephen Michaels</u> Title: <u>Production Supervisor</u> Office Phone: <u>(101) 555-3923</u> Responsibilities: <u>Note any process changes; help conduct inspections.</u> _____ _____	
(2) <u>Rachel Meyers</u> Title: <u>Environmental Engineering Dept. Supervisor</u> Office Phone: <u>(101) 555-5870</u> Responsibilities: <u>Responsible for implementing the pollution prevention maintenance program; oversee inspections.</u> _____ _____	
(3) <u>Isaac Feldman</u> Title: <u>Maintenance Dept. Supervisor</u> Office Phone: <u>(101) 555-0482</u> Responsibilities: <u>Mr. Feldman is the spill response coordinator; oversees "good housekeeping."</u> _____ _____	
(4) <u>Group Activities</u> Title: _____ Office Phone: _____ Responsibilities: <u>Developing the SWPPP elements, choosing stormwater management options.</u> _____ _____ _____	

Material Inventory					Worksheet #2 _____			
					Completed by: <u>John Smith</u>			
					Title: <u>Plant Manager</u>			
					Date: <u>January 31, 2003</u>			
List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred during the three years prior to the effective date of the permit. (Including any pollutants no longer handled on-site.)								
Material	Purpose/Location	Quantity (Units)			Exposed Since Nov. 89 (Yes/No)	Likelihood of contact With stormwater. If Yes, describe reason	Past Spill or Leak	
		Used	Produced	Stored			Leak	
		(indicate per/wk. or yr.)					Yes	No.
Machine oil	Truck unloading area	20 gal/wk	—	80 gal/ wk	No	Truck loading/unloading area outside and possible		✓
						Exposure with ruptured drums		
Gasoline	Truck fueling	80 gal/wk	—	300 gal/wk	Yes	Leaking valve overfilling fuel tanks	✓	
Motor oil	750 gal above grd tank	20 gal/wk	—	—	No	Possible exposure in event of defective tank or		
						Transfer of materials from tanks to containers		

Description of Exposed Significant Material			Worksheet #3A _____	
			Completed by: <u>John Smith</u>	
			Title: <u>Plant Manager</u>	
			Date: <u>January 31, 2003</u>	
Based on your material inventory, list significant materials that have been exposed since November 18, 1989, and/or are currently exposed.				
List of Exposed Significant Materials	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of storage, handling, treatment, or disposal (e.g., sealed drum standing outside, or covered pile, drum, tank)
Machine oil	12/7/ 2002	10 gal	Storage bldg tank #2	50 gallon tanks (2)

List of Significant Spills and Leaks

Worksheet #4

Completed by: John Smith

Title: Plant Manager

Date: January 31, 2003

List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants since November 18, 1989, that were significant. Significant spills and leaks include but are not limited to, release of oil or hazardous substances in excess of reportable quantities (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.

Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Storm- water (Yes/No)	
12/21/2002	Storage bldg	Oil	10 gal	Tank #2	Leaky valve	8 gal – balance	Yes	Complete the installation of
						contained and mopped		Curbing around tank Have “kitty” litter available

**Non-Stormwater Discharge
Dry Weather (July, August, September)
Assessment and Certification**

Worksheet #5

Completed by: Rachel Meyers _____

Title: Engineering Dept – Supervisor _____

Date: December 31, 2003 _____

The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, non-contact cooling water, or process wastewater (including *leachate*) to the *stormwater drainage system*.

Tests may include: visual observations of flows, odors, and other abnormal conditions; dye tests, television line surveys; and/or analysis and validation of accurate piping schematics.

Date	Discharge Location (as indicated on the site map)	Method used to test or Evaluate Discharge	Describe Results from Test for Presence of Non- Stormwater Discharge	Identify Potential Significant Sources	Person who Conducted The Test
7/21/03	001	Visual inspection	No discharge observed		R. Meyers and S. Goodhope
9/20/03	001	Visual inspection	Significant flow; oil	Vehicle wash ongoing at time	R. Meyers and S. Goodhope
12/1/03	001	Visual inspection	Small amount of clear discharge	Suspected to be delayed stormwater drainage from storm that occurred 8/30/98	R. Meyers and S. Goodhope

CERTIFICATION

Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Title: Cheryl Glenn, Plant Manager

B. Phone: (101) 555-1239

C. Signature: Cheryl Glenn

D. Date Signed: 1/31/03

<p><u>FIELD NOTEBOOK</u></p> <p>For Non-Stormwater Discharge Inspections</p>	<p><u>Inspection Team:</u></p> <p>R. Meyers</p> <p>S. Goodhope</p>
<p>Completed by: Rachel Meyers Date: 7/21/03 Time: 10:50 a.m. Time since last rain: 42 hours Quantity of last rain: 0.12 inches Flow observed: No</p> <p style="text-align: right;">Signature: <i>Rachel Meyers</i></p>	
<p>Completed by: Rachel Meyers Date: 9/20/03 Time: 3:20 p.m. Time since last rain: 5 days Quantity of last rain: 0.5 inches Flow observed: Yes Description: No odor; clear color (soap suds); oily sheen; some sediment Temperature: cold (37.5°F) Volume: Collected ten gallons/minute in buckets This was the source of the flow.</p> <p style="text-align: right;">Signature: <i>Rachel Meyers</i></p>	
<p>Completed by: Rachel Meyers Date: 12/1/03 Time: 12:15 p.m. Time since last rain: 96 hours Quantity of last rain: 2.5 inches Flow observed: Yes Description: No odor; clear; some sediments; few small pieces of paper (trash) Temperature: Cold (42.3°F) Volume: Collected one gallon in 5 minutes Comments: We suggest that the flow was left over from storm that occurred on 8/30/98 (4 days ago)</p> <p style="text-align: right;">Signature: <i>Rachel Meyers</i></p>	

A-B-C Metals

Site Assessment Inspection

December 31, 2003

Evaluate the site for pollutants.

There are eight areas where material handling and storage activities take place.

- The storage building contains tanks of oils, lubricants, solvents, and acids. The tanks were examined for possible leaks. We found that the valve on the oil tank #2 was faulty and had leaked approximately 10 gallons of oil. Although this leak occurred on 9/21/03, the faulty valve was not discovered until now. All other tanks are secure. Areas around the tanks were swept clean to determine if leaks or spills were prevalent.
- The solvent storage tanks were then examined for leaks or exposure. Upon closer examination, it was found that the number 1 tank was leaking a small amount of lubricant to the drainage system. This leak may be the reason for the high concentration of biochemical oxygen demand found in the sample taken from the stormwater discharge. The tank was temporarily fixed to ensure that no further contamination would result. A replacement tank was ordered on 9/28/03, and was expected to arrive within 30 business days. The tanks shall be examined on a daily basis to further prevent possible exposure to the stormwater collection system and receiving stream.
- We inspected the fueling station to see if there were any leaks. The general area surrounding the fueling station was clean but we observed gasoline and motor oil drips during fueling. In accordance with standard operating conditions, facility personnel hose down the area during vehicle washing and the drain is connected to the storm sewer. We detected this connection on 9/20/03 during one of the non-storm water discharge assessment visual inspections. Since this discharge is not allowed under our general permit, we are in the process of submitting a separate permit application specifically for the discharge of vehicle wash water to the municipal wastewater treatment plant.
- We examined the fueling station which is adjacent to the vehicle washing area. Vehicle washing cleaners are used here and any empty or open containers were removed from the area.
- We next looked at the loading and unloading docks where raw materials and various cleansers are delivered. The transfer of goods from incoming trucks to storage areas is a source of pollution. Although no problems were noticed, the pollution prevention team has developed a spill prevention and response plan to clean up spills quickly and report them if necessary. An overhead roof is planned in order to protect the loading and unloading of materials.

Describe existing management practices.

Grass was lightly planted around the parking lot after recent construction. The fuel storage tank has curbing around it in accordance with our SPCC plan. Also, the maintenance crew regularly picks up trash and empty containers from around the storage tanks, loading and unloading areas, and the vehicle washing areas. Used oils are collected in containers and taken to a recycling facility. In addition, we installed two oil/water separators at the drains into our underground storm sewer leading to the Rocky River. These separators are indicated on the site map.

A-B-C Metals

Sampling Data

Date of Sampling	9/20/03
Outfall Sampled	001
Type of Storm	1 inch light rainfall (lasted 2 days)
Type of Samples	Grab samples taken during first hour of flow

Data		
Parameter	Quantity	Sample Type
Zinc	22.0 ug/L	Grab
turbidity	100 NTU	Grab
pH	7.2 s.u.	Grab
Oil and grease	50.0 mg/L	Grab

The pollution prevention team is considering possible potential sources of turbidity and oil. We will look at storage areas housing oils, lubricants, acids, pesticides, and fertilizers. If additional source control methods do not reduce turbidity and oil and grease below the benchmark values of 25 NTUs and 15 mg/L respectively, treatment methods will be considered. Sampling will be conducted during the storm event following the implementation of the new source control BMPs.

A-B-C Metals

Summary of Pollutant Sources

January 31, 2003

Based on the site assessment inspection conducted on 1/25/03, the pollution prevention team identified four potential sources of pollutants:

- Oil and grease stains on the pavement in the fueling area indicate oil and grease may be picked up by stormwater draining to the storm sewer. This area drains into the storm sewer leading to the Rocky River.
- Sediment and erosion potential in the field below the employee parking lot because of thinly planted grass.
- Potential for spills or leaks from oil storage tanks, including the fuel storage tank, based on a spill that occurred on 12/21/02 and the leak that was detected in the oil storage tank. These pollutants would drain into the piped outfall into the Rocky River.
- Use of a toxic cleaning agent may result in a pollution problem if handled improperly.

A-B-C Metals

Description of Stormwater Management Measures Taken Based on Site Assessment Phase

January 31, 2003

These measures correspond to the pollutant sources identified on the preceding page.

Oil and grease from fueling area.

We installed drip pads around the fuel pumps to pick up spilled gas and oil during truck refueling. These will be inspected regularly to make sure they are working well. Drip pads will be disposed of properly.

Sediment and erosion in the field below the employee parking lot.

We planted grass in this area to reduce potential for erosion.

Leaks/spills from oil storage tanks.

We are in the process of installing curbing around the outdoor oil storage tanks that will contain the volume of the largest tank in case a spill should occur. The spill response team has developed procedures to clean up this area should a spill occur. We are incorporating spill response procedures from our SPCC plan.

Toxic cleaning agent.

We have discontinued the use of this agent and are replacing it with a non-toxic cleaning agent.

Plan to Consider Treatment

After implementing additional source control BMPs, sampling will be conducted during the next three consecutive storms to determine if the turbidity and the oil and grease levels have been reduced below benchmark values. If the turbidity and oil and grease concentrations continue to be above benchmark levels, the installation of a treatment facility will be considered.

Pollutant Source Identification	Worksheet #6	
	Completed by: John Smith	
	Title: Plant Manager	
	Date: January 31, 2003	
List all potential stormwater pollutants from materials handled, treated, or stored on-site.		
Stormwater Pollutant Source	Existing Management Practices	Description of New BMP Options
1. Oil and grease on pavement in fueling area	Oil and water separators installed in stormwater drain	Install drip pads
2. Erosion in field below employee parking lot	Planted some grass after construction, grassed swales along Wonka Drive	Plant more grass
3. Potential for spills from oil storage tanks (leak detected in oil tank #1 and past spill on 5/10/98)	Curbing around fuel storage tank (see SPCC plan)	Replace oil tank #1, replace valve on oil tank #2, install curbing around other outside tanks, spill prevention response plan, inspection
4. Use of toxic cleaning agent.		Use non-toxic cleaning agent
5. Trash in loading/unloading fueling areas	Regular trash pickup (daily) by maintenance crew, collect and recycle used oil.	Train staff in good housekeeping practices.

Additional BMP Identification	Worksheet #7A _____
	Completed by: <u>John Smith</u>
	Title: <u>Plant Manager</u>
	Date: <u>January 31, 2003</u>
<p>Describe any treatment and emerging technologies that are required to address existing and potential pollutant sources identified in Worksheet 3, 4, and 5. These are BMPs needed to prevent the discharge of significant amounts of pollutants despite implementation of operational and source control BMPs.</p>	
BMPs	Brief Description of Activities or Improvements
Additional BMPs	Order non-toxic cleaning agent.
Emerging Technologies	

Minimum BMP Identification	Worksheet #7 _____
	Completed by: <u>John Smith</u>
	Title: <u>Plant Manager</u>
	Date: <u>January 31, 2003</u>
Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5. The description shall include the following minimum requirements.	
BMPs	Brief Description of Activities or Improvements
Good Housekeeping	Collect and recycle used oil; regular trash pickup; train staff in basic cleanup procedures (sweeping loading and unloading areas, etc.)
Preventive Maintenance	Daily inspection of outside oil tanks; replace faulty valve on oil tank #2; replace leaking oil tank #1.
Spill Prevention and Emergency Cleanup	Install curbing around outside oil storage tanks; fuel tank has curbing, install drip pads at fueling station.

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1.		
	2.		
	3		
	4.		
	5.		
	6.		
Erosion and Sediment Control	1. Plant grass around new parking area.		
	2.		
	3.		
Management of Runoff Emerging technologies	1. Grassed swales along Wonka Drive, (2) oil/water separators in storm drain system		
	2.		
	3.		
	1.		
	2.		
	3.		
	4.		

A-B-C Metals

Employee Training Program

1. For line workers, maintenance crew, and shipping and receiving crew

Employee meetings held the first Monday of each month to discuss:

- Any environmental/health and safety incidents
- Upcoming training sessions
- Brief reminders on good housekeeping, spill prevention and response procedures, and material handling practices.
- Announce any changes to the SWPPP
- Announce implementation of new management practices.

In-depth pollution prevention training for new employees during first month

Refresher courses held every 6 months (October and March) addressing:

Good Housekeeping

- Review and demonstrate basic cleanup (sweeping and vacuuming) procedures.
- Clearly indicate proper disposal locations and review recycling program.
- Post signs in materials handling areas reminding staff of good housekeeping procedures.
- Be sure employees know where routine clean-up equipment is located.

Spill Prevention and Response

- Clearly identify potential spill areas and drainage routes.
- Familiarize employees with past spill events – why they happened and the environmental impact (use slides).
- Post warning signs in spill areas with emergency contacts and telephone numbers.
- Introduce Isaac Feldman as the spill response coordinator and introduce his “team.”
- Drill on spill clean-up procedures.
- Post the locations of spill clean-up equipment and the persons responsible for operating the equipment.

Materials Handling and Storage

- Be sure employees are aware which materials are hazardous and where those materials are stored.
- Review sources of stormwater contamination.
- Demonstrate how valves are tightly closed and how drums should be sealed.
- Show how to fuel vehicles and avoid “topping off.”
- Remind employees to use drip pans in fueling area.

2. For Annual training of P2 Team:

- Review SWPPP
- Review pollutant sources and existing BMPs and discuss any problems with BMPs
- Review sampling and visual inspection procedures and any problems
- Discuss need for improvements and changes to SWPPP

BMP Implementation		Worksheet #8	
		Completed by: Cheryl Glenn	
		Title: Plant Manager	
		Date: January 31, 2003	
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation...			
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Good Housekeeping	1. Develop training program	1/15/03	Glenn
	2. Conduct training	1/15/03	Glenn
	3.		
Preventive Maintenance	1. Replace valve on oil tank #2	3/15/03	Feldman
	2. Install new oil tank #2	6/30/03	Feldman
	3.		
	4.		
Spill Prevention and Emergency Cleanup	1. Install curbing around oil storage tanks	6/30/03	Meyers
	2. Install drip pads	1/15/03	Feldman
	3. Develop/implement spill prevention/response training	1/15/03 – Develop; 1/31/03 - Train	Feldman
Inspections	1. Develop inspections schedule	12/31/02	Glenn
	2.		

Employee Training	Worksheet #9		
	Completed by: Cheryl Glenn		
	Title: Plant Manager		
	Date: 10/31/02		
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response	Locate spill areas by signs; drill spill response procedures; show slides of past spills.	December/June	Maintenance/shipping and receiving
Good Housekeeping	Demonstration; post signs at disposal sites.	December/June	Maintenance/shipping and receiving
Material Management Practices	Introduce hazardous materials labels; discuss recycling.	December/June	Line workers/shipping and receiving/maintenance
Other Topics	Environmental/health incidents; reminders of pollution prevention plan issues.	First Monday of each month	All employees.
Communication Channels			

Appendix C

Blank Forms for Development of the SWPPP

(Note: Use these forms or create your own.)

Pollution Prevention Team	Worksheet #1 Completed by: _____ Title: _____ Date: _____
<div>Responsible Official: _____ Title: _____</div> <div>Team Leader: _____ Office Phone: _____</div> <div>Responsibilities:</div> <div>_____</div> <div>_____</div> <div>_____</div>	
<div>(1) _____ Title: _____</div> <div>Office Phone: _____</div> <div>Responsibilities:</div> <div>_____</div> <div>_____</div> <div>_____</div>	
<div>(2) _____ Title: _____</div> <div>Office Phone: _____</div> <div>Responsibilities:</div> <div>_____</div> <div>_____</div> <div>_____</div>	
<div>(3) _____ Title: _____</div> <div>Office Phone: _____</div> <div>Responsibilities:</div> <div>_____</div> <div>_____</div> <div>_____</div>	

Material Inventory				Worksheet #2 _____ Completed by: _____ Title: _____ Date: _____				
List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred during the three years prior to the effective date of the permit. (Including any pollutants no longer handled on-site.)								
Material	Purpose/Location	Quantity (Units)			Exposed Since Nov. 89 (Yes/No)	Likelihood of contact With stormwater. If Yes, describe reason	Past Spill or Leak	
		Used	Produced	Stored			Leak	
		(indicate per/wk. or yr.)					Yes	No.

Description of Exposed Significant Material				Worksheet #2A_____
				Completed by:_____
				Title:_____
				Date:_____
Based on your material inventory, list significant materials that have been exposed since November 18, 1989, and/or are currently exposed.				
List of Exposed Significant Materials	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of storage, handling, treatment, or disposal (e.g., sealed drum standing outside, or covered pile, drum, tank)

Potential Pollutant Source Identification

Worksheet #3 _____

Completed by: _____

Title: _____

Date: _____

List all potential stormwater pollutants from materials handled, treated, or stored on-site.

Potential Stormwater Pollutant	Stormwater Pollutant Source	Likelihood of pollutant being present in your stormwater discharge. If yes, explain

List of Significant Spills and Leaks

Worksheet #4 _____

Completed by: _____

Title: _____

Date: _____

List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants that were significant after the date of three years prior to the effective date of this Permit. Significant spills and leaks include but are not limited to, release of oil or hazardous substances in excess of reportable quantities (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.

Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Storm- water (Yes/No)	

Identify Areas Associated With Industrial Activity		Worksheet #5 _____
		Completed by: _____
		Title: _____
		Date: _____
List areas and activities, not included on Worksheets 2, 2A, and 3, which may be sources of pollution. Discuss the potential of these areas and activities as potential pollutant sources and identify any pollutant that may be generated by that activity...		
Industrial Area or Activity	Potential Stormwater Pollutant from Area or Activity	Likelihood of being present in your stormwater discharge. If yes, describe reason.

Non-Stormwater Discharge Dry Weather (July, August, September) Assessment and Certification			Worksheet #6 _____ Completed by: _____ Title: _____ Date: _____		
<p>The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, non-contact cooling water, or process wastewater (including <i>leachate</i>) to the <i>stormwater drainage system</i>. Such discharges, if illicit, must be eliminated within 30 days, or application submitted to Ecology for a NPDES Permit.</p> <p>Tests may include: visual observations of flows, odors, and other abnormal conditions; dye tests, television line surveys; and/or analysis and validation of accurate piping schematics.</p>					
Date	Discharge Location (as indicated on the site map)	Method used to test or Evaluate Discharge	Describe Results from Test for Presence of Non-Stormwater Discharge	Identify Potential Significant Sources	Person who Conducted The Test

CERTIFICATION (Other certification document may be used as required in Section S4 of the Permit)

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

A. Name and Title	B. Phone:
C. Signature	D. Date Signed

Non-Stormwater Discharge Assessment and Failure To Certify Notification	Worksheet #7 _____ Completed by: _____ Title: _____ Date: _____	
<p>If you cannot feasibly evaluate the entire stormwater drainage system, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.</p> <p>List all outfalls or storm drains tested or evaluated, describe any potential sources of non-stormwater pollution from listed outfalls or drains, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.</p>		
Identify Discharge Location Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Sources of Non-Stormwater Pollution
CERTIFICATION (Other certification document may be used as required in Section S4 of the Permit)		
I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information. <i>Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>		
A. Name and Title	B. Phone:	
C. Signature	D. Date Signed	

Minimum BMP Identification		Worksheet #8 _____
		Completed by: _____
		Title: _____
		Date: _____
Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5. The description shall include the following minimum requirements.		
BMPs	Brief Description of Activities or Improvements	
Good Housekeeping		
Preventive Maintenance		
Spill Prevention and Emergency Cleanup		

BMPs	Brief Description of Activities or Improvements
Inspections	
Source Control BMPs	
Erosion and Sediment Control BMPs (if applicable)	

BMP Implementation		Worksheet #9 _____ Completed by: _____ Title: _____ Date: _____	
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.			
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Good Housekeeping	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
Preventive Maintenance	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
	4. _____	_____	_____
Spill Prevention and Emergency Cleanup	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
Inspections	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
Erosion and Sediment Control	1.		
	2.		
	3.		
	4.		
Treatment BMPs	1.		
	2.		
	3.		
	4.		
Emerging technologies	1.		
	2.		
Flow Control BMPs	3.		
	4.		

Employee Training		Worksheet #10 _____	
		Completed by: _____	
		Title: _____	
		Date: _____	
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
1.) LINE WORKERS			
Spill Prevention and Response			
Good Housekeeping			
Material Management Practices			
2.) P2 TEAM:			
SWPPP Implementation			
Monitoring Procedures			

RECORD OF VISUAL INSPECTIONS of STORMWATER DISCHARGES	Worksheet #11	
	Completed by *: _____	
	Title: _____	
	Date: _____	
* Must be conducted by qualified person identified in the SWPPP.		

List observed pollutants in all discharges and carefully assess the pollutant sources and action steps needed to control the pollutants. Record pollutant sources/generating activities, BMP adequacy, site map, and other facility information on Worksheets 1-9, inclusive.

Date	Surface Discharge ID	Ground Discharge ID	List of observed pollutants and descriptions of intensities of each. Include floatables, oil sheen, discoloration, turbidity, odor, etc. in the SW	Recommended Action Steps

Certification (Other certification document may be used as required in Section S4 of the Permit)

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

Name _____ Title _____ Signature _____

Date Signed _____

Appendix D

Other Requirements that Could Impact Stormwater Pollutants

1. Stormwater Discharges to Public Sanitary Sewers, Septic Systems, Sumps and Process Treatment: (Chapter 173-216 WAC (State Waste Water Discharge Permit Program) and Federal Regulations 40 CFR Part 403.5 (National Pretreatment). Discharges to Municipal Separate Storm Sewer System. Industrial facilities that discharge stormwater through a large or medium municipal separate storm sewer system (serves a population of 100,000 or more) must notify the municipality. The following are telephone numbers of the larger municipalities:

Seattle, (206) 684-7589; King County, (206) 296-6519; Tacoma, (253) 591-5588; Pierce County, (253) 596-2725; Snohomish County, (425) 388-3464; Spokane City, (509) 625-4600; Spokane County (509) 456-3600.
2. Uniform Fire Code Requirements: Uniform Fire Code, International Conference of Building Officials and the Western Fire Chiefs Association, ISSN 0-896-9736. Uniform Fire Code Standards, National Fire Protection Association. National Electric Code, National Fire Protection Association. NPPA 30A Automotive and Marine Service Station Code, American National Standard Institute and the National Fire Protection Association.
3. Ecology Requirements for Generators of Dangerous Wastes (Chapter 173-303 WAC) and *Step by Step: Fact Sheets for Hazardous Waste Generators*, publication 91-12, available from Ecology's Public Information Office.
4. Minimum Functional Standards for Containers: Chapter 173-304 WAC or Chapter 173-350 WAC.
5. Coast Guard Requirements for Marine Transfer of Petroleum Products Federal regulations 33 CFR Parts 153, 154 and 155 cover.
6. USEPA/Ecology Emergency Spill Cleanup Requirements, SPCC: 40 CFR Part 112 and WAC 173-303-350.
7. WSDA Pesticide Regulations: Washington Pesticide Control Act (Ch. 15.58 RCW), Washington Pesticide Application Act (Ch. 17.21 RCW), and regulations under Ch. 16-228 WAC. Useful publications include *Hazardous Waste Pesticides: A Guide for Growers, Applicators, Consultants and Dealers*, Ecology publication 89-41, August 1989 and *Suspended, Cancelled and Restricted Pesticides*, USEPA Region 10, Seattle, 1-800-424-4372.
8. Air Quality Regulations The Northwest Air Pollution Agency covers Whatcom, Island and San Juan counties. The Puget Sound Air Pollution Control Agency covers Snohomish, King and Pierce counties. The Olympic Air Pollution Control Authority covers Clallam, Jefferson, Mason and Thurston counties. The Puget Sound Air Pollution Control Authority (PSAPCA).
9. Ecology Waste Reduction Program: Chapter 70.95C RCW, Chapter 173-07 WAC.
10. Water Pollution Control: Chapter 90.48 RCW.
11. Water Quality Standards for Ground Waters of the State of Washington: Chapter 173.200 WAC.
12. Water Quality Standards for Surface Waters of the State of Washington: Chapter 173.201A WAC.

Appendix E

Transfer of Ownership of Stormwater General Permit(s) For Industrial Facilities

WAC 173.226.210 Transfer of permit coverage. Coverage under a general permit is automatically transferred to a new discharger if:

- (1) A written, signed agreement between the old and new discharger containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the director; and
- (2) The director does not notify the old and new discharger of the director's intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the agreement mentioned in subsection (1) of this section.

Answer only the questions which apply:

Yes No

- ☐ ☐ Will any of the activities change at the facility or construction site? If yes, explain.

(Attach sheet if additional explanation necessary)

- ☐ ☐ Is the facility or construction site currently out of compliance with the stormwater permit (including non-payment of permit fees)? If yes, explain _____

(Attach sheet if additional explanation necessary.)

- ☐ ☐ Has the Department of Ecology determined that the owner of the facility must obtain an individual National Pollutant Discharge Elimination System (NPDES) or industry-specific general permit?

- ☐ ☐ If the facility has an individual or industry-specific general NPDES permit, has that permit been revised to include stormwater discharges?

The new owner shall complete and submit a new Notice of Intent. Post the current permit number and mark the Change of Information box in the upper right hand corner of the application.

Permit Number: SO3-_____

Facility Name _____

Location: _____



This document will be considered incomplete unless both the previous owner/representative and new owner/representative sign it.

Previous Owner Information:	
Company Name:	_____
Mailing Address:	_____
Telephone No:	(____) ____ - _____
Owner/Company Representative's Name:	_____
	Printed Name/Title
Owner/Company Representative's Name:	_____
	Signature

New Owner Information:	
Company Name:	_____
Mailing Address:	_____
Telephone No:	(____) ____ - _____
Owner/Company Representative's Name:	_____
	Printed Name/Title
Owner/Company Representative's Name:	_____
	Signature
Date new owner assumed responsibility and liability for permit coverage:	____/____/____ Month Day Year

Please send the completed Transfer of Ownership form and Notice of Intent Application to:

Washington State Department of Ecology
Water Quality Program
Stormwater Unit
P O Box 47696
Olympia, WA 98504-7696 _____

cc: Permit Fee Administrator, Ecology inspector

Appendix F

Ecology Contacts for Technical Assistance

Joyce Smith, Environmental Specialist

(360) 407-6858

For assistance with Notice of Intent application, record keeping, change of information for site, transfer of ownership, terminating permit, general best management practices for stormwater.

Bev Poston, Permit Fee Administrator

(360) 407-6425

Contact person for fee billing statements, current status of fee account, delinquent accounts, balance owed on fee account.

Fax Machine No. for above staff:

(360) 407-6426

Mail Box Request Line:

(360) 407-7156

Ecology Regional Water Quality Permit Managers

Refer to the Ecology regional staff names and counties outlined below (see map below) for assistance in answering questions to the following type of questions: What technique to use for stormwater runoff from your site; for assistance determining whether your stormwater pollution prevention plan (SWPPP) is adequate; what type of source control to use for stormwater; or, whether or not your permit may be terminated.

Northwest Region – Bellevue

<i>King</i>	(425) 649-7028
<i>Island, San Juan, Skagit, Whatcom</i>	(425) 649-7060
<i>Snohomish and Kitsap</i>	(425) 649-7046

Southwest Region – Lacey (Olympia)

<i>Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum</i>	
Industrial Stormwater Permits Only (all above counties)	(360) 407-6273
Construction Only (all above counties)	(360) 407-6294

Eastern Region – Spokane

<i>Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman</i>	
(All above counties, both industrial and construction)	(509) 625-5181 (509) 456-6309

Central Region – Yakima

<i>Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima</i>	
(All above counties, both industrial and construction)	((509) 575-2807

Glossary and Acronyms

AKART. All known, available, and reasonable methods of prevention, control, and treatment: It shall represent the most current methodology that can be reasonable required for preventing, controlling, or abating the pollutants associated with a stormwater discharge.

APHA. American Public Health Association

BMP – Best Management Practices. Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of Washington State.

CFR. Code of Federal Regulations

Dike/berm. A containment physical barrier, usually concrete, or earthen with impervious plastic liner for the containment of fluids.

DMR. Discharge monitoring report

NPDES – National Pollutant Discharge Elimination System. The national program for issuing, modifying, revoking, terminating, monitoring, and enforcing permits for discharges to surface water.

Oil. Includes gasoline, crude oil, fuel oil, diesel oil, lubricating oil, oily refuse and sludge, liquid natural gas, propane, butane, oils distilled from coal, and other liquid hydrocarbons regardless of specific gravity, or any petroleum related product. (Chapter 90.48 RCW)

Operational BMPs. Schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the contamination of stormwater.

OSHA. Occupational Safety and Health Administration

Pollutant. Solid waste, including wood and bark waste, incinerator residue, garbage; oil leaks; filter backwash; sewage; sewage sludge; chemical wastes; biological materials; and industrial, municipal, and agricultural waste discharged into water, or any other material that can cause pollution of water.

Pollution. Contamination or other alteration of the physical, chemical, or biological properties of waters of the state of Washington; including changes in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, solid, gaseous, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

RCW. Revised Code of Washington

Significant Amount. Amount of pollutant that is amenable to treatment or prevention or that has the potential to cause or contribute to a violation of surface, ground water quality, or sediment management standards. In this permit, a significant amount will be defined as exceeding a “benchmark value.”

Structural Source Control BMPs. Physical, structural, mechanical devices, or facilities that are designed to prevent pollutants from entering stormwater.

Stormwater Runoff. Water originating from rainfall or snowmelt that is found in drainage or conveyance facilities at industrial sites.

SWMM – Stormwater Management Manual for Western WA. The technical manual revised by Ecology in August 2001 that contains BMPs to prevent, control, or treat stormwater pollutants. A Comparable Manual for eastern WA will be available when published. (*References 4 and 5*)

SWPPP – Stormwater Pollution Prevention Plan. A documented plan to implement measures to identify, prevent, and control the contamination of stormwater and its discharge to ground or surface water.

Total Maximum Daily Load – TMDL Plan. A description of the type, amount, and sources of water pollution in a water body with strategies to control pollution.

Treatment BMPs. Structural BMPs that are intended to remove pollutants from stormwater, such as oil/water separation, biofiltration, and detention/retention basins. Emerging technologies such as media filtration and manufactured storm drain structures can also be considered. (See Section 6)

USEPA. U. S. Environmental Protection Agency

WAC. Washington Administrative Code

Water Quality Standards. State of WA water quality standards for surface waters of the state, which are codified in Chapter 173-201.

Waters of the State. Waters within the geographic boundaries of the state of Washington, including lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters or watercourses.

WISHA. Washington Industrial Safety and Health Act

**Washington State Department of Ecology
Water Quality Program**

**Industrial Stormwater General Permit
Frequently Asked Questions**

These answers were developed in response to inquiries received by the Washington State Department of Ecology – Water Quality Program. They are organized by permit conditions, e.g., questions related to sampling stormwater are located in “Special Condition S4 – Monitoring”.

This document is intended as guidance only, and does not modify or otherwise change the permit requirements in the Industrial Stormwater General Permit. If there is any discrepancy between this guidance and the Industrial Stormwater General Permit, the permit requirements supersede this guidance.

If you have questions about this document, please contact Jeff Killelea, Permit Writer, at jeff.killelea@ecy.wa.gov or (360) 407-6127.

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Industrial Stormwater General Permit

Frequently Asked Questions

Special Condition S1 – Permit Coverage

Q1 We own/operate an industrial facility that is entirely self-contained and has no run-off to “surface waters of the state”. If our facility has no stormwater run-off, do we need to get permit coverage?

A1 No. Condition S1.A of the Industrial Stormwater General Permit (permit) states, “Facilities engaged in any industrial activities in Table 1 shall apply for coverage if stormwater from the facility discharges to a surface waterbody, or to a storm sewer system that discharges to a surface waterbody.” Therefore, industrial facilities that discharge stormwater only to sanitary sewer or to groundwater (e.g., on-site infiltration), with no discharge to surface waters, do not require coverage under the permit. In other words, facilities that have soil, climate and drainage conditions that prevent stormwater discharges to surface waters (year-round) are exempt from the permit. These exempt facilities do not need to apply for an exemption or get site-specific approval from the Department of Ecology (Ecology).

Note: Federal regulations allow state permitting authorities, including Ecology, to require any facility (regardless of SIC code or discharge characteristics) to apply for the Permit if they are determined to be a “significant contributor of pollutants” (defined in permit), on a case-by-case basis. This determination is a tool used by Ecology to address discharges from facilities that pose an unacceptable risk to surface water or ground water quality.

Q2 What is the definition of “surface waters of the state”? Is a ditch or other man-made waterway considered “surface waters of the state”?

A2 *Surface Waters of the State* includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington, including wetlands. Ditches, irrigation returns, storm drains and other man-made waterways are also considered “surface waters of the state”.

Q3 What if I only discharge stormwater during very large storm events? For example, only during the 100-year storm event?

A3 The potential for any discharge to surface waters of the state should be carefully evaluated and documented by the facility operator. Even if a discharge to surface waters of the state occurs only rarely, as with a 100-year storm event, permit coverage for that discharge is required.

Q4 What if my stormwater discharge is “sheet flow”, rather than through a pipe or discrete conveyance channel? Do I still need permit coverage?

- A4** Yes, sheet flow from an industrial facility into waters of the state would be considered a discharge and therefore requires permit coverage.
- Q5 Does an industrial facility discharging to a storm drain (municipal separate storm sewer system or MS4) in a city or county with a Phase I or Phase II Municipal Stormwater Permit need permit coverage?**
- A5** Yes, discharges of stormwater associated with industrial activity through a municipal separate storm sewer system (MS4) do need permit coverage. By definition, a municipal separate storm sewer system (MS4) is not connected to an operable treatment works (treatment plant) and effluent conveyed through the MS4 discharges to surface waters of the state; therefore, industrial stormwater discharges into a MS4 require permit coverage.
- Q6 My city (or county, school district, etc.) is permitted under Ecology's Municipal Stormwater Permit. The city conducts industrial activity (e.g., bus maintenance, waste management) at several locations. Do these industrial facilities also need coverage under the Industrial Stormwater General Permit?**
- A6** Possibly, depending on the site-specific industrial activity and discharge scenario. Certain types of industrial facilities that are operated by a city or other jurisdiction under a Municipal Stormwater Permit also require coverage under the Industrial Stormwater General Permit, if stormwater from the facility drains to surface waters or a stormwater conveyance system that discharges to surface waters.
- Q7 Does an industrial facility discharging all their stormwater to sanitary sewer or combined sewer (e.g., King County Metro) need permit coverage?**
- A7** No, discharges to sanitary sewer, including combined sewer systems, are connected to an operable treatment works and is not considered a discharge to "waters of the state". Therefore, discharges to sanitary sewers or combined sewers do not require permit coverage. However, these discharges do require specific approval from the local sewer agency:
<http://www.kingcounty.gov/environment/wtd/About/SewerAgencies.aspx>
- Q8 Do transportation facilities require permit coverage?**
- A8** Certain categories of transportation facilities (listed below) require permit coverage if they have vehicle maintenance activity, equipment cleaning operations, or airport deicing operations:
- Railroad Transportation (SIC 40xx)
 - Local and Suburban Transit and Interurban Highway Passenger Transportation (SIC 41xx)
 - Motor Freight Transportation (SIC 42xx, except SIC 4221–25)
 - United States Postal Service (SIC 43xx)
 - Water Transportation (SIC 44xx)
 - Air Transportation (SIC 45xx)
 - Petroleum Bulk Stations and Terminals (SIC 5171)

Definition:

“Vehicle Maintenance” means the rehabilitation, mechanical repairing, painting, fueling, and/or lubricating of a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

Q9 Does “mobile” fueling at a “transportation” facility require permit coverage?

A9 Yes, mobile fueling is “vehicle maintenance activity” and therefore a transportation facility with mobile fueling requires permit coverage (see previous Q&A).

Q10 My transportation facility has vehicle maintenance activity and therefore requires permit coverage. Does the permit apply to the entire footprint of the facility, or just to the area where we conduct vehicle maintenance activity?

A10 The entire footprint of the industrial facility. Once a transportation facility has permit coverage, the permit conditions for sampling, inspection and stormwater management practices are required in all areas of industrial activity - rather than only those areas where vehicle maintenance, equipment cleaning and airport de-icing occur.

Q11 What is a Conditional No Exposure (CNE) exemption? How do I know if my facility qualifies for a CNE exemption?

A11 The permit has an exemption for industrial facilities that do not have industrial materials and activities exposed to stormwater. Facilities with “no exposure” can apply for an exemption from coverage under the permit; this is called a Conditional No Exposure (CNE) exemption.

Ecology’s CNE web page lists the 11 criteria used to determine if a facility qualifies:

http://www.ecy.wa.gov/programs/wq/stormwater/industrial/permitteehelp.html#CNE_Eligibility_Questions

Q12 My facility discharges entirely to sanitary sewer, with no discharge to surface waters. Does this mean I qualify for a Conditional No Exposure (CNE) exemption?

A12 No, “no discharge” is different than “no exposure”. If your facility does not discharge stormwater to surface waters of the state (or a storm drain connected to surface waters of the state), your facility is exempt from the permit, and no form or written exemption is required.

Q13 My facility discharges all stormwater to ground (via infiltration basins and dry wells), with no discharge to surface waters. Does this mean I qualify for a Conditional No Exposure (CNE) exemption?

A13 No, “no discharge” is different than “no exposure”. If your facility does not discharge stormwater to surface waters of the state (or a storm drain connected

to surface waters of the state), your facility is exempt from the permit, and no form or written exemption is required.

Note: Certain discharges to ground (e.g., drain fields, dry wells) require the owner to register through the Underground Injection Control (UIC) program.

More information on the UIC Program:

<http://www.ecy.wa.gov/programs/wq/grndwtr/uic/registration/reginfo.html>

Q14 Can a portion of a facility within a larger industrial facility make use of the Conditional No Exposure (CNE) exemption?

A14 No, the Conditional No Exposure (CNE) exemption applies to the **entire** facility. If some activities are not exposed to stormwater, then it should be noted in the SWPPP that those areas are not exposed (it is a permit requirement to *minimize* exposure). However, once a facility is covered under the permit, the permittee must inspect those areas that are not exposed to stormwater during the monthly site inspection to ensure that those areas continue to have no exposure to stormwater, and that there is no tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas.

Q15 Our facility pressure washes equipment and vehicles at an outdoor (closed-loop) wash rack. Does this activity mean we do not qualify for the Conditional No Exposure (CNE) exemption?

A15 Yes, cleaning of “industrial machinery or equipment” in an area that is exposed to rain or snow constitutes “exposure” (see CNE Question #1), and your facility would not qualify for the Conditional No Exposure (CNE) exemption.

Excerpt from CNE Application - Checklist Question #1:

Is anyone using, storing or cleaning industrial machinery or equipment in an area that is exposed to stormwater, or are there areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to stormwater?

Q16 Our cold storage warehouse has refrigeration units and ducting on the roof. We also have outdoor conveyor belts to bring products and materials into the facility. Does this mean we do not qualify for the Conditional No Exposure (CNE) exemption?

A16 Yes, if equipment associated with industrial activity (e.g., refrigeration units, conveyors) is exposed to stormwater, the facility would not qualify for the Conditional No Exposure (CNE) exemption.

Excerpt from CNE Application - Checklist Question #1:

Is anyone using, storing or cleaning industrial machinery or equipment in an area that is exposed to stormwater, or are there areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to stormwater?

Special Condition S2 – Application for Coverage

Q17 How do I apply for coverage under Ecology’s Industrial Stormwater General Permit?

A17 The owner/operator of the facility must fill out and submit an application form (called “Notice of Intent” form or “NOI”) to Ecology. The form is available on Ecology’s website: <http://www.ecy.wa.gov/biblio/ecy02084.html>.

- Facilities that began operations on or after January 2, 2015 are “new facilities” and must publish a public notice for two consecutive weeks (two separate notices), at least seven days apart, in a newspaper of general circulation within the county in which the discharge from the facility is proposed. The applicant must submit the application form to Ecology on or before the date of the first public notice. The application form has instructions and a template that will help you run your public notice. For additional information, [contact your Permit Administrator](#).

Facilities that began operations prior to January 2, 2015 are “existing facilities”, and not required to publish a public notice.

Permit Coverage Timeline:

- If the applicant does not receive notification from Ecology, permit coverage automatically commences on whichever of the following dates occurs last:
 - The 31st day following receipt by Ecology of a completed application
 - The 31st day following the end of a 30-day public comment period.
- Ecology may need additional time to review the application:
 - If the application is incomplete.
 - If it requires additional site-specific information.
 - If the public requests a public hearing.
 - If members of the public file comments.
 - When more information is necessary to determine whether coverage under the general permit is appropriate.
- When Ecology needs additional time:
 - Ecology will notify the applicant in writing within 30 days and identify the issues that the applicant must resolve before a decision can be reached.
 - Ecology will submit the final decision to the applicant in writing. If Ecology approves the application for coverage/modification, coverage begins the 31st day following approval, or the date the approval letter is issued, whichever is later.

Applicants can also check the status of their application in Ecology’s online database (PARIS): <https://fortress.wa.gov/ecy/wqreports/public/f?p=publicparis>

Special Condition S3 – Stormwater Pollution Prevention Plan (SWPPP)

Q18 Does Ecology have any guidance on how to develop a SWPPP?

A18 Yes, Ecology's website has a SWPPP Template that can be used by permittees and consultants to prepare a SWPPP that meets the requirements of the permit.

Download the SWPPP Template:

[**SWPPP Template**](#)

[-Word docx version](#)

[-Word doc version](#)

Q19 Are permittees *required* to use Ecology's SWPPP template?

A19 No, as long as the permittee's SWPPP meets the requirement of the permit.

Q20 Is it a violation of the permit if we do not have an adequate SWPPP even though our sample numbers are below the benchmarks?

A20 Yes, the SWPPP requirements (Condition S3) apply to all permitted facilities, including those with stormwater discharges below the benchmarks.

Q21 Does the SWPPP Certification form need to be resigned each time the SWPPP is changed?

A21 Yes. But if more than one revision is made during a quarter (3 month reporting period), the permittee only needs to recertify the SWPPP one time that quarter.

Q22 Can part of my SWPPP be stored electronically? For example, can I use a spreadsheet used to keep track of my inspections or corrective actions?

A22 Yes, as long as 1) site personnel have access to the SWPPP during hours of operation, 2) Ecology inspectors are able to review the electronic records onsite during an inspection, and 3) the SWPPP (hard copy + electronic portions) is complete, accurate and covers all the requirements of Condition S3.

Q23 Is it required that fueling trucks have spill kits on them? Fleet fueling, etc.

A23 The permit requires that spill kits be located "within 25 feet of all fueling stations, transfer stations, and mobile fueling units." In a practical sense, that means fueling trucks will likely need to be equipped with spill kits.

Q24 The permit requires chemical liquids, fluids and petroleum products to be stored on an impervious surface that is surrounded with a "secondary containment berm or dike". My above ground fuel tanks are "double-walled" and located on concrete pad. Does this satisfy the permit requirement, or do I also need an additional containment structure around the tank?

A24 A double-walled tank on an impervious surface, such as concrete, is considered "secondary containment" and is in compliance; no additional containment berm or dike is required.

Q25 Do my tanks of wastewater need to be provided with a secondary containment structure?

A25 Yes.

Q26 Do all outdoor dumpsters and waste containers need to have lids?

A26 Yes. Condition S3.B4.b.i.2).d) on page 14 states, “Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.”

Note: Ecology does not consider tarps to be acceptable cover since they tend to weather, blow away, and/or fail to keep water out of the dumpster.

Q27 I am planning to install a chemical treatment system. Do I need to get Ecology’s approval to use chemical treatment?

A27 Yes, the permit requires approval for chemical treatment systems. See Condition S3.B.4.b.iii.3) on Page 18: “Obtain Ecology approval before beginning construction/installation of all treatment BMPs that include the addition of chemicals to provide treatment”.

If the proposal involves either 1) chitosan-enhanced sand filtration or 2) electro-coagulation, submit a Request for Chemical Treatment form to Ecology Headquarters: <http://www.ecy.wa.gov/biblio/ecy070258.html>.

For proposals involving other types of treatment systems, the permittee must submit an engineering report, plans and specifications (WAC [173-240-110](#)) to the appropriate Ecology regional office if the treatment system requires site-specific design or sizing of structures, equipment or processes to collect, convey, treat, reclaim, or dispose of industrial stormwater.

Q28 If I have coverage under the industrial permit, and I hire a contractor to do a project > 1 acre and they get a construction stormwater permit, how is my permit affected? Does the contractor need to follow my BMPs or can they just follow those listed in the construction permit? How does this affect my SWPPP?

A28 Facilities covered under the industrial permit that perform construction activity 1 acre or larger require (separate) coverage under the Construction Stormwater General Permit.

The Construction Stormwater General Permit has different BMPs and monitoring requirements than an Individual NPDES permit, or the Industrial Stormwater General Permit, and those must be followed on the area undergoing construction activity.

If appropriate, the Industrial SWPPP can be modified to state that one or more of the mandatory BMPs in the Industrial Stormwater General Permit may be omitted if site conditions (during the period of construction) render the BMP unnecessary, infeasible, or the Permittee provides alternative or equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP (see p.13,

S3.B.4.b).

The Construction Stormwater General Permit requires weekly turbidity sampling, and the Industrial Stormwater General Permit requires quarterly turbidity sampling.

Discharge points that drain areas where industrial activity and construction is co-located, need to be sampled for turbidity weekly (if discharging); and DMRs need to be submitted for both permits. If multiple turbidity samples were collected, those sample results need to be reported on the Industrial Stormwater DMR, as well as the Construction Stormwater DMR.

Special Condition S4 – General Sampling Requirements

Q29 How do I change, add, or delete sampling locations or locations where my discharge enters surface waters of the state?

A29 Ecology’s website has a form that permittees use to add or remove, or change discharge and/or sample points at a facility. The ISGP Discharge/Sample Point Update form can be downloaded from:
<http://www.ecy.wa.gov/biblio/ecy070373.html>

Q30 Averaging visible sheen? Can it be done?

A30 No, the permit says that pH and visible oil sheen cannot be averaged.

Specifically p.21, S4.B.6.c states:

“Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and “visible oil sheen”) and compare the average value to the benchmark value.”

Also p.22, S5.A.3 states:

“If a Permittee’s discharge exceeds a benchmark listed in Table 2, the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter (except pH and “visible oil sheen”) and compare the average value to the benchmark to determine if the discharge has exceeded a benchmark value.”

Q31 For purposes of “consistent attainment”, is it OK to use sampling data collected prior to the effective date of the 2015 permit?

A31 Yes.

Q32 We would like to clarify the new changes in Consistent Attainment (CA) in ISGP S4.B.6.

It is that clear sampling for a parameter can be suspended for 12 quarters

based on consistent attainment for benchmark values. This would mean that now in 2015, if a parameter has CA for several quarters, that can continue for 12 quarters after CA was achieved.

Our question is whether this also applies for parameters working towards consistent attainment – for example, if zinc has been below the benchmark for 4 quarters – is CA achieved after 4 more quarters – or did the clock reset in 2015 and 8 quarters below the benchmark is required?

- A32** Yes, the same concept applies for parameters working towards consistent attainment. In your example, the 4 samples your client has already achieved would carry forward into the new permit cycle, and then, once they meet the benchmark for 4 more quarters (for a total of 8 consecutive), they can then suspend sampling for 12 quarters. In other words, the clock does not automatically reset in 2015.
- Q33** **Based on the sampling results we just received, one of our facilities has achieved consistent attainment for all but one parameter, zinc. Can we re-sample and use an average of several zinc samples collected during the quarter to still achieve consistent attainment for zinc at this facility based on Permit Condition S4.B.6.c.?**
- A33** Yes, you can continue to sample stormwater at the facility and analyze the samples for zinc (only). The average of those analyses would be calculated and then compared to the benchmark to determine if consistent attainment has been achieved.
- Q34** **My facility had exceedances for Copper and Zinc, but met the benchmarks for all the other parameters. We believe that we have isolated the source of the high Copper and Zinc, and are hoping to do additional sampling to average the results over the quarter in order to mitigate the exceedances. Can I do additional sampling for Cu & Zn only? Or do we have to resample them all?**
- A34** Facilities are allowed to sample only the parameters they are interested in averaging over the quarter, and are not required to re-sample the parameters that met the benchmark.
- Q35** **One of my two discharge points consistently meets the benchmarks, but I have trouble meeting the benchmarks at the other. Can I claim consistent attainment at one discharge point, but not the other?**
- A35** Yes, “consistent attainment” status applies to specific discharge points, so a facility may be able to achieve it at one discharge point, but not at others.
- Q36** **When a facility changes their sampling location, does it re-set their consistent attainment tally?**
- A36** It depends on the nature of the change in location. "Consistent attainment" is parameter-specific and discharge point-specific. For example, a facility with two discharge points may reach consistent attainment for zinc at Location 1, but not at Location 2.

If a facility changes sample locations to a point that still represents the same discharge point and drainage area of the facility (e.g., moving to a different manhole or sampling port within the drainage system that is more safe and/or convenient) that would be viewed as representative of the same discharge point and drainage area. As such, it would not reset the consistent attainment tally.

However, if the facility changes sample points and the new point represents a different discharge point or drainage area - that would reset the consistent attainment tally. Such changes in sample location would require a "Sample Point Update Form", which effectively inactivates the old sample point in Ecology's PARIS database, and activates the new sample point. The DMR data for these two points would be tracked separately in PARIS, and interfere with the ability to track consistent attainment eligibility or status.

Q37 If a facility meets the consistent attainment criteria, but opts to continue sampling for an additional 4 quarters, does the 3 years begin after the non-required sampling stops (after the 4 extra quarters were sampled)?

A37 No, when they choose to collect 4 more quarters of samples after they reached consistent attainment, they basically used up their first year (of three) and then should only be allowed to take 2 more years off from sampling.

Q38 If the October “first flush” storm event occurs during off-hours (e.g., weekend), are permittees required to sample during the very next “on-hours” event, or are we now just trying to get a sample during the 4th quarter?

A38 The permittee is required to sample the next stormwater discharge event that occurs during normal business hours, rather than any time during the 4th quarter.

Q39 The permit says to sample the “first flush” event after October 1st. Can we also take additional samples during that quarter (4th quarter) and compare the average to the benchmark?

A39 Yes, permittees must sample the first discharge after October 1st, but they may also collect additional (multiple) samples during the 4th quarter. If multiple samples are collected the *average* of sample results collected during the quarter must be determined, and the average is then compared to the benchmark to see if corrective actions are required.

Q40 The permit says that stormwater sampling is not required outside of “regular business hours”. For businesses with multiple shifts, please clarify how to determine what is considered regular business hours vs. O&M, janitorial, etc.

A40 Facilities are not exempt from sampling stormwater discharges (per S4.B.1.e) during periods of time or shifts when a facility is engaged in its primary production process.

The permit (p.55) has a definition:

“Regular Business Hours” means those time frames when the facility is engaged in its primary production process, but does not include additional shifts or weekends when partial staffing is at the site primarily for maintenance and incidental production activities. Regular business hours do not include periods of time that the facility is inactive and unstaffed.

Q41 For businesses that operate 24/7, clarify that we need to be prepared to sample at all times unless safety issues interfere.

A41 Facilities that operate 24/7 need to be prepared to sample at all times. Sampling is not required outside regular business hours or during unsafe conditions.

Q42 I want to prove that my client’s stormwater samples are being affected by air deposition or from comingled or run-on sources. They employ additional sampling within their property and outside (upstream, downstream, air deposition, etc.) and the results reveal a large contribution of pollutants not contributed by the permittee or their business practice. How can a permittee demonstrate the difference in their reporting?

A42 Permittees need to sample and report the quality of stormwater being discharged from their industrial activity; typically, this is at the property boundary or the most down gradient manhole/catch basin.

Relevant laws, rules and court cases hold individual facilities responsible for their discharge quality. If the facility’s industrial stormwater is being contaminated by air deposition or an adjacent property/discharge (that cannot be diverted or segregated from the facility’s contribution), they should still sample where stormwater is discharged from their facility, and report their results on the DMR. In some cases, the sampling location can be moved to better reflect only the facility’s stormwater quality (and exclude run-on from off-site sources). Check with the regional Ecology inspector to see if adjustments to the sampling plan would better reflect stormwater quality of the facility.

In some cases, where the off-site impact can be traced to a specific source, the permitted facility may want to contact the party causing the off-site impact to see if there is a practical solution.

Special Condition S5 – Benchmarks, Effluent Limits and Specific Sampling Requirements

Q43 My Discharge Monitoring Report (DMR) form specifies that pH sampling requires a pH meter, but the permit allows permittees to use a pH meter or paper. Can we still use paper?

A43 Yes*, facilities have the option of using either a calibrated pH meter or pH paper (i.e., narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU pH) to analyze their stormwater for pH and compare their results to the pH

benchmark.

***Note:** The only exception applies to discharges subject to a numeric effluent limit for pH (because they discharge to a waterbody on the 303(d)-list for high pH); these operators need to use a calibrated pH meter to assess compliance with their numeric effluent limit for pH.

Q44 My first sample this quarter was above the benchmark. Can I take more than one sample during the quarter and compare the average to the benchmark?

A44 Yes, permittees may sample (one or more parameters) multiple times during the quarter. If multiple samples are collected the *average* of sample results collected during the quarter must be determined, and the average is then compared to the benchmark to see if corrective actions are required.

Q45 The *initial* 4th Quarter sampling results for a parameter would trigger a Level 2 or a Level 3. We sampled several more times during the 4th Quarter and the *average* of all of the 4th Quarter results is below the benchmark. Based on Permit Condition S5.A.3, does this eliminate triggering the Level 2 or Level 3? In other words, is it the average of the samples collected during the quarter that you use to determine if a Level 1, 2 or 3 is triggered, not a single result?

A45 Yes, the *average* of samples collected during the quarter get compared to the benchmark to determine if corrective actions are required.

Q46 Why is additional petroleum monitoring now required at transportation facilities?

A46 Studies suggest petroleum runoff is the most significant impact to the water quality of Puget Sound. In order to protect our water quality, the 2015 Industrial Stormwater General Permit (ISGP) requires additional testing for petroleum at industrial transportation facilities. These sectors include rail, transit, motor freight, water transportation, and bulk petroleum tank farms. The 2010 ISGP only required auto wrecking, scrap recycling and metals industries to monitor petroleum using the Northwest Total Petroleum Hydrocarbons – Diesel range (NW-TPH-Dx). All other industrial sectors looked for presence / absence of a visible oil sheen. This was intended to provide awareness during monthly visual inspections. While the 2015 ISGP sustains this requirement for most sectors, transportation facilities where diesel, motor oil, jet fuel, and hydraulic fluid may drip, leak, or spill into the storm drains, the quantitative method NW-TPH-Dx is now required for this higher risk category.

Special Condition S6 – Discharges to Impaired Waters

Q47 How do I know if I discharge to a 303(d)-listed waterbody?

A47 Ecology has identified facilities that discharge to a 303(d)-listed waterbody with

additional sampling requirements and effluent limits. These facilities were informed of additional impaired waterbody requirements at the time of permit coverage.

Ecology also maintains a list (Appendix 4) of facilities with effluent limits due to 303(d)-listed waterbodies:

[Appendix 4](#) (link to PARIS database report of facilities with 303(d) limits)

Q48 What effluent limits and monitoring requirements apply if my discharge goes to a Puget Sound Sediment Cleanup Site?

A48 If the waterbody is 303(d)-listed (Category 5) for any sediment quality parameter at the time of permit coverage, sampling and reporting for Total Suspended Solids (TSS) is a permit requirement. The discharge is also subject to a 30 mg/L TSS effluent limit. The TSS effluent limit becomes effective January 1, 2107 for discharge points that were not subject to an effluent limit under the previous (2010) permit. TSS sampling and reporting becomes effective on January 2, 2105, or the effective date of permit coverage.

Q49 What is a Puget Sound Sediment Cleanup Site?

A49 Category 4B (Sediment) portions of Budd Inlet (Inner), Commencement Bay (Inner), Commencement Bay (Outer), Dalco Passage and East Passage, Duwamish Waterway (including East and West Waterway), Eagle Harbor, Elliot Bay, Hood Canal (North), Liberty Bay, Rosario Strait, Sinclair Inlet, and Thea Foss Waterway; Category 5 (Sediment) portions of the Duwamish Waterway (including East and West Waterway), and Port Gardner and Inner Everett Harbor; and the Port Angeles Harbor sediment cleanup area, as mapped on Ecology's Industrial Stormwater General Permit website.

Q50 What are the maintenance requirements for collection systems for dischargers to a Puget Sound Sediment Cleanup Site?

A50 At least once prior to October 1, 2016, remove all accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) that are owned or controlled by the Permittee. Use appropriate best management practices to prevent discharges of storm drain solids to surface waters of the state. Dispose all solids and liquids in compliance with applicable laws and regulations, document this in the SWPPP.

Q51 Is testing required for solids that are removed from the stormwater system?

A51 Yes, at least once prior to October 1, 2016, for parameters listed in Table 8 of the permit (page 36).

Q52 Does the permit allow waivers or extensions for line cleaning?

A52 Yes, if the permittee can:

- Demonstrate that line cleaning is not feasible by October 1, 2016, Ecology

- may approve a time extension through a modification of permit coverage.
- Show through a video inspection that line cleaning is not necessary to prevent downstream sediment contamination or recontamination, Ecology may approve a time extension through a modification of permit coverage.

Requests for line cleaning waivers or time extensions are due May 15, 2016, and must be accompanied by a modification of coverage form, and the technical basis to support the request.

Q53 Does the permit allow waivers or extensions for solids sampling analysis?

A53 Yes, if the permittee can:

- Demonstrate that storm drain solids sampling and analysis is not feasible by October 1, 2016, Ecology may approve a time extension through a modification of permit coverage.
- Show that storm drain solids sampling and analysis is not feasible or not necessary, Ecology may approve a time extension through a modification of permit coverage.

Requests for storm drain solids sampling and analysis waivers or time extensions are due May 15, 2016, and must be accompanied by a modification of coverage form, and the technical basis to support the request.

Q54 Is the sampling for TSS in this section (Condition S6.C) similar to our traditional benchmarks where we exclude non-industrial outfalls? Or should I be including all outfalls in this determination?

A54 In general, TSS would only need to be sampled at the locations where benchmark parameters are sampled. Condition S4.B.2 should be used to guide decisions related to sampling locations. The ISGP does not have a definition for “industrial outfalls” or “non-industrial outfalls”, but Condition S1.C.4 is clear that “Office buildings and/or administrative parking lots from which stormwater does not commingle with stormwater from areas associated with industrial activity” are not under the ISGP (and its sampling requirements), unless determined by Ecology to be a “significant contributor of pollutants”.

If you have other types of areas/outfalls that you consider “non-industrial” (from which stormwater does not commingle with industrial stormwater), it may be possible to omit them from sampling – but Ecology recommends running these types of site-specific issues by your regional inspector to verify concurrence. This is important because Ecology has observed a number of instances where facilities and consultants omit important discharge points from their sampling plans.

Q55 Do we also limit/include the non-industrial outfalls for the sampling/cleaning of storm system solids (Condition S6.C)?

A55 As far as line cleaning, the ISGP says “remove accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) owned or controlled by the Permittee”. We intended that to mean the

drainage system for the entire footprint of the permitted industrial facility would be cleaned, with the “office building / admin parking lot” exclusion in S1.C.4 allowing certain drainage to be omitted from sampling, as long as there is no commingling. Site-specific issues could affect the extent of line cleaning, so Ecology recommends seeking guidance from your Ecology inspector.

As far as solids sampling, the most straightforward language is this: *Storm drain solids must be collected/sampled from a representative catch basin, sump, pipe, or other feature within the storm drain system that corresponds to the discharge point where Total Suspended Solids (TSS) samples are collected per Condition S6.C.* The intent is to have a 1:1 relationship between your TSS sample locations and solids sampling locations – recognizing that, in some cases, the solids may not come from the exact same location where TSS samples are collected. It may be necessary or more practical to collect the solids samples elsewhere in the drainage system.

Q56 If a site has two or more discharge points to a sediment impaired water body (Puget Sound Sediment Cleanup Site), but one or more of these are substantially equivalent to the sample point, is sediment sampling required in the substantially equivalent drainage basins?

A56 No, if the Permittee consolidates their TSS sampling locations (based on the ISGP substantially identical criteria), they would also consolidate their storm drain solids sampling locations. This is based on S6.C.2.e:

Storm drain solids must be collected/sampled from a representative catch basin, sump, pipe, or other feature within the storm drain system that corresponds to the *discharge point* where Total Suspended Solids (TSS) samples are collected per Condition S6.C.

So if a facility is only sampling TSS at one of two discharge points, they would only sample the storm drain solids from the one discharge point/drainage basin with TSS sampling.

Special Condition S7 – Inspections

Q57 Do I need to conduct my inspections during wet weather, or when there is a discharge?

A57 The permit requires facilities to perform an inspection of the facility at least once each month. Monthly inspections during discharges are encouraged. If there is a discharge during the monthly inspection, the discharge must be visually examined for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc.

Ecology inspectors recommend facilities perform a monthly inspection at the same time they collect stormwater samples, because it may help identify

stormwater issues and make more informed pollution prevention decisions.

Q58 Does Ecology have any guidance or checklists to help me conduct monthly inspections at my facility?

A58 Yes, Ecology's website has an (optional) inspection checklist that covers all the required elements for inspections at your facility. The checklist is generic and editable, so you can modify the checklist to meet the conditions at your facility, but your inspections must cover the minimum inspection requirements in Condition S7 of the permit.

Download inspection checklist:

[Monthly Site Inspection Form](#)

[-Word docx version](#)

[-Word doc version](#)

Q59 Do I have to fill out Ecology's Monthly Inspection Report form or can I use one of my own?

A59 You are not required to use Ecology's Monthly Site Inspection Form, but you must ensure that your form covers the minimum inspection requirements in Condition S7 of the permit.

Special Condition S8 – Corrective Actions

Q60 Do I need to do a Level 1 corrective action each time I exceed a benchmark? Even when I am doing a Level 2 or 3 corrective action?

A60 Yes, a Level 1 corrective action (operational source control BMP) is required each time a benchmark is exceeded, including when a Level 2 or 3 corrective actions is required.

Q61 Corrective Action Level 2 or 3 Waiver or Time Extension: How difficult is it? Is it a formal process?

A61 The difficulty depends on the nature and complexity of the request, which is site-specific. As part of the waiver request, the permittee is required to submit the technical basis for requesting the waiver/time extension. The technical basis would be based on a permittee's explanation that is 1) not feasible or 2) not necessary to prevent discharges that cause or contribute to violations of water quality standards. Ecology expects a range of scenarios to be presented for consideration.

The process is formal, and includes an opportunity for public notice and comment, as well as an opportunity to appeal Ecology's decision to grant a time-extension or waiver.

To request a waiver, the permittee will need to submit a Modification of Permit Coverage" form <http://www.ecy.wa.gov/biblio/ecy070361.html> and publish two

public notices in a newspaper of local circulation, which is followed by a 30 day public comment period. Once a permittee submits a complete application package, Ecology has 60 days to approve or deny the request. Modifications of coverage are subject to appeal and administrative review by the Pollution Control Hearings Board (PCHB).

Q62 What happens if a permittee exceeds a benchmark for the third time during the permittee's implementation of a Level 2 Corrective Action?

A62 If a facility exceeds an applicable benchmark value (for a single parameter) for any three quarters during a calendar year, they need to implement a Level 3 corrective action, instead of a Level 2, even if the permittee has already initiated a Level 2 Corrective Action.

Note: In cases where a permittee believes that a Level 2 corrective action (source control) has solved (or will solve) the problem causing the benchmark exceedances, they can request a waiver from installing additional treatment BMPs and completing the Level 3 corrective action.

Q63 Clarify the Corrective Action Level 2 deadline; do businesses get until Sept 30 of the following year if they exceed the same parameter twice during the same calendar year? Do they go straight to level 3 while still trying to implement Level 2?

A63 The deadline for completing Level 2 corrective actions is August 31th of the following year in which a permittee exceeded an applicable benchmark value (for a single parameter) for any two quarters during a calendar year¹. However, if a facility exceeds an applicable benchmark value (for a single parameter) for any three quarters during a calendar year, they need to implement a Level 3 corrective action, instead of a Level 2.

Note: In cases where a permittee believes that a Level 2 (source control) corrective action has solved (or will solve) the problem causing the benchmark exceedances, they can request a waiver from installing additional treatment BMPs and completing the Level 3 corrective action.

Q64 With multiple discharge locations (separate outfalls or even separate water bodies), can I be at different Corrective Action levels by exceeding different benchmarks for the separate drainage areas of my site?

A64 No, corrective actions are “parameter-specific”, but are not “outfall-specific”. For example: if a facility exceeds the zinc benchmark at outfall 1 during the 1st quarter, exceeds the zinc benchmark at outfall 2 during the 2nd quarter, and then exceed the zinc benchmark at outfall 3 during the 3rd quarter; they are required to complete a Level 3 corrective action for the entire facility.

¹ In some cases, treatment BMPs are more practical or cost effective than structural source control BMPs. The permit *allows* permittees to do a Level 3 instead of a Level 2 (even though they only exceeded a benchmark 2 quarters/year). Some people consider this “skipping Level 2”. In these cases where a permittee chooses to do a Level 3 instead of a Level 2, the permittee has until Sept 30th the following year to complete the Level 3 corrective action.

- Q65** I have triggered a Level 2 Corrective Action for zinc, and my metal roof is believed to be the source of the zinc. Would painting or sealing a metal (zinc) roof be considered an appropriate Level 2 “Structural Source Control” BMP?
- A65** Yes. Structural source control BMPs includes physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. Since the role of painting or coating metal surfaces is to physically prevent the underlying zinc from entering (i.e., contaminating, leaching into) stormwater, painting or coating a zinc roof could be considered an appropriate Level 2 Corrective Action.
- Q66** I need to do a Level 3 Corrective Action, and I want to use a BMP treatment system that is not in Ecology’s Stormwater Management Manual (or Ecology’s TAPE (Technology Assessment Protocol – Ecology) review process), what can I do?
- A66** The permit allows facilities to use innovative products or technologies, including those not listed in Ecology’s Stormwater Management Manuals (or not yet approved through Ecology’s TAPE process), as long as they document that the BMP is “demonstrably equivalent” to practices in stormwater manuals approved by Ecology (see p.11, S3.A.3.d).
- (Permit p.55) *Demonstrably Equivalent* means that the technical basis for the selection of all stormwater best management practices are documented within a stormwater pollution prevention plan. The stormwater pollution prevention plan must document:
 - 1) The method and reasons for choosing the stormwater best management practices selected;
 - 2) The pollutant removal performance expected from the practices selected;
 - 3) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected;
 - 4) An assessment of how the selected practices will comply with state water quality standards; and
 - 5) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.
- Q67** What kind of documentation is required if I install a treatment system at my facility?
- A67** “The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the *facility* that significantly changes the nature of *pollutants* discharged in *stormwater* from the *facility*”; this includes any time a permittee installs a treatment system (Condition S3.A.4.b).

Note: Each time the SWPPP is updated or modified, the Permittee must

sign a new SWPPP Certification Form. The SWPPP Certification Form is contained in Appendix 3 of the permit and on Ecology's industrial stormwater website.

When treatment BMPs deviate from Ecology's Stormwater Management Manuals (or approved equivalent manuals), the SWPPP must contain documentation that the BMPs are "demonstrably equivalent";

Demonstrably Equivalent means that the technical basis for the selection of all stormwater *best management practices* are documented within a stormwater *pollution* prevention plan. The stormwater *pollution* prevention plan must document: 1) The method and reasons for choosing the stormwater *best management practices* selected; 2) The *pollutant* removal performance expected from the practices selected; 3) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected; 4) An assessment of how the selected practices will comply with state *water quality standards*; and 5) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.

***The following additional documentation is required for Treatment BMPs related to a Level 3 Corrective Action:**

- The Permittee must make appropriate revisions to the SWPPP to include additional Treatment BMPs with the goal of achieving benchmark value(s) in future discharges. Revisions must include additional operational and/or structural source control BMPs if necessary for proper performance and maintenance of Treatment BMPs.
- A Qualified Industrial Stormwater Professional shall review the revised SWPPP, sign the SWPPP Certification Form, and certify that it is reasonably expected to meet the ISGP benchmarks upon implementation. Upon written request Ecology may, one time during the permit cycle, waive this requirement on a case-by-case basis if a Permittee demonstrates to Ecology's satisfaction that the proposed Level 3 treatment BMPs are reasonably expected to meet ISGP benchmarks upon implementation.
- For stormwater treatment systems that require the site-specific design or sizing of structures, equipment, or processes to collect, convey, treat, reclaim, or dispose of industrial stormwater, the permittee must submit an engineering report to Ecology for review and approval. Engineering reports must include:
 - Brief summary of the treatment alternatives considered and why the proposed option was selected. Include cost estimates of ongoing operation and maintenance, including disposal of any spent media;
 - The basic design data, including characterization of stormwater

- influent, and sizing calculations of the treatment units;
- A description of the treatment process and operation, including a flow diagram;
- The amount and kind of chemicals used in accordance with Chapter 173-240 WAC the treatment process, if any.
Note: Use of stormwater treatment chemicals requires submittal of Request for Chemical Treatment Form;
- Results to be expected from the treatment process including the predicted stormwater discharge characteristics;
- A statement, expressing sound engineering justification through the use of pilot plant data, results from similar installations, and/or scientific evidence that the proposed treatment is reasonably expected to meet the permit benchmarks; and
- Certification by a licensed professional engineer.
- The Permittee must also submit an Operation and Maintenance (O&M) Manual to Ecology no later than 30 days after construction/installation, is complete.

Special Condition S9 – Reporting and Recordkeeping

Q68 What reports do we need to submit to Ecology?

A68 Please see Condition S9 of the Permit
<http://www.ecy.wa.gov/programs/wq/stormwater/industrial/ISGPFinal2015.pdf>,
 pages 39-43.

Q69 My facility did not discharge stormwater (during normal working hours) this quarter. Do I still need to submit a Discharge Monitoring Report (DMR)?

A69 Yes, permittees must submit a DMR every quarter, regardless of discharges or sampling. There are checkboxes to indicate that there was not a discharge during normal working hours, or if sampling was not conducted for another reason.

Q70 Can I submit my sampling data online?

A70 Yes, the permit requires electronic reporting using of Ecology's online WQWebDMR program. You can find more info here:
<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>

Q71 My facility did not require any Level 1, 2 or 3 corrective actions last year. Do I still need to submit an Annual Report?

A71 Yes, beginning in 2011, all permittees must submit an annual report to Ecology each year; the deadline is May 15th. Ecology's Industrial Stormwater website has the Annual Report form, and it accommodates facilities that do not have any corrective actions to report.

Q72 Where do I get a copy of the Annual Report Form?

- A72** The form may be downloaded from Ecology's Industrial Stormwater website:
<https://fortress.wa.gov/ecy/publications/summarypages/ecy070382.html>
- Q73** **What is a reportable spill? Is there a minimum reportable quantity? Should every pint / quart / gallon be documented on spill log, even if not released from site?**
- A73** The Permit does not use the terms "reportable spill" or define the quantity that needs to be reported to comply with state spill laws administered by Ecology's Spills Program.

Ecology's Spills Program Website contains information on how to report spills: <http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm>. It includes the following statement: "If you have spilled oil or other hazardous materials to state waters, the ground or the air, you must report it — regardless of the size of the spill. The definition of "oil" includes plant-based oils like vegetable, corn and soybean oils."

The Industrial Stormwater General Permit requires facilities to document chemical and petroleum spills in the spill log (p.15 & 16). No minimum quantity is identified, so all spills should be recorded in the log book, regardless of size. In some cases, the spill log may help the permittee identify spill trends, recurring problems, spill-prone areas, etc., which can be used to improve best management practices.

- Q74** **Condition S9.C requires permittees to maintain a long list of documents and records onsite for at least 5 years. Do all these records need to be in the SWPPP, or can some of these records be stored separately if they are too voluminous to be with SWPPP?**
- A74** As the operator conducts inspections, monitoring, corrective actions, and other permit implementation activities, he/she will generate additional records, such as inspection reports and monitoring results. Keep this additional documentation on-site with the SWPPP, and ensure these records are accessible, complete, and up-to-date so that they demonstrate your full compliance with the conditions of your permit. As a general matter, any compliance records required to be kept pursuant to Condition S9.C, are not necessarily intended to be incorporated into your SWPPP, but instead need to be kept onsite in the same general area as the SWPPP so they may be accessed easily by any inspectors. These records are intended to be stored separately from the SWPPP; however, all records must be kept on-site, in the same general location as the SWPPP.

Special Condition S13 – Notice of Termination

- Q75** **We are moving to another location, how do I cancel my permit coverage?**
- A75** Please submit a Notice of Termination form:
<http://www.ecy.wa.gov/pubs/ecy02086.pdf> to:

Department of Ecology
Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696

General Conditions

- Q76 The ownership of the facility is changing, how do we transfer permit coverage?**
- A76** The previous permittee and the new owner complete and submit a Transfer of Coverage form: <http://www.ecy.wa.gov/biblio/ecy02084a.html> to
Department of Ecology
Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696
- Q77 We have obtained coverage from a former permittee (via transfer of coverage) and they had some outstanding Level 2 and 3 corrective actions to complete. As the new permittee, are we now required to complete these corrective actions?**
- A77** Yes, unless you or the former permittee have timely requested and obtained a waiver from Ecology, per Condition S8.C and/or S8.D.

Monitoring and Reporting in Compliance with the Industrial Stormwater General Permit

Contaminated stormwater is the state's largest source of urban water pollution. Contaminated industrial stormwater runoff may contain oil, grease, silt, toxic metals, and other pollutants that are bad for fish and other aquatic life. Toxic chemicals in untreated industrial stormwater can get into the food chain.

There are approximately 1,200 industrial facilities around the state that are covered under the Industrial Stormwater General Permit (permit). The Department of Ecology (Ecology) is taking steps to improve compliance with the stormwater discharge monitoring and reporting requirements in the permit.



Stormwater Sampling

The permit requires industrial facilities to sample their stormwater discharge and submit the results to Ecology on a discharge monitoring report (DMR). The program has a current DMR submittal rate of approximately 75 percent. This means that about 300 out of 1,200 sites are not submitting their DMRs as the permit requires them to do.

Why monitoring and reporting matters

- Permittees who fail to sample their stormwater are missing an important feedback tool in their efforts to control stormwater pollution from their facility.
- Failure to submit a DMR leaves Ecology with incomplete data and thus an incomplete picture of the stormwater pollution entering our lakes, rivers, and streams. With no DMR, Ecology has no assurance that a facility is protecting water quality.
- Complying with sampling and reporting requirements costs permittees time, effort, and money. If one permittee is spending time and money to comply, it isn't fair if competitors are not.

Noncompliance response

Ecology started sending non-compliance letters in June to permittees who failed to submit a first quarter DMR (due May 15, 2010). Facilities who fail to respond to the non-compliance letters, can expect Ecology to respond with scaled up compliance efforts—including penalties.

Why is complying with the Industrial Stormwater General Permit important?

The Puget Sound and many of our streams, rivers, and lakes are harmed by stormwater pollution. Stormwater is the leading contributor to water quality pollution of urban waterways in Washington.

For example, copper and zinc, commonly found in industrial runoff, are harmful to salmon and other aquatic life, even at relatively low concentrations.

Humans may also be exposed to industrial stormwater pollution when swimming or by eating contaminated fish and shellfish. The Industrial Stormwater General Permit is an important tool to protect water quality in Puget Sound and in Washington's lakes, streams, and rivers.

More information

Industrial Stormwater General Permit:

www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html

Contact:

Charles Gilman

360-407-6437

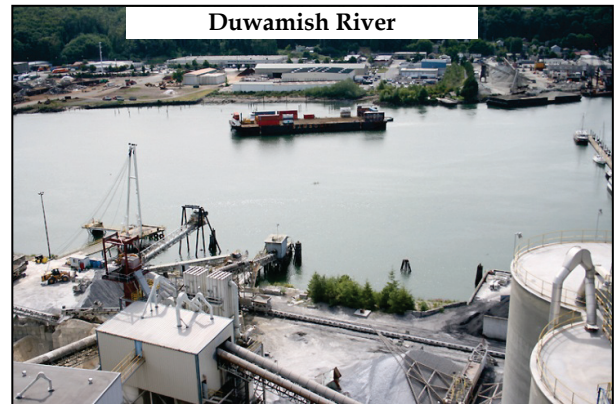
charles.gilman@ecy.wa.gov

Special accommodations:

To ask about the availability of 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.

Ecology Issues New Industrial Stormwater General Permit

The Department of Ecology (Ecology) issued a draft Industrial Stormwater General Permit (ISWGP) in June 2009. Ecology sought public comments on the draft permit June 3, 2009, through July 15, 2009. Ecology received approximately 800 comments from more than 100 stakeholders, including trade associations, businesses, state and local governments, ports, and environmental groups. Ecology made several changes and issued the final Industrial Stormwater General Permit on October 21, 2009.



The Final Industrial Stormwater General Permit becomes effective on January 1, 2010.

Ecology made several changes to the permit, including format improvements that should make it easier for industrial facilities to understand and comply with the permit. These and other changes to the permit help us better protect Washington's waters – now and into the future.

What is the Industrial Stormwater General Permit (ISWGP)?

The ISWGP implements state and federal regulations that require industrial facilities to control stormwater using Best Management Practices to prevent water pollution. The statewide permit currently covers more than 1,200 facilities that discharge stormwater associated with industrial activity into surface waters and storm drains. Ecology receives more than 100 new ISWGP permit applications a year.

Why does the Industrial Stormwater Permit matter?

Polluted stormwater is the state's largest source of urban water pollution. Uncontrolled industrial stormwater runoff sends oil, grease, silt, and toxic substances into our waterways. Even small concentrations of polluted runoff are bad for fish and other aquatic life.

Copper and zinc, which are commonly found in industrial runoff, are harmful to salmon and other aquatic life, even at relatively low concentrations.

Humans are also exposed to the pollution when swimming or eating contaminated fish and shellfish. The Industrial Stormwater General Permit is one of the state's key tools to protect water quality in Puget Sound and in Washington's lakes, streams, and rivers. Washington's waters are ours to protect. This permit helps us all to do this better.

What is different between the old and the new permit?

Ecology wrote this new permit using plain language. We used an outline format that requires less time and effort to find specific requirements. We used simpler wording to make it easier for facility managers to understand the requirements. Ecology made several other important changes to the permit. The new permit:

- Allows businesses the time and flexibility to make incremental progress toward reducing stormwater pollution, while staying in compliance with the permit and Clean Water Act.
- Requires all permittees to implement a Stormwater Pollution Prevention Plan, and make incremental revisions (additional Best Management Practices or BMPs) if monitoring results are above benchmarks¹.
- Sets new reduced benchmarks for metals such as zinc and copper.
- Requires all permittees to measure copper levels in their stormwater runoff.
- Allows facilities to suspend stormwater sampling if their runoff meets the benchmark four consecutive quarters.
- Creates numeric effluent limits for dischargers to 303(d)-listed, impaired waterbodies².

This permit better reflects our increased understanding of the harm that can come from uncontrolled stormwater runoff from industrial facilities and our better understanding of how to best control that stormwater. To help industrial facilities meet these new requirements, Ecology plans to continue to provide and enhance technical assistance to industrial permittees.

Controlling the sources of contaminants is an important way to keep Washington's waters clean. Industries do their part by complying with this permit.

Where can I get information that is more specific or a copy of the new Industrial Stormwater General Permit?

Visit the Industrial Stormwater General Permit Webpage at www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html or contact main reception at 360-407-6000, Department of Ecology PO Box 47600 Olympia, WA 98504-7600.

¹ The permit defines a benchmark as an indicator value. Pollutant concentrations below the benchmark are unlikely to cause a water quality violation, and concentration levels that are greater than the benchmark may cause a water quality violation. Monitoring results that do not meet benchmarks do **not** trigger fines or penalties. Instead, they trigger adaptive management practices intended to achieve monitoring results at or below the benchmarks and ultimately reduce the amount of pollution that reaches Washington's lakes, rivers, and streams.

² Category 5 means that the waterbody is Category 5 - Polluted waters that require a TMDL: the traditional list of impaired water bodies traditionally known as the 303(d) list. Placement in this category means that Ecology has data showing that the water quality standards have been violated for one or more pollutants, and there is no TMDL or pollution control plan. TMDLs are required for the water bodies in this category. For more information visit www.ecy.wa.gov/Programs/wq/303d/index.html

Appendix D4.

Issuance Date: December 3, 2014
Effective Date: January 2, 2015
Expiration Date: December 31, 2019

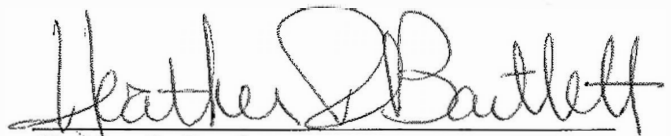
INDUSTRIAL STORMWATER GENERAL PERMIT

A National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge
General Permit for Stormwater Discharges Associated with
Industrial Activities

State of Washington
Department of Ecology
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, Permittees that have properly obtained
coverage under this general permit are authorized to discharge in accordance with the special and
general conditions which follow.



Heather R. Bartlett
Water Quality Program Manager
Washington State Department of Ecology

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SUMMARY OF PERMIT REPORTS & SUBMITTALS

Permit Section	Submittal	Frequency	Due Date(s)
S1.F	Conditional “No Exposure” Certification Form	As necessary	As necessary, with renewals every 5 years
S2.B	<i>Application</i> for Permit Coverage	As necessary	As necessary
S2.B.	Request Modification of Permit Coverage	As necessary	As necessary
S2.D	Request Transfer of Coverage	As necessary	As necessary
S8.D	Level 3 Engineering Report	As necessary	May 15 th , prior to Level 3 deadline ¹
S8.D	Level 3 O&M Manual	As necessary	30 days after Level 3 installation
S9.A	Discharge Monitoring Reports (DMRs)	1/quarter	February 15 th , May 15 th , August 15 th , November 15 th
S9.B	Annual Report	1/year	May 15 th
S9.C.	SWPPP, if requested by <i>Ecology</i>	Per <i>Ecology</i> request	Within 14 days of request
S9.E	Noncompliance Notification	As necessary	Within 30 days of noncompliance event
G8	Duty to Reapply	1/permit cycle	July 3, 2019

SUMMARY OF REQUIRED ONSITE DOCUMENTATION²

Permit Condition(s)	Document Title
S3.A.4.a	<i>Stormwater Pollution Prevention Plan</i> (SWPPP) ³
S9.B	Copies of Annual Reports
S9.C.1.a	Copy of Permit
S9.C.1.b	Copy of Permit Coverage Letter
S9.C.1.c	Original Sampling Records (Field Notes and Laboratory Reports)
S7.C & S9.C.1.d	Site Inspection Reports
S9.C.1.j	Copies of Discharge Monitoring Reports (DMRs)

¹ Unless an alternate due date is specified in an order.

² A complete list is contained in Condition S9.C. The Permittee shall make all plans, documents and records required

by this permit immediately available to Ecology or the local jurisdiction upon request.

³ With signed and completed SWPPP Certification Form(s) – see Appendix 3.

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SPECIAL CONDITIONS

S1. PERMIT COVERAGE

A. Facilities Required to Seek Coverage under This General Permit

This statewide permit applies to *facilities* conducting *industrial activities* that *discharge stormwater* to a surface waterbody or to a *storm sewer* system that drains to a surface waterbody. Beginning on the effective date of this permit and lasting through its expiration date, the Permittee is authorized to *discharge stormwater* and conditionally approved non-stormwater *discharges* to *waters of the state*. All *discharges* and activities authorized by this permit shall be consistent with the terms and conditions of this permit.

The permit requires coverage for private entities, state, and *local government* facilities, and includes *existing facilities* and *new facilities*. Facilities conducting industrial activities listed in [Table 1](#) or referenced in S1.A.3 shall apply for coverage under this permit or apply for a Conditional No Exposure exemption, if eligible (Condition S1.F). The *Department of Ecology (Ecology)* may also require permit coverage for any *facility* on a case-by-case basis in order to protect *waters of the state* (Condition S1.B).

1. Facilities engaged in any industrial activities in [Table 1](#) shall apply for coverage if *stormwater* from the *facility discharges* to a surface waterbody, or to a *storm sewer* system that *discharges* to a surface waterbody. The *Standard Industrial Classification (SIC)* groups generally, but not always, associated with these activities are listed in [Table 1](#).

Table 1: Activities Requiring Permit Coverage and the Associated SIC Groups

Industrial Activities	SIC Groups
Metal Mining	10xx
Coal Mining	12xx
Oil and Gas Extraction	13xx
Mining and Quarrying of Nonmetallic Minerals, except Fuels (except facilities in SIC Codes 1411, 1422, 1423, 1429, 1442, 1446, 1445, 1459, and 1499; these facilities are covered under the Sand and Gravel General Permit)	14xx
Food and Kindred Products	20xx
Tobacco Products	21xx
Textile Mill Products	22xx
Apparel and Other Finished Products Made from Fabrics and Similar Material	23xx
Lumber and Wood Products	24xx
Furniture and Fixtures	25xx
Paper and Allied Products	26xx
Printing, Publishing and Allied Industries	27xx
Chemicals and Allied Products (including Compost Facilities)	28xx
Petroleum Refining and Related Industries (Except facilities in SIC 2951; these facilities are covered under the Sand and Gravel General Permit)	29xx
Rubber and Miscellaneous Products	30xx
Leather and Leather Products	31xx

Industrial Activities	SIC Groups
Stone, Clay, Glass, and Concrete Products (Except facilities in SIC 3271-3273; these facilities are covered under the Sand and Gravel General Permit)	32xx
Primary Metal Industries	33xx
Fabricated Metal Products	34xx
Industrial and Commercial Machinery and Computer Equipment	35xx
Electronic and Other Electrical Equipment and Components	36xx
Transportation Equipment	37xx
Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks	38xx
Miscellaneous Manufacturing Industries	39xx
Farm Product Storage	4221
Refrigerated Storage	4222
General Storage	4225
Recycling facilities involved in the recycling of materials, including but not limited to, metal scrap yards, battery reclaimers, salvage yards, auto recyclers, and automobile junkyards.	5015 and 5093
Steam Electric Power Generation	N/A
Refuse Systems, including, but not limited to, <i>landfills</i> , transfer stations, open dumps, and <i>land application sites</i> , except as described in S1.C.6 or C.7.	4953
Hazardous waste treatment, storage, and disposal (TSD) facilities, and recycling facilities regulated under Chapter 173-303 WAC.	N/A
Treatment works treating domestic sewage, or any other sewage sludge, or wastewater treatment device or system, used in the storage, recycling, and reclamation of municipal or domestic sewage (including land dedicated to the disposal of sewage sludge that are located within the confines of the <i>facility</i>) with the design flow capacity of 1 million gallons per day (MGD) or more, or required to have a pretreatment program under <i>40 CFR</i> §403.	4952
Transportation facilities which have <i>vehicle maintenance</i> activity, equipment cleaning operations, or airport <i>deicing</i> operations: <ul style="list-style-type: none"> • Railroad Transportation • Local and Suburban Transit and Interurban Highway Passenger Transportation • Motor Freight Transportation (except SIC 4221–25) • United States Postal Service • Water Transportation • Air Transportation • Petroleum Bulk Stations and Terminals 	40xx 41xx 42xx 43xx 44xx 45xx 5171

2. Any *facility* that has an existing *National Pollutant Discharge Elimination System (NPDES)* permit which does not address all *stormwater discharges associated with industrial activity* [40 CFR Subpart 122.26(b)(14)] shall obtain permit coverage.
3. Any *inactive facility* which is listed under 40 CFR Subpart 122.26(b)(14) where *significant materials* remain onsite and are exposed to *stormwater* shall obtain permit coverage.

B. Significant Contributors of Pollutants

Ecology may require a *facility* to obtain coverage under this permit if *Ecology* determines the *facility*:

1. Is a *significant contributor of pollutants* to *waters of the state*, including *ground water*;
2. May reasonably be expected to cause a violation of any *water quality standard*; or
3. Conducts *industrial activity*, or has a SIC code, with *stormwater* characteristics similar to any *industrial activity* or SIC code listed in [Table 1](#) in S1.A.1.

C. Facilities Not Required to Obtain Coverage

Ecology does not require the types of facilities listed below to obtain coverage under this permit, unless determined to be a *significant contributor of pollutants*.

1. Industrial facilities that submit an *application* and qualify for a Conditional “No Exposure” Exemption. (Condition S1.F)
2. Industrial facilities that *discharge stormwater* only to a municipal *combined sewer* or *sanitary sewer*. *Discharge* of stormwater to sanitary or *combined sewers* shall only occur as authorized by the municipal sewage authority.
3. Industrial facilities that *discharge stormwater* only to groundwater (e.g., on-site infiltration) with no *discharge to surface waters of the state* under any condition.
4. Office buildings and/or administrative parking lots from which *stormwater* does not commingle with stormwater from areas associated with *industrial activity*.
5. Any part of a *facility* with a *discharge* that is in compliance with the instructions of an On-Scene-Coordinator pursuant to 40 CFR part 300 (The National Oil and Hazardous Substances Pollution Contingency Plan) or 33 CFR 153.10(e) (Pollution by Oil and Hazardous Substances), in accordance with 40 CFR 122.3(d).
6. Any *land application site* used for the beneficial use of industrial or municipal wastewater for agricultural activities or when applied for landscaping purposes at agronomic rates.
7. Any farmland, domestic garden, or land used for sludge management where domestic sewage sludge (biosolids) is beneficially reused (nutrient builder or soil conditioner) and which is not physically located in the confines of domestic sewage treatment works, or areas that are in compliance with Section 405 (Disposal of Sewage Sludge) of the *Clean Water Act (CWA)*.

8. Any inactive coal mining operation if:
 - a. The performance bond issued to the *facility* by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released from applicable state or federal reclamation requirements after December 17, 1990.
 - b. The mine does not have a *discharge of stormwater* that comes in contact with any overburden, raw material, intermediate products, finished products, byproducts, or waste products located on the site of the *facility*.
9. Inactive mining, inactive oil and gas operations, or inactive *landfills* where neither an owner nor an operator can be identified.
10. Closed *landfills* that are capped and stabilized, in compliance with Chapter 173-304 WAC, and in which no *significant materials* or industrial *pollutants* remain exposed to *stormwater*. Permittee's with existing coverage may submit a *Notice of Termination* in accordance with Special Condition S13.A.1.

D. Facilities Excluded from Coverage

Ecology will not cover the following facilities or activities under this permit:

1. If any part of a *facility*, in the categories listed below, has a *stormwater discharge* subject to *stormwater* Effluent Limitations Guidelines, New Source Performance Standards (NSPS) Under *40 CFR* Subchapter N, or Toxic Pollutant Effluent Standards under *40 CFR* Subchapter D Part 129; the operator of the facility must apply for an individual NPDES permit or seek coverage under an industry-specific *general permit* for those *stormwater discharges*.

Below is a list of categories of industries specified in *40 CFR* Subchapter N for which at least one subpart includes *stormwater* effluent limitations guidelines or NSPS. Industries included in this list should review the Subchapter N guidelines to determine if they are subject to a *stormwater* effluent limitation guideline for activities which they perform at their site.

40 CFR 411 Cement manufacturing	40 CFR 423 Steam electric power generating
40 CFR 412 Feedlots	40 CFR 434 Coal mining
40 CFR 418 Fertilizer manufacturing	40 CFR 436 Mineral mining and processing
40 CFR 419 Petroleum refining	40 CFR 440 Ore mining and dressing
40 CFR 422 Phosphate manufacturing	40 CFR 443 Paving and roofing materials (tars & asphalt)
40 CFR 449.11(a) Airports with more than 10,000 annual jet departures.	

Facilities, which are subject to effluent standards in *40 CFR* Subchapter D Part 129: Aldrin/Dieldrin; DDT; Endrin; Toxaphene; Benzidine; or Polychlorinated Biphenyls (PCBs), shall apply for an individual NPDES permit.

2. Nonpoint source silvicultural activities with natural *runoff* that are excluded in *40 CFR* Subpart 122.27.

3. Industrial activities operated by any department, agency, or instrumentality of the executive, legislative, and judicial branches of the Federal Government of the United States, or another entity, such as a private contractor, performing industrial activity for any such department, agency, or instrumentality.
4. Facilities located on “Indian Country” as defined in 18 U.S.C. §1151, except portions of the Puyallup Reservation as noted below.

Indian Country includes:

- a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation. This includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation.
- b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.
- c. All off-reservation federal trust lands held for Native American Tribes.

Puyallup Exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Any facility authorized to *discharge stormwater* associated with *industrial activity* under an existing NPDES individual or other *general permit*.
6. All *construction activities*. Operators of these construction activities shall seek coverage under the Construction Stormwater General Permit or an individual NPDES permit for *stormwater* associated with *construction activity*.
7. Facilities that *discharge* to a waterbody with a *control plan*, unless this *general permit* adequately provides the level of protection required by the *control plan*.
8. *New dischargers* to a waterbody listed pursuant to Section 303(d) of the CWA, unless the Permittee meets the requirements of Condition S6.B.
9. Hazardous waste *landfills* subject to 40 CFR Part 445, Subpart A.

E. Discharges to Ground

1. For sites that *discharge* to both surface water and *ground water*, the terms and conditions of this permit shall apply to all *ground water discharges*. However, Permittees are not required to sample on-site discharges to ground (e.g., infiltration), unless specifically required by *Ecology* (Condition G12).
2. Facilities that *discharge* to *ground water* through an *underground injection control well* shall comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

F. Conditional "No Exposure" Exemption

1. Any *industrial activity* identified for coverage under Condition S1.A. that is eligible for a "No Exposure" exemption from the permit under 40 *CFR* 122.26 (g), may submit a No Exposure Certification Form to *Ecology*, either in writing or electronically.
 - a. A Permittee is automatically granted a No Exposure exemption 90 days from *Ecology's* receipt of a complete and accurate No Exposure Certification Form, unless *Ecology* informs the applicant in writing or electronically within 90 days that it has denied or approved the request.
 - b. *Ecology* will automatically terminate permit coverage when it grants the No Exposure exemption to a permitted *facility*.
 - c. Facilities which are granted a No Exposure exemption must submit a No Exposure Certification Form to *Ecology* once every five years.
 - d. No Exposure exemptions are conditional. If there is a change at the *facility* that results in the exposure of industrial activities or materials to *stormwater*, the *facility* is required to immediately apply for and obtain a permit.

S2. APPLICATION FOR COVERAGE

A. Obtaining Permit Coverage

1. Unpermitted facilities that require coverage under this permit shall submit a complete and accurate permit *application* to *Ecology* as follows:
 - a. Existing Facilities
 - i. Unpermitted *existing facilities* that require coverage under this permit shall submit a complete and accurate permit *application* to *Ecology*.
 - ii. *Existing facilities* are facilities in operation prior to the effective date of this permit, January 2, 2015.
 - b. New Facilities

New facilities are facilities that begin operation on or after the effective date of this permit, January 2, 2015. All unpermitted *new facilities* shall:

 - i. Submit a complete and accurate permit *application* to *Ecology* at least 60 days before the commencement of *stormwater discharge* from the *facility*.
 - ii. The *application* shall include certification that the *facility* has met the applicable public notice and *State Environmental Policy Act (SEPA)* requirements in WAC 173-226-200(f).

B. Modification of Permit Coverage

A Permittee anticipating a *significant process change*, or otherwise requesting a modification of permit coverage, shall submit a complete Modification of Coverage Form to *Ecology*. The Permittee shall:

S2.B.1

1. Apply for modification of coverage at least 60 days before implementing a *significant process change*; or by May 15th prior to a Corrective Action deadline, if requesting a Level 2 or 3 time extension or waiver request per Condition S8.B-D.
2. Complete the public notice requirements in WAC 173-226-130(5) as part of a complete *application* for modification of coverage.
3. Comply with SEPA as part of a complete *application* for modification of coverage if undergoing a *significant process change*.

C. Permit Coverage Timeline

1. If the applicant does not receive notification from *Ecology*, permit coverage automatically commences on whichever of the following dates occurs last:
 - a. The 31st day following receipt by *Ecology* of a completed *application* for coverage.
 - b. The 31st day following the end of a 30-day public comment period.
 - c. The effective date of the *general permit*.
2. *Ecology* may need additional time to review the *application*:
 - a. If the *application* is incomplete.
 - b. If it requires additional site-specific information.
 - c. If the public requests a public hearing.
 - d. If members of the public file comments.
 - e. When more information is necessary to determine whether coverage under the *general permit* is appropriate.
3. When *Ecology* needs additional time:
 - a. *Ecology* will notify the applicant in writing within 30 days and identify the issues that the applicant must resolve before a decision can be reached.
 - b. *Ecology* will submit the final decision to the applicant in writing. If *Ecology* approves the *application* for coverage, coverage begins the 31st day following approval, or the date the approval letter is issued, whichever is later.

D. Transfer of Permit Coverage

Coverage under this *general permit* shall automatically transfer to a *new discharger*, if all of the following conditions are met:

1. The Permittee (existing *discharger*) and *new discharger* submit to *Ecology* a complete, written, signed agreement (Transfer of Coverage Form) containing a specific date for transfer of permit responsibility, coverage, and liability.
2. The type of industrial activities and practices remain substantially unchanged.
3. *Ecology* does not notify the Permittee of the need to submit a new *application* for coverage under the *general permit* or for an individual permit pursuant to Chapters 173-216, 173-220, and 173-226 WAC.
4. *Ecology* does not notify the existing *discharger* and *new discharger* of its intent to revoke coverage under the *general permit*. The transfer is effective on the date specified in the written agreement unless *Ecology* gives this notice.

S3. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General Requirements

1. All Permittees and applicants for coverage under this permit shall develop and implement a SWPPP for the permitted *facility* as follows:
2. The SWPPP shall specify the *Best Management Practices* (BMPs) necessary to:
 - a. Provide *all known, available, and reasonable methods of prevention, control, and treatment (AKART)* of *stormwater pollution*.
 - b. Ensure the *discharge* does not cause or contribute to a violation of the *Water Quality Standards*.
 - c. Comply with applicable federal technology-based treatment requirements under *40 CFR 125.3*.
3. Proper Selection and Use of *Stormwater Management Manuals (SWMM)*:
BMPs shall be consistent with:
 - a. *Stormwater Management Manual* for Western Washington (2012 edition), for sites west of the crest of the Cascade Mountains; or
 - b. *Stormwater Management Manual* for Eastern Washington (2004 edition), for sites east of the crest of the Cascade Mountains; or
 - c. Revisions to the manuals in S3.A.3.a & b., or other *stormwater* management guidance documents or manuals which provide an equivalent level of *pollution* prevention, that are approved by *Ecology* and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230. For purposes of this section, the documents listed in Appendix 10 of the August 1, 2013 Phase I Municipal Stormwater Permit are hereby incorporated into this permit; or

- d. Documentation in the SWPPP that the BMPs selected are *demonstrably equivalent* to practices contained in stormwater technical manuals approved by *Ecology*, including the proper selection, implementation, and maintenance of all applicable and appropriate *best management practices* for on-site *pollution* control.
4. Update of the SWPPP
- a. The Permittee shall modify the SWPPP if the owner/operator or the applicable local or state regulatory authority determines during inspections or investigations that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing *pollutants* in *stormwater* discharges from the site. The Permittee shall modify the SWPPP:
 - i. As necessary to include additional or modified BMPs designed to correct problems identified.
 - ii. To correct the deficiencies identified in writing from *Ecology* within 30 days of notice.
 - b. The Permittee shall modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the *facility* that significantly changes the nature of *pollutants* discharged in *stormwater* from the *facility*, or significantly increases the quantity of pollutants discharged.
 - c. If a Permittee covered under the 2010 ISGP needs to update their SWPPP to be consistent with the 2015 ISGP, the update shall be completed by January 30, 2015.

5. Other *Pollution Control Plans*

The Permittee may incorporate by reference applicable portions of plans prepared for other purposes at their *facility*. Plans or portions of plans incorporated by reference into a SWPPP become enforceable requirements of this permit and must be available along with the SWPPP as required in S9.F. A *Pollution* Prevention Plan prepared under the Hazardous Waste Reduction Act, Chapter 70.95C RCW, is an example of such a plan.

6. Signatory Requirements

The Permittee shall sign and certify all SWPPPs in accordance with General Condition G2, each time it revises or modifies a SWPPP to comply with Conditions S3.A.4 (Update of the SWPPP), S7 (Inspections) or S8 (Corrective Actions). The SWPPP Certification Form is contained in Appendix 3 of this permit and on Ecology's industrial stormwater website.

B. Specific SWPPP Requirements

The SWPPP shall contain a site map, a detailed assessment of the *facility*, a detailed description of the BMPs, Spill Prevention and Emergency Cleanup Plan, and a sampling plan. The Permittee shall identify any parts of the SWPPP which the *facility* wants to claim as Confidential Business Information.

1. The site map shall identify:
 - a. The scale or include relative distances between significant structures and drainage systems.
 - b. Significant features.
 - c. The *stormwater* drainage and *discharge* structures and identify, by name, any other party other than the Permittee that owns any *stormwater* drainage or discharge structures.
 - d. The *stormwater* drainage areas for each *stormwater discharge* point off-site (including discharges to *ground water*) and assign a unique identifying number for each discharge point.
 - e. Each sampling location by unique identifying number.
 - f. Paved areas and buildings.
 - g. Areas of *pollutant* contact (actual or potential) associated with specific industrial activities.
 - h. Conditionally approved non-*stormwater* discharges (Condition S5.D).
 - i. Surface water locations (including wetlands and drainage ditches).
 - j. Areas of existing and potential soil *erosion* that could result in the discharge of a *significant amount* of turbidity, sediment or other pollutants.
 - k. *Vehicle maintenance* areas.
 - l. Lands and waters adjacent to the site that may be helpful in identifying *discharge* points or drainage routes.
2. The *facility* assessment shall include a description of the *facility*; an inventory of *facility* activities and equipment that contribute to or have the potential to contribute any *pollutants* to *stormwater*; and, an inventory of materials that contribute to or have the potential to contribute pollutants to *stormwater*.
 - a. The *facility* description shall describe:
 - i. The industrial activities conducted at the site.
 - ii. *Regular business hours* and seasonal variations in business hours or industrial activities.
 - iii. The general layout of the *facility* including buildings and storage of raw materials, and the flow of goods and materials through the *facility*.
 - b. The inventory of industrial activities shall identify all areas associated with industrial activities (see [Table 1](#)) that have been or may potentially be sources of *pollutants*, including, but not limited to, the following:
 - i. Loading and unloading of dry bulk materials or liquids.
 - ii. Outdoor storage of materials or products.
 - iii. Outdoor manufacturing and processing.

- iv. On-site dust or particulate generating processes.
 - v. On-site waste treatment, storage, or disposal.
 - vi. *Vehicle* and equipment fueling, maintenance, and/or cleaning (includes washing).
 - vii. Roofs or other surfaces exposed to *air emissions* from a manufacturing building or a process area.
 - viii. Roofs or other surfaces composed of materials that may be mobilized by *stormwater* (e.g., galvanized roofs, galvanized fences).
- c. The inventory of materials shall list:
- i. The types of materials handled at the site that potentially may be exposed to precipitation or *runoff* and could result in *stormwater pollution*.
 - ii. A short narrative for each material describing the potential of the *pollutant* to be present in *stormwater* discharges. The Permittee shall update this narrative when data become available to verify the presence or absence of these pollutants.
 - iii. A narrative description of any potential sources of *pollutants* from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to *stormwater*. Include the method and location of on-site storage or disposal. List significant spills and significant leaks of toxic or hazardous pollutants.
3. The SWPPP shall identify specific individuals by name or by title within the organization (*pollution* prevention team) whose responsibilities include: SWPPP development, implementation, maintenance, and modification.
4. *Best Management Practices* (BMPs)
- a. General BMP Requirements

The Permittee shall describe each BMP selected to eliminate or reduce the potential to contaminate *stormwater* and prevent violations of *water quality standards*. The SWPPP must explain in detail how and where the selected BMPs will be implemented.
 - b. The Permittee shall include each of the following mandatory BMPs in the SWPPP and implement the BMPs. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.
 - i. *Operational Source Control BMPs*
 - 1) The SWPPP shall include the *Operational Source Control BMPs* listed as “applicable” in *Ecology*’s SWMMs, or other guidance documents or manuals approved in accordance with S3.A.3.c.

- 2) Good Housekeeping: The SWPPP shall include BMPs that define ongoing maintenance and cleanup, as appropriate, of areas which may contribute *pollutants* to *stormwater* discharges. The SWPPP shall include the schedule/frequency for completing each housekeeping task, based upon *industrial activity*, sampling results and observations made during inspections. The Permittee shall:
 - a) Vacuum paved surfaces with a vacuum sweeper (or a sweeper with a vacuum attachment) to remove accumulated *pollutants* a minimum of once per quarter.
 - b) Identify and control all on-site sources of dust to minimize *stormwater* contamination from the deposition of dust on areas exposed to precipitation.
 - c) Inspect and maintain bag houses monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust at the base of exterior bag houses.
 - d) Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.
- 3) Preventive Maintenance: The SWPPP shall include BMPs to inspect and maintain the *stormwater* drainage, source controls, treatment systems (if any), and plant equipment and systems that could fail and result in contamination of *stormwater*. The SWPPP shall include the schedule/frequency for completing each maintenance task. The Permittee must:
 - a) Clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe.
 - b) Maintain ponds, tanks/vaults, catch basins, swales, filters, oil/water separators, drains, and other stormwater drainage/treatment facilities in accordance with the Maintenance Standards set forth in the applicable Stormwater Management Manual (SWMM), other guidance documents or manuals approved in accordance with S3.A.3.c., demonstrably equivalent BMPs per S3.A.3.d., or an O&M Manual submitted to Ecology in accordance with S8.D.
 - c) Inspect all equipment and vehicles during monthly site inspections for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and *vehicles* out of service or prevent leaks from spilling on the ground until repaired.
 - d) Immediately clean up spills and leaks (e.g., using absorbents, vacuuming) to prevent the *discharge* of *pollutants*.

- 4) Spill Prevention and Emergency Cleanup Plan (SPECP): The SWPPP shall include a SPECP that includes BMPs to prevent spills that can contaminate *stormwater*. The SPECP shall specify BMPs for *material handling* procedures, storage requirements, cleanup equipment and procedures, and spill logs, as appropriate. The Permittee shall:
- a) Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.
 - b) Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a plan on how it will manage and dispose of accumulated water if a containment area cover is not practical.
 - c) Locate spill kits within 25 feet of all stationary fueling stations, fuel transfer stations, mobile fueling units, and used oil storage/transfer stations. At a minimum, spill kits shall include:
 - i) Oil absorbents capable of absorbing 15 gallons of fuel.
 - ii) A storm drain plug or cover kit.
 - iii) A non-water containment boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity.
 - iv) A non-metallic shovel.
 - v) Two five-gallon buckets with lids.
 - d) Not lock shut-off fueling nozzles in the open position. Do not “top-off” tanks being refueled.
 - e) Block, plug or cover storm drains that receive *runoff* from areas where fueling, during fueling.
 - f) Use drip pans or equivalent containment measures during all petroleum transfer operations.
 - g) Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone *vehicles* and equipment awaiting maintenance to protected areas).
 - h) Use drip pans and absorbents under or around leaky *vehicles* and equipment or store indoors where feasible. Drain fluids from equipment and *vehicles* prior to on-site storage or disposal.
 - i) Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason

for spill; date/time cleanup completed, notifications made and staff involved.

- 5) Employee Training: The SWPPP shall include BMPs to provide SWPPP training for employees who have duties in areas of industrial activities subject to this permit. At a minimum, the training plan shall include:
 - a) The content of the training.
 - i) An overview of what is in the SWPPP.
 - ii) How employees make a difference in complying with the SWPPP and preventing contamination of *stormwater*.
 - iii) Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
 - b) How the Permittee will conduct training.
 - c) The frequency/schedule of training. The Permittee shall train employees annually, at a minimum.
 - d) A log of the dates on which specific employees received training.
- 6) Inspections and Recordkeeping: The SWPPP shall include documentation of procedures to ensure compliance with permit requirements for inspections and recordkeeping. At a minimum, the SWPPP shall:
 - a) Identify *facility* personnel who will inspect designated equipment and *facility* areas as required in Condition S7.
 - b) Contain a visual inspection report or check list that includes all items required by Condition S7.C.
 - c) Provide a tracking or follow-up procedure to ensure that a report is prepared and any appropriate action taken in response to visual inspections.
 - d) Define how the Permittee will comply with signature requirements and records retention identified in Special Condition S9, Reporting and Recordkeeping Requirements.
 - e) Include a certification of compliance with the SWPPP and permit for each inspection using the language in S7.C.1.c.
 - f) Include all inspection reports completed by the Permittee (S7.C).
- 7) *Illicit Discharges*: The SWPPP shall include measures to identify and eliminate the *discharge* of *process wastewater*, *domestic wastewater*, *noncontact cooling water*, and other *illicit discharges*, to *stormwater* sewers, or to surface waters and *ground waters of the state*. The Permittee can find BMPs to identify and eliminate *illicit discharges* in Volume IV of

Ecology's SWMM for Western Washington and Chapter 8 of the SWMM for Eastern Washington.

Water from washing *vehicles* or equipment, steam cleaning and/or pressure washing is considered *process wastewater*. The Permittee must not allow this process wastewater to comeingle with *stormwater* or enter storm drains; and must collect in a tank for off-site disposal, or *discharge* it to a *sanitary sewer*, with written approval from the local sewage authority.

ii. *Structural Source Control BMPs*

- 1) The SWPPP shall include the *Structural Source Control BMPs* listed as “applicable” in *Ecology's* SWMMs, or other guidance documents or manuals approved in accordance with S3.A.3.c.
- 2) The SWPPP shall include BMPs to minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and *runoff* by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.

Permittees shall:

- a) Use grading, berming, or curbing to prevent *runoff* of contaminated flows and divert run-on away from these areas.
- b) Perform all cleaning operations indoors, under cover, or in bermed areas that prevent *stormwater runoff* and run-on, also that capture any overspray.
- c) Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the *stormwater drainage system*.

iii. *Treatment BMPs*

The Permittee shall:

- 1) Use *Treatment BMPs* consistent with the applicable documents referenced in Condition S3.A.3.
- 2) Employ oil/water separators, booms, skimmers, or other methods to eliminate or minimize oil and grease contamination of *stormwater* discharges.
- 3) Obtain *Ecology* approval before beginning construction/installation of all *treatment BMPs* that include the addition of chemicals to provide treatment.

iv. *Stormwater Peak Runoff Rate and Volume Control BMPs*

Facilities with *new development* or *redevelopment* shall evaluate whether flow control BMPs are necessary to satisfy the state's AKART requirements, and prevent violations of water quality standards. If flow control BMPs are required, they shall be selected according to S3.A.3.

v. *Erosion and Sediment Control BMPs*

The SWPPP shall include BMPs necessary to prevent the *erosion* of soils and other earthen materials (crushed rock/gravel, etc.), control off-site *sedimentation*, and prevent violations of *water quality standards*. The Permittee shall implement and maintain:

- 1) *Sediment* control BMPs such as *detention* or retention ponds or traps, vegetated filter strips, bioswales, or other permanent *sediment* control BMPs to minimize *sediment* loads in *stormwater* discharges.
- 2) Filtration BMPs to remove solids from catch basins, sumps or other *stormwater* collection and conveyance system components (catch basin filter inserts, filter socks, modular canisters, sand filtration, centrifugal separators, etc.).

5. Sampling Plan

The SWPPP shall include a sampling plan. The plan shall:

- a. Identify points of *discharge* to surface water, *storm sewers*, or discrete *ground water* infiltration locations, such as dry wells or *detention* ponds.
- b. Include documentation of why applicable parameters are not sampled at each *discharge* point per S4.B.2.c (if applicable):
 - i. Location of which *discharge* points the Permittee does not sample applicable parameters because the *pollutant* concentrations are substantially identical to a discharge point being sampled.
 - ii. General industrial activities conducted in the drainage area of each *discharge* point.
 - iii. *Best Management Practices* conducted in the drainage area of each discharge point.
 - iv. Exposed materials located in the drainage area of each *discharge* point that are likely to be significant contributors of *pollutants* to *stormwater discharges*.
 - v. Impervious surfaces in the drainage area that could affect the percolation of *stormwater runoff* into the ground (e.g., asphalt, crushed rock, grass).
 - vi. Reasons why the Permittee expects the *discharge* points to discharge substantially identical effluents.
- c. Identify each sampling location by its unique identifying number such as A1, A2.
- d. Identify staff responsible for conducting *stormwater* sampling.

- e. Specify procedures for sample collection and handling.
- f. Specify procedures for sending samples to a laboratory.
- g. Identify parameters for analysis, holding times and preservatives, laboratory *quantitation levels*, and analytical methods.
- h. Specify the procedure for submitting results to *Ecology*.

S4. GENERAL SAMPLING REQUIREMENTS

A. General Requirements

The Permittee shall conduct sampling of *stormwater* in accordance with this permit and the SWPPP.

B. Sampling Requirements

1. Sample Timing and Frequency

- a. The Permittee shall sample the *discharge* from each designated location at least once per quarter:
 - 1st Quarter = January, February, and March
 - 2nd Quarter = April, May, and June
 - 3rd Quarter = July, August, and September
 - 4th Quarter = October, November, and December
- b. Permittees shall sample the *stormwater discharge* from the *first fall storm event* each year. “First fall storm event” means the first time on or after October 1st of each year that precipitation occurs and results in a *stormwater discharge* from a *facility*.
- c. Permittees shall collect samples within the first 12 hours of *stormwater discharge* events. If it is not possible to collect a sample within the first 12 hours of a *stormwater* discharge event, the Permittee must collect the sample as soon as practicable after the first 12 hours, and keep documentation with the sampling records (Condition S4.B.3) explaining why they could not collect samples within the first 12 hours; or if it is unknown (e.g., discharge was occurring during start of regular business hours).
- d. The Permittee shall obtain *representative samples*, which may be a single grab sample, a time-proportional sample, or a flow-proportional sample.
- e. Permittees need not sample outside of *regular business hours*, during unsafe conditions, or during quarters where there is no discharge, but shall submit a Discharge Monitoring Report each reporting period (Condition S9.A).

2. Sample Location(s)

- a. The Permittee shall designate sampling location(s) at the point(s) where it discharges *stormwater* associated with *industrial activity* off-site.

- b. The Permittee is not required to sample on-site discharges to ground (e.g., infiltration) or *sanitary sewer* discharges, unless specifically required by *Ecology* (Condition G12).
- c. The Permittee shall sample each distinct point of *discharge* off-site except as otherwise exempt from monitoring as a “*substantially identical discharge point*” per S3.B.5.b. If applicable, the Permittee is only required to monitor applicable parameters at one of the “substantially identical discharge points”.
- d. The Permittee shall notify *Ecology* of any changes or updates to sample locations, *discharge points*, and/or *outfalls* by submitting an “Industrial Stormwater General Permit Discharge/Sample Point Update Form” to *Ecology*.

3. Sample Documentation

For each *stormwater* sample taken, the Permittee shall record the following information and retain it on-site for *Ecology* review:

- a. Sample date.
- b. Sample time.
- c. A notation describing if the Permittee collected the sample within the first 12 hours of *stormwater* discharge events; or, if it is unknown (e.g., discharge was occurring during start of regular business hours).
- d. An explanation of why the Permittee could not collect a sample within the first 12 hours of a *stormwater discharge* event, if it was not possible. Or, if it is unknown, an explanation of why the Permittee does not know if a sample was collected within or outside the first 12 hours of stormwater discharge.
- e. Sample location (using SWPPP identifying number).
- f. Method of sampling, and method of sample preservation, if applicable.
- g. Individual who performed the sampling.
- h. Weather conditions.

4. Laboratory Documentation

The Permittee shall retain laboratory reports on-site for *Ecology* review and shall ensure that all laboratory reports providing data for all parameters include the following information:

- a. Date of analysis.
- b. Parameter name.
- c. CAS number, if applicable.
- d. Analytical method(s).
- e. Individual who performed the analysis.
- f. Method detection limit (MDL).
- g. Laboratory *quantitation level* (QL) achieved by the laboratory.

- h. Reporting units.
 - i. Sample result.
 - j. Quality assurance/quality control data.
5. The Permittee shall maintain the original records onsite and make them available to *Ecology* upon request.
 6. The Permittee may suspend sampling for one or more parameters (other than “visible oil sheen”) for a period of three years (12 quarters) based on consistent attainment of *benchmark* values when:
 - a. Eight consecutive quarterly samples demonstrate a reported value equal to or less than the *benchmark* value; or for pH, within the range of 5.0 – 9.0.
 - b. For purposes of tallying “consecutive quarterly samples”:
 - i. Do not include any quarters in which the Permittee did not collect a sample, but should have (e.g., discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter). If this occurs, the tally of consecutive quarterly samples is reset to zero.
 - ii. Do not include any quarters in which the Permittee did not collect a sample because there was no *discharge* during the quarter (or the discharges during the quarter occurred outside normal working hours or during unsafe conditions). These quarters are not included in the calculation of eight consecutive quarters, but do not cause the tally to be reset; i.e., they are skipped over.
 - c. Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and “visible oil sheen”) and compare the average value to the *benchmark* value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the *daily average* of the individual grab sample results collected during that 24-hour period; then use the *daily average* to calculate a quarterly average.
 7. A Permittee who has a *significant process change* shall not use previous sampling results to demonstrate consistent attainment.
 8. Suspension of sampling based on consistent attainment *does not* apply to *pollutant* parameters subject to numeric effluent limits based on federal Effluent Limitation Guidelines (Condition S5.C) or Section 303(d) of the *Clean Water Act* (Condition S6).

C. Analytical Procedures for Sampling Requirements

The Permittee shall ensure that analytical methods used to meet the sampling requirements in this permit conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136, unless specified otherwise in this permit.

D. Laboratory Accreditation

1. The Permittee shall ensure that all analytical data required by *Ecology* is prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC.
2. *Turbidity* and pH are exempt from this requirement, unless the laboratory must be registered or accredited for any other parameter.

S5. BENCHMARKS, EFFLUENT LIMITATIONS, AND SPECIFIC SAMPLING REQUIREMENTS

A. Benchmarks and Sampling Requirements

1. Permittees shall sample their *stormwater discharges* as specified in Condition S4 and as specified in [Table 2](#).
2. Additional sampling and/or requirements apply to specific industrial categories (S5.B), and facilities subject to effluent limitation guidelines (S5.C), and certain discharges to impaired waters (S6).
3. If a Permittee's discharge exceeds a *benchmark* listed in [Table 2](#), the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter (except pH and “visible oil sheen”) and compare the average value to the *benchmark* to determine if the discharge has exceeded a *benchmark* value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the *daily average* of the individual grab sample results collected during that 24-hour period; then use the *daily average* to calculate a quarterly average.

Table 2: Benchmarks and Sampling Requirements Applicable to All Facilities

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	Between 5.0 and 9.0	Meter/Paper ^c	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	1/quarter
Zinc, Total	µg/L	117	EPA 200.8	2.5	1/quarter

^a. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.

^b. 1/quarter means at least one sample taken each quarter, year-round.

^c. Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

B. Additional Sampling Requirements for Specific Industrial Groups

1. In addition to the requirements in [Table 2](#), all Permittees identified by an *industrial activity* in [Table 3](#) shall sample *stormwater* discharges as specified in Condition S4 and in [Table 3](#).
2. If a *discharge* exceeds a *benchmark* listed in [Table 3](#), the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter and compare the average value to the *benchmark* to determine if it the discharge has exceeded a *benchmark*. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the *daily average* of the individual grab sample results collected during that 24-hour period; then use the *daily average* to calculate a quarterly average.

Table 3: Additional Benchmarks and Sampling Requirements Applicable to Specific Industries

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
1. Chemical and Allied Products (28xx), Food and Kindred Products (20xx)					
BOD ₅	mg/L	30	SM 5210B	2	1/quarter
Nitrate + Nitrite Nitrogen, as N	mg/L	0.68	SM4500 NO3-E/F/H	0.10	1/quarter
Phosphorus, Total	mg/L	2.0	EPA 365.1	0.10	1/quarter
2. Primary Metals(33xx), Metals Mining (10xx), Automobile Salvage and Scrap Recycling (5015 and 5093), Metals Fabricating (34xx)					
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Petroleum Hydrocarbons (Diesel Fraction)	mg/L	10	NWTPH-Dx	0.1	1/quarter
3. Hazardous Waste Treatment, Storage and Disposal Facilities and Dangerous Waste Recyclers subject to the provisions of Resource Conservation and Recovery Act (RCRA) Subtitle C					
Chemical Oxygen Demand (COD)	mg/L	120	SM5220-D	10	1/quarter
Total Ammonia (as N)	mg/L	2.1	SM4500-NH3- GH	0.3	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter
Arsenic, Total	µg/L	150	EPA 200.8	0.5	1/quarter
Cadmium, Total	µg/L	2.1	EPA 200.8	0.25	1/quarter
Cyanide, Total	µg/L	22	EPA 335.4	10	1/quarter
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Magnesium, Total	µg/L	64	EPA 200.8	50	1/quarter
Mercury, Total	µg/L	1.4	EPA 1631E	0.0005	1/quarter
Selenium, Total	µg/L	5.0	EPA 200.8	1.0	1/quarter
Silver, Total	µg/L	3.8	EPA 200.8	0.2	1/quarter
Petroleum Hydrocarbons (Diesel Fraction)	mg/L	10	NWTPH-Dx	0.1	1/quarter
4. Air Transportation^c (45xx)					
Total Ammonia (as N)	mg/L	2.1	SM4500-NH3- GH	0.3	1/quarter
BOD ₅	mg/L	30	SM 5210B	2	1/quarter
COD	mg/L	120	SM5220-D	10	1/quarter
Nitrate + Nitrite Nitrogen, as N	mg/L	0.68	SM 4500-NO3-E/F/H	0.10	1/quarter
Petroleum Hydrocarbons (Diesel Fraction)	mg/L	10	NWTPH-Dx	0.1	1/quarter

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
5. Timber Product Industry (24xx), Paper and Allied Products (26xx)					
COD	mg/L	120	SM5220-D	10	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter
6. Transportation (40xx – 44xx, except 4221-25), Petroleum Bulk Stations and Terminals (5171)					
Petroleum Hydrocarbons (Diesel Fraction)	mg/L	10	NWTPH-Dx	0.1	1/quarter

- a. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.
- b. 1/quarter means at least one sample taken each quarter, year-round.
- c. For airports where a single Permittee, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor these additional five parameters in those *discharge points* that collect runoff from areas where deicing activities occur (SIC 4512-4581).

C. Landfills and Airports Subject to Effluent Limitation Guidelines

1. Permittees with discharges from the following activities shall comply with the effluent limits and monitor as specified in Condition S4 and [Tables 4](#) and [5](#).
2. The *discharge* of the *pollutants* at a level more than that identified and authorized by this permit for these activities shall constitute a violation of the terms and conditions of this permit.
3. Permittees operating non-hazardous waste *landfills* subject to the provisions of 40 CFR Part 445 Subpart B shall not exceed the effluent limits⁴ listed in [Table 4](#).

⁴ As set forth in 40 CFR Part 445 Subpart B, these numeric effluent limits apply to contaminated *stormwater* discharges from Municipal Solid Waste Landfills that have not been closed in accordance with 40 CFR 258.60, and to contaminated *stormwater* discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities: (a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill; (b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation; (c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or (d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Table 4: Effluent Limits Applicable to Non-Hazardous Waste Landfills Subject to 40 CFR Part 445 Subpart B

Parameter	Units	Average Monthly ^a	Maximum Daily ^b	Analytical Method ^c	Laboratory Quantitation Level ^d	Minimum Sampling Frequency ^e
BOD ₅	mg/L	37	140	EPA 405.1 or SM 5210B	2	1/quarter
TSS	mg/L	27	88	SM2540-D	5	1/quarter
Total Ammonia (as N)	mg/L	4.9	10	SM4500-NH3-GH.	0.3	1/quarter
Alpha Terpineol	µg/L	16	33	EPA 625	5	1/quarter
Benzoic Acid	µg/L	71	120	EPA 625	50	1/quarter
p-Cresol (4-methylphenol)	µg/L	14	25	EPA 8270D	10 µg/L	1/quarter
Phenol	µg/L	15	26	EPA 625	4.0	1/quarter
Zinc, Total	µg/L	110	200	EPA 200.8	2.5	1/quarter
pH	SU	Between 6.0 and 9.0		Meter	±0.1	1/quarter

- ^a. Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. If only one sample is taken during the calendar month, the average monthly effluent limitation applies to that sample. If only one sample is taken during the reporting period, the average monthly effluent limitation applies to that sample.
- ^b. Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day; this does not apply to pH.
- ^c. Or other equivalent EPA-approved method with the same or lower quantitation level.
- ^d. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the discharge monitoring report.
- ^e. 1/quarter means at least one sample taken each quarter, year-round.

4. Permittees operating airlines and airports subject to provisions of 40 CFR Part 449 shall comply with the following:
 - a. *Airfield Pavement Deicing*. Existing and new primary airports with 1,000 or more annual jet departures (*annual non-propeller aircraft departures*) that discharge wastewater associated with *airfield pavement deicing* commingled with stormwater must either use non-urea-containing deicers⁵, or meet the effluent limit in [Table 5](#) at every *discharge point*, prior to any dilution or any commingling with any non-*deicing* discharge.

Table 5: Effluent Limit Applicable to Airports Subject to 40 CFR Part 449

Parameter	Units	Maximum Daily ^a	Analytical Method ^b	Laboratory Quantitation Level ^c	Minimum Sampling Frequency ^d
Total Ammonia (as N)	mg/L	14.7	SM4500-NH3-GH.	0.3	1/quarter

- a. Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day.
- b. Or other equivalent EPA-approved method with the same or lower quantitation level.
- c. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.
- d. 1/quarter means at least one sample taken each quarter, year-round.

D. Conditionally Authorized Non-Stormwater Discharges

1. The categories and sources of non-*stormwater* discharges identified in Condition S5.D.2, below, are conditionally authorized, provided:
 - a. The *discharge* is otherwise consistent with the terms and conditions of this permit, including Condition S5, S6 and S10.
 - b. The Permittee conducts the following assessment for each non-*stormwater discharge* (except for S5.D.2.a & f) and documents the assessment in the SWPPP, consistent with Condition S3.B.2. The Permittee shall:
 - i. Identify each source.
 - ii. Identify the location of the discharge into the *stormwater* collection system.
 - iii. Characterize the discharge including estimated flows or flow volume, and likely *pollutants* which may be present.
 - iv. Evaluate and implement available and reasonable *source control BMPs* to reduce or eliminate the discharge.

⁵ Affected Permittees must certify in its annual report that it does not use *airfield deicing* products that contain urea, or meet the numeric limit in [Table 5](#) (Condition S9.B.4).

- v. Evaluate compliance of the *discharge* with the state *water quality standards*.
 - vi. Identify appropriate BMPs for each discharge to control *pollutants* and or flow volumes.
2. Conditionally authorized non-*stormwater* discharges include:
- a. Discharges from fire fighting activities.
 - b. Fire protection system flushing, testing, and maintenance.
 - c. Discharges of potable water including water line flushing, provided that water line flushing must be de-chlorinated prior to discharge.
 - d. Uncontaminated air conditioning or compressor condensate.
 - e. Landscape watering and irrigation drainage.
 - f. Uncontaminated *ground water* or spring water.
 - g. Discharges associated with dewatering of foundations, footing drains, or utility vaults where flows are not contaminated with process materials such as solvents.
 - h. Incidental windblown mist from cooling towers that collects on rooftops or areas adjacent to the cooling tower. This does not include intentional discharges from cooling towers such as piped cooling tower blow down or drains.

E. Prohibited Discharges

Unless authorized by a separate NPDES or state waste *discharge* permit, the following discharges are prohibited:

- 1. The discharge of *process wastewater* is not authorized. *Stormwater* that commingles with *process wastewater* is considered *process wastewater*.
- 2. *Illicit discharges* are not authorized by this permit. Conditionally authorized non-*stormwater* discharges in compliance with Condition S5.D are not *illicit discharges*.

F. General Prohibitions

Permittees shall manage *stormwater* to prevent the *discharge* of:

- 1. Synthetic, natural or processed oil or oil-containing products as identified by an oil sheen; and
- 2. Trash and floating debris.

S6. DISCHARGES TO IMPAIRED WATERS

A. General Requirements for Discharges to Impaired Waters

Permittees that *discharge* to an impaired *waterbody*, either directly or indirectly through a *stormwater drainage system*, shall conduct sampling and inspections in accordance with Conditions S4, S5, S6, and S7.

B. Eligibility for Coverage of New Discharges to Impaired Waters

Facilities that meet the definition of “*new discharger*” and *discharge* to a *303(d)-listed waterbody* (Category 5), an impaired waterbody with an *applicable TMDL* (Category 4A), or a pollution control program for sediment cleanup (i.e., a Category 4B sediment-impaired waterbody) are not eligible for coverage under this permit unless the *facility*:

1. Prevents all exposure to *stormwater* of the *pollutant(s)* for which the waterbody is impaired, and retains documentation of procedures taken to prevent exposure onsite with its SWPPP; or
2. Documents that the *pollutant(s)* for which the waterbody is impaired is not present at the *facility*, and retains documentation of this finding with the SWPPP; or
3. Provides *Ecology* with data to support a showing that the *discharge* is not expected to cause or contribute to an exceedance of a water quality standard, and retain such data onsite with its SWPPP. The *facility* must provide data and other technical information to *Ecology* sufficient to demonstrate:
 - a. For discharges to waters without an *EPA* approved or established *TMDL*, that the *discharge* of the *pollutant* for which the water is impaired will meet instream water quality criteria at the point of discharge to the waterbody; or
 - b. For discharges to waters with an *EPA* approved or established *TMDL*, that there are sufficient remaining *wasteload allocations* in an *EPA* approved or established *TMDL* to allow industrial *stormwater discharge* and that existing *dischargers* to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with *water quality standards*.

Facilities are eligible for coverage under this permit if *Ecology* issues permit coverage based upon an affirmative determination that the *discharge* will not cause or contribute to the existing impairment.

C. Additional Sampling Requirements and Effluent Limits for Discharges to Certain Impaired Waters and Puget Sound Sediment Cleanup Sites

1. Permittees discharging to a *303(d)-listed waterbody* (Category 5), either directly or indirectly through a *stormwater drainage system*, shall comply with the applicable sampling requirements and numeric effluent limits in [Table 6](#). If a *discharge point* is subject to an impaired waterbody effluent limit (Condition S6.C) for a parameter that also has a benchmark, the effluent limit supersedes the benchmark.
 - a. Facilities subject to these limits include, but may not be limited to, facilities listed in Appendix 4.
 - b. For purposes of this condition, “applicable sampling requirements and effluent limits” means the sampling and effluent limits in [Table 6](#) that correspond to the specific parameter(s) the receiving water is *303(d)-listed* for at the time of permit coverage, or Total Suspended Solids (TSS) if the waterbody is *303(d)-listed* (Category 5) for *sediment* quality at the time of permit coverage.

- c. For *discharge points* not subject to a TSS effluent limit under the 2010 ISGP, the TSS effluent limit in [Table 6](#) does not become effective until January 1, 2017. However, TSS sampling and reporting is effective January 2, 2015; or, for Permittees with an effective date of permit coverage after January 2, 2015, the first full quarter following permit coverage.

Table 6: Sampling and Effluent Limits Applicable to Discharges to 303(d)-listed Waters

Parameter	Units	Maximum Daily ^a		Analytical Method ^b	Laboratory Quantitation Level ^c	Sampling Frequency ^d
		Freshwater	Marine			
Turbidity	NTUs	25	25	EPA 180.1 Meter	0.5	1/quarter
pH	SU	^j	Between 7.0 and 8.5	Meter	±0.1	1/quarter
Fecal Coliform Bacteria	# colonies/100 mL	ⁱ	ⁱ	SM 9222D	20 CFU/100 mL	1/quarter
TSS ^f	mg/L	30	30	SM2540-D	5	1/quarter
Phosphorus, Total	mg/L	^g	^g	EPA 365.1	0.01	1/quarter
Total Ammonia (as N)	mg/L	^g	^g	SM 4500 NH ₃ -GH	0.3	1/quarter
Copper, Total	µg/L	^g	^g	EPA 200.8	2.0	1/quarter
Lead, Total	µg/L	^g	^g	EPA 200.8	0.5	1/quarter
Mercury, Total	µg/L	2.1	1.8	EPA1631E	0.0005	1/quarter
Zinc, Total	µg/L	^g	^g	EPA 200.8	2.5	1/quarter
Pentachlorophenol	µg/L	9 ^h	^g	EPA 625	1.0	1/quarter

^a Maximum daily effluent limit means the highest allowable daily discharge. The daily *discharge* means the *discharge of a pollutant* measured during a calendar day. The daily discharge is the average measurement of the *pollutant* over the day; this does not apply to pH.

^b Or other equivalent method with the same reporting level.

^c The Permittee shall ensure laboratory results comply with the *quantitation level* (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.

^d 1/quarter means at least one sample taken each quarter, e.g., Q1 = Jan 1 – March 31, Q2 = April 1 – June 30.

^e Permittees shall use either a calibrated pH meter consistent with EPA 9040 or an approved state method.

^f Permittees who discharge to a waterbody 303(d)-listed (Category 5) for *sediment* quality shall sample the *discharge* for TSS.

^g Site-specific effluent limitation will be assigned at the time of permit coverage.

^h Based on a pH of 7.0.

ⁱ A numeric effluent limit does not apply, but Permittees must sample according to [Table 6](#). In addition, the following mandatory BMPs shall be incorporated into the SWPPP and implemented; the Permittee must:

- 1) Use all known, available and reasonable methods to prevent rodents, birds, and other animals from feeding/nesting/roosting at the facility. Nothing in this section shall be construed as allowing violations of any applicable federal, state or local statutes, ordinances, or regulations including the Migratory Bird Treaty Act.
- 2) Perform at least one annual dry weather inspection of the stormwater system to identify and eliminate sanitary sewer cross-connections.
- 3) Install structural source control BMPs to address on-site activities and sources that could cause bacterial contamination (e.g., dumpsters, compost piles, food waste, and animal products).
- 4) Implement operational source control BMPs to prevent bacterial contamination from any known sources of fecal coliform bacteria (e.g., animal waste).

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- 5) Conduct additional bacteria-related sampling and/or BMPs, if ordered by Ecology on a case-by-case basis.
- j. The effluent limit for a Permittee who discharges to a freshwater body 303(d)-listed for pH is: Between 6.0 and 8.5, if the 303(d)-listing is for high pH only; Between 6.5 and 9.0, if the 303(d)-listing is for low pH only; and Between 6.5 and 8.5 if the 303(d)-listing is for both low and high pH. All pH effluent limits are applied end-of-pipe.
2. Permittees discharging to a *Puget Sound Sediment Cleanup Site*⁶, either directly or indirectly through a *stormwater drainage system*, shall comply with this section:
 - a. Permittees shall sample the discharge for Total Suspended Solids (TSS) in accordance with [Table 7](#).
 - b. If the waterbody is listed within Category 5 (sediment medium) where the *outfall* discharges to the waterbody, the discharge is subject to the TSS numeric effluent limit in S6.C.1.c and [Table 6](#).
 - c. If the waterbody is not listed within Category 5 (sediment medium) where the *outfall* discharges to the waterbody, the discharge is subject to the TSS *benchmark* in [Table 7](#). If the discharge is subject to more than one TSS benchmark value, the lower benchmark supersedes the higher one. Beginning January 1, 2017, if a *discharge* exceeds the TSS benchmark, the Permittee shall comply with Condition S8.

Table 7: Benchmarks and Sampling Requirements Applicable to Discharges to Puget Sound Sediment Cleanup Sites that are not Category 5 for Sediment Quality

Parameter	Units	Benchmark Value ^a	Analytical Method	Laboratory Quantitation Level ^b	Minimum Sampling Frequency ^c
TSS	mg/L	30	SM2540-D	5	1/quarter

- a. Permittees sampling more than once per quarter shall average the sample results and compare the average value to the benchmark to determine if it the discharge has exceeded the benchmark value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the daily average of the individual grab sample results collected during that 24-hour period; then use the daily average to calculate a quarterly average.
- b. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.
- c. 1/quarter means at least one sample taken each quarter, year-round.

⁶**Puget Sound Sediment Cleanup Site** means: Category 4B (Sediment) portions of Budd Inlet (Inner), Commencement Bay (Inner), Commencement Bay (Outer), Dalco Passage and East Passage, Duwamish Waterway (including East and West Waterway), Eagle Harbor, Elliot Bay, Hood Canal (North), Liberty Bay, Rosario Strait, Sinclair Inlet, and Thea Foss Waterway; Category 5 (Sediment) portions of the Duwamish Waterway (including East and West Waterway), and Port Gardner and Inner Everett Harbor; and the Port Angeles Harbor sediment cleanup area, as mapped on Ecology's ISGP website. All references to Category 4B and 5 pertain to the 2012 EPA-approved Water Quality Assessment.

- d. Permittees shall remove accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) owned or controlled by the Permittee at least once prior to October 1, 2016.

Permittees shall conduct line cleaning operations (e.g., jetting, vacuuming, removal, loading, storage, and/or transport) using BMPs to prevent discharges of storm drain solids to surface waters of the state.

Removed storm drain solids and liquids shall be disposed of in accordance with applicable laws and regulations and documented in the SWPPP.

- i. If a Permittee can demonstrate that line cleaning operations are not feasible by the October 1, 2016 deadline, Ecology may approve a time extension by approving a modification of permit coverage.
 - ii. If a Permittee can demonstrate, based on video inspection, in-line storm drain solids sampling, or other documentation, that storm drain line cleaning is not necessary to prevent downstream sediment contamination or recontamination, Ecology may waive this requirement by approving a modification of permit coverage.
 - iii. Requests for line cleaning waivers or time extensions must be accompanied by a modification of coverage form, and a detailed technical basis to support the request. The due date for line cleaning waiver and extension requests is May 15, 2016.
- e. Permittees shall sample and analyze storm drain solids in accordance with [Table 8](#) at least once prior to October 1, 2016. Storm drain solids must be collected/sampled from a representative catch basin, sump, pipe, or other feature within the storm drain system that corresponds to the *discharge point* where Total Suspended Solids (TSS) samples are collected per Condition S6.C. Samples may be either a single grab sample or a composite sample. Samples must be representative of the storm drain solids generated and accumulated in the facility's drainage system. To the extent possible, sample locations must exclude portions of the drainage system affected by water from off-site sources (e.g., run-on from off-site properties, tidal influence, backflow).
- i. If a Permittee can demonstrate that storm drain solids sampling and analysis is not feasible by the October 1, 2016 deadline, Ecology may approve a time extension by approving a modification of permit coverage.
 - ii. If a Permittee can demonstrate that storm drain solids sampling and analysis is not feasible or not necessary, Ecology may waive this requirement by approving a modification of permit coverage.
 - iii. Requests for storm drain solids sampling and analysis waivers or time extensions must be accompanied by a modification of coverage form, and a detailed technical basis to support the request. The due date for solids sampling and analysis waiver and extension requests is May 15, 2016.

Table 8: Sampling and Analytical Procedures for Storm Drain Solids

Analyte	Method in Sediment	Quantitation Level ^a
Conventional Parameters		
Percent total solids	SM 2540G, or ASTM Method D 2216	NA
Total organic carbon	Puget Sound Estuary Protocols (PSEP 1997), or EPA 9060	0.1%
Grain size	Ecology Method Sieve and Pipette (ASTM 1997), ASTM D422, or PSEP 1986/2003	NA
Metals		
Antimony, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw ^b
Arsenic, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Beryllium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Cadmium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Chromium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Copper, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Lead, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Mercury, Total	EPA Method 1631E, or EPA Method 7471B	0.005 mg/kg dw
Nickel, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Selenium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Silver, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Thallium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Zinc, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	5.0 mg/kg dw
Organics		
PAH compounds ^c	EPA Method 8270 D	70 µg/kg dw
PCBs (aroclor)s, Total ^d	EPA Method 8082	10 µg/kg dw
Petroleum Hydrocarbons		
NWTPH-Dx	NWTPH-Dx	25.0-100.0 mg/kg dw

^a. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on

the sediment monitoring report. All results shall be reported. For values below the QL, or where a QL is not specified, report results at the method detection level (MDL) from the lab and the qualifier of “U” for undetected at that concentration. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific MDL and QL on the DMR.

- b. dw = dry weight.
- c. PAH compounds include: 1-methylnaphthalene, 2-methylnaphthalene, 2-chloronaphthalene, acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b, k)fluoranthene, benzo(ghi)perylene, dibenzo(a,h)anthracene, dibenzofuran, carbazole, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- d. Total = sum of PCB aroclors 1016+1221+1232+1242+1248+1254+1260.

- f. All storm drain solids sampling data shall be reported to Ecology on a Solids Monitoring Report (SMR) no later than the DMR due date for the reporting period in which the solids were sampled, in accordance with Condition S9.A. A copy of the lab report shall be submitted to Ecology with the SMR.

D. Requirements for Discharges to Waters with Applicable TMDLs

1. The Permittee shall comply with *applicable TMDL* determinations. *Applicable TMDLs* or *TMDL* determinations are *TMDLs* which have been completed by the issuance date of this permit, or which have been completed prior to the date that the Permittee's *application* is received by *Ecology*, whichever is later. *Ecology* will list the Permittee's requirements to comply with this condition on the letter of permit coverage.
2. *TMDL* requirements associated with *TMDLs* completed after the issuance date of this permit only become effective if they are imposed through an administrative order issued by *Ecology*.
3. Where *Ecology* has established a *TMDL wasteload allocation* and sampling requirements for the Permittee's discharge, the Permittee shall comply with all requirements of the *TMDL* as listed in Appendix 5.
 - a. If a *discharge point* is subject to a *TMDL*-related effluent limit (Condition S6.D) for a parameter that also has a benchmark (Condition S5), the effluent limit supersedes the benchmark.
4. Where *Ecology* has established a *TMDL general wasteload allocation* for industrial *stormwater* discharges for a parameter present in the Permittee's discharge, but has not identified specific requirements, *Ecology* will assume the Permittee's compliance with the terms and conditions of the permit complies with the approved *TMDL*.
5. Where *Ecology* has not established a *TMDL wasteload allocation* for industrial *stormwater* discharges for a parameter present in the Permittee's discharge, but has not excluded these discharges, *Ecology* will assume the Permittee's compliance with the terms and conditions of this permit complies with the approved *TMDL*.
6. Where a *TMDL* for a parameter present in the Permittee's *discharge* specifically precludes or prohibits discharges of *stormwater* associated with *industrial activity*, the Permittee is not eligible for coverage under this permit.

S7. INSPECTIONS

A. Inspection Frequency and Personnel

1. The Permittee shall conduct and document visual inspections of the site each month.
2. The Permittee shall ensure that inspections are conducted by *qualified personnel*.

B. Inspection Components

Each inspection shall include:

1. Observations made at *stormwater* sampling locations and areas where *stormwater* associated with *industrial activity* is discharged off-site; or discharged to *waters of the state*, or to a *storm sewer* system that drains to *waters of the state*.
2. Observations for the presence of floating materials, visible oil sheen, discoloration, *turbidity*, odor, etc. in the *stormwater* discharge(s).
3. Observations for the presence of *illicit discharges* such as *domestic wastewater*, *noncontact cooling water*, or *process wastewater* (including *leachate*).
 - a. If an *illicit discharge* is discovered, the Permittee shall notify *Ecology* within seven days.
 - b. The Permittee shall eliminate the *illicit discharge* within 30 days.
4. A verification that the descriptions of potential *pollutant* sources required under this permit are accurate.
5. A verification that the site map in the SWPPP reflects current conditions.
6. An assessment of all BMPs that have been implemented, noting all of the following:
 - a. Effectiveness of BMPs inspected.
 - b. Locations of BMPs that need maintenance.
 - c. Reason maintenance is needed and a schedule for maintenance.
 - d. Locations where additional or different BMPs are needed and the rationale for the additional or different BMPs.

C. Inspection Results

1. The Permittee shall record the results of each inspection in an inspection report or checklist and keep the records on-site, as part of the SWPPP, for *Ecology* review. The Permittee shall ensure each inspection report documents the observations, verifications and assessments required in S7.B and includes:
 - a. Time and date of the inspection.
 - b. Locations inspected.
 - c. Statements that, in the judgment of 1) the person conducting the site inspection, and 2) the person described in Condition G2., the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and this permit.

- d. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.
- e. Name, title, and signature of the person conducting site inspection; and the following statement: "I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."
- f. Certification and signature of the person described in Condition G2.A, or a duly authorized representative of the *facility*, in accordance with Condition G2.B and D.

D. Reports of Non-Compliance

The Permittee shall prepare reports of non-compliance identified during an inspection in accordance with the requirements of Condition S9.E.

S8. CORRECTIVE ACTIONS

A. Implementation of Source Control and Treatment BMPs from Previous Permit

In addition to the Corrective Action Requirements of S8.B-D, Permittees shall implement any applicable Level 1, 2 or 3 Responses required by the previous Industrial Stormwater *General Permit(s)*. Permittees shall continue to operate and/or maintain any source control or *treatment BMPs* related to Level 1, 2 or 3 Responses implemented prior to the effective date of this permit.

B. Level One Corrective Actions – Operational Source Control BMPs

Permittees that exceed any applicable *benchmark* value(s) in [Table 2](#), [Table 3](#) and/or [Table 7](#) for any quarter shall complete a Level 1 Corrective Action for each parameter exceeded in accordance with the following:

1. Within 14 days of receipt of sampling results that indicate a benchmark exceedance for a given quarter ⁷; or, for parameters other than pH or visible oil sheen, the end of the quarter, whichever is later:
 - a. Conduct an inspection to investigate the cause.
 - b. Review the SWPPP and ensure that it fully complies with Permit Condition S3, and contains the correct BMPs from the applicable *Stormwater Management Manual*.
 - c. Make appropriate revisions to the SWPPP to include additional *Operational Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges.
2. Summarize the Level 1 Corrective Actions in the Annual Report (Condition S9.B).

⁷ Based on quarterly average per Condition S5.A.3, S5.B.2 and/or S6.C.2.c. For pH and visible oil sheen, quarterly averaging is not allowed, so the 14 days begin upon receipt of a single benchmark exceedance.

3. **Level One Deadline:** The Permittee shall sign/certify and fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than the DMR due date for the quarter the *benchmark* was exceeded.

C. Level Two Corrective Actions – Structural Source Control BMPs

Permittees that exceed an applicable *benchmark* value in [Table 2](#), [Table 3](#) and/or [Table 7](#) (for a single parameter) for any two quarters during a calendar year shall complete a Level 2 Corrective Action in accordance with S8.C. Alternatively, the Permittee may skip Level 2 and complete a Level 3 Corrective Action in accordance with Condition S8.D.

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges.
3. Summarize the Level 2 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).
4. **Level 2 Deadline:** The Permittee shall sign/certify and fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than August 31st the following year.
 - a. If installation of necessary *Structural Source Control BMPs* is not feasible by August 31st the following year, *Ecology* may approve additional time by approving a *Modification of Permit Coverage*.
 - b. If installation of *Structural Source Control BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard, *Ecology* may waive the requirement for additional *Structural Source Control BMPs* by approving a *Modification of Permit Coverage*.
 - c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a *Modification of Coverage* form to *Ecology* in accordance with Condition S2.B, by May 15th prior to Level 2 Deadline. *Ecology* will approve or deny the request within 60 days of receipt of a complete *Modification of Coverage* request.
 - d. While a time extension is in effect, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.
 - e. For the year following the calendar year the Permittee triggered a Level 2 corrective action, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.

D. Level Three Corrective Actions – Treatment BMPs

Permittees that exceed an applicable *benchmark* value in [Table 2](#), [Table 3](#) and/or [Table 7](#) (for a single parameter) for any three quarters during a calendar year shall complete a

Level 3 Corrective Action in accordance with S8.D. A Level 2 Corrective Action is not required.

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. Revisions shall include additional operational and/or structural source control BMPs if necessary for proper performance and maintenance of *Treatment BMPs*.

A *Qualified Industrial Stormwater Professional* shall review the revised SWPPP, sign the SWPPP Certification Form, and certify that it is reasonably expected to meet the ISGP benchmarks upon implementation. Upon written request Ecology may, one time during the permit cycle, waive this requirement on a case-by-case basis if a Permittee demonstrates to Ecology's satisfaction that the proposed Level 3 treatment BMPs are reasonably expected to meet ISGP benchmarks upon implementation.

3. Before installing treatment BMPs that require the site-specific design or sizing of structures, equipment, or processes to collect, convey, treat, reclaim, or dispose of industrial stormwater; the Permittee shall submit an engineering report to Ecology for review.
 - a. The engineering report must include:
 - i. Brief summary of the treatment alternatives considered and why the proposed option was selected. Include cost estimates of ongoing operation and maintenance, including disposal of any spent media;
 - ii. The basic design data, including characterization of stormwater influent, and sizing calculations of the treatment units;
 - iii. A description of the treatment process and operation, including a flow diagram;
 - iv. The amount and kind of chemicals used in the treatment process, if any. Note: Use of stormwater treatment chemicals requires submittal of Request for Chemical Treatment Form;
 - v. Results to be expected from the treatment process including the predicted stormwater discharge characteristics;
 - vi. A statement, expressing sound engineering justification through the use of pilot plant data, results from similar installations, and/or scientific evidence that the proposed treatment is reasonably expected to meet the permit benchmarks; and
 - vii. Certification by a licensed professional engineer.
 - b. The engineering report shall be submitted no later than the May 15th prior to the Level 3 deadline, unless an alternate due date is specified in an order.
 - c. An Operation and Maintenance Manual (O&M Manual) shall be submitted to Ecology no later than 30 days after construction/installation is complete; unless an alternate due date is specified in an order.

4. Summarize the Level 3 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B). Include information on how monitoring, assessment or evaluation information was (or will be) used to determine whether existing treatment BMPs will be modified/enhanced, or if new/additional treatment BMPs will be installed.
5. **Level 3 Deadline:** The Permittee shall sign/certify and fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30th the following year.
 - a. If installation of necessary *Treatment BMPs* is not feasible by the Level 3 Deadline; *Ecology* may approve additional time by approving a *Modification of Permit Coverage*.
 - b. If installation of *Treatment BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard, *Ecology* may waive the requirement for *Treatment BMPs* by approving a *Modification of Permit Coverage*.
 - c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a Modification of Coverage form to *Ecology* in accordance with Condition S2.B, by May 15th prior to the Level 3 Deadline. *Ecology* will approve or deny the request within 60 days of receipt of a complete *Modification of Coverage* request.
 - d. While a time extension is in effect, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.
 - e. For the year following the calendar year the Permittee triggered a Level 3 corrective action, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.

S9. REPORTING AND RECORDKEEPING

A. Discharge Monitoring Reports

1. The Permittee shall submit sampling data obtained during each reporting period on a Discharge Monitoring Report (DMR) or a Solids Monitoring Form (SMR)⁸ form provided, or otherwise approved, by *Ecology*.
2. Upon permit coverage, the Permittee shall ensure that DMRs are submitted to *Ecology* by the DMR Due Dates below:

Table 9: Reporting Dates and DMR Due Dates

Reporting Period	Months	DMR Due Date
1 st	January-March	May 15
2 nd	April-June	August 15
3 rd	July-Sept	November 15
4 th	October-December	February 15

⁸ SMR required if Condition S6.C.2 applies.

S9.A.3

3. DMRs and SMRs shall be submitted electronically using *Ecology's* Water Quality Permitting Portal – Discharge Monitoring Report (DMR) application, unless a waiver from electronic reporting has been granted (e.g., if a Permittee does not have broadband internet access). SMR forms, identified as a single sample DMR type, are included with the quarterly DMR forms on the Portal. If a waiver has been granted, reports must be postmarked or delivered to the following address by the due date:

Department of Ecology
Water Quality Program – Industrial Stormwater
PO Box 47696
Olympia, WA 98504-7696

4. The Permittee shall submit a DMR each reporting period, whether or not the *facility* has discharged *stormwater* from the site. For Permittees that receive permit coverage after January 2, 2015, the first reporting period is the first full quarter following the effective date of permit coverage.
 - a. If no *stormwater* sample was obtained from the site during a given reporting period, the Permittee shall submit the DMR form indicating “no sample obtained”, or “no discharge during the quarter”, as applicable.
 - b. If a Permittee has suspended sampling for a parameter due to consistent attainment, the Permittee shall submit a DMR and indicate that it has achieved Consistent Attainment for that parameter(s).
5. The Permittee must use the Water Quality Permitting Portal – Permit Submittals application (unless otherwise specified in the permit) to submit all other written permit-required reports by the date specified in the permit unless a waiver has been granted under S9.A. If a waiver has been granted, DMRs must be postmarked or delivered to the address listed in S9.A.3 by the due date.

B. Annual Reports

1. The Permittee shall submit a complete and accurate Annual Report to the Department of *Ecology* no later than May 15th of each year using *Ecology's* Water Quality Permitting Portal – Permit Submittals application, unless a waiver from electronic reporting has been granted according to S9.A.3. Annual Reports are not required if the Permittee didn't have permit coverage during the previous calendar year.
2. The annual report shall include corrective action documentation as required in S8.B-D. If corrective action is not yet completed at the time of submission of this annual report, the Permittee must describe the status of any outstanding corrective action(s).
3. Permittees shall include the following information with each annual report. The Permittee shall:
 - a. Identify the condition triggering the need for corrective action review.
 - b. Describe the problem(s) and identify the dates they were discovered.
 - c. Summarize any Level 1, 2 or 3 corrective actions completed during the previous calendar year and include the dates it completed the corrective actions.

- d. Describe the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, and identify the date it expects to complete corrective actions.
 - e. Primary airport Permittees with at least 1,000 annual jet departures shall include a certification statement in each annual report that it does not use *airfield deicing* products that contain urea. Alternatively, Permittees shall meet the numeric effluent limit for ammonia in Condition S5.C. [Table 5](#).
4. Permittees shall retain a copy of all annual reports onsite for *Ecology* review.

C. Records Retention

1. The Permittee shall retain the following documents onsite for a minimum of five years:
 - a. A copy of this permit.
 - b. A copy of the permit coverage letter.
 - c. Records of all sampling information specified in Condition S4.B.3.
 - d. Inspection reports including documentation specified in Condition S7.
 - e. Any other documentation of compliance with permit requirements.
 - f. All equipment calibration records.
 - g. All BMP maintenance records.
 - h. All original recordings for continuous sampling instrumentation.
 - i. Copies of all laboratory reports as described in Condition S3.B.4.
 - j. Copies of all reports required by this permit.
 - k. Records of all data used to complete the *application* for this permit.
2. The Permittee shall extend the period of records retention during the course of any unresolved litigation regarding the *discharge of pollutants* by the Permittee, or when requested by *Ecology*.
3. The Permittee shall make all plans, documents and records required by this permit immediately available to *Ecology* or the local jurisdiction upon request; or within 14 days of a written request from *Ecology*.

D. Additional Sampling by the Permittee

If the Permittee samples any *pollutant* at a designated sampling point more frequently than required by this permit, then the Permittee shall include the results in the calculation and reporting of the data submitted in the Permittee's DMR.

If Permittees collect more than one sample during a 24-hour period, they must first calculate the *daily average* of the individual grab sample results collected during that 24-hour period; then use the *daily average* to calculate a quarterly average.

E. Reporting Permit Violations

1. In the event the Permittee is unable to comply with any of the terms and conditions of this permit which may endanger human health or the environment, or exceed any numeric effluent limitation in the permit, the Permittee shall, upon becoming aware of the circumstances:
 - a. Immediately take action to minimize potential *pollution* or otherwise stop the noncompliance and correct the problem.
 - b. Immediately notify the appropriate *Ecology* regional office of the failure to comply:
 - Central Region at (509) 575-2490 for Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, or Yakima County.
 - Eastern Region at (509) 329-3400 for Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, or Whitman County.
 - Northwest Region at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County.
 - Southwest Region at (360) 407-6300 for Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, or Wahkiakum County.
 - c. Submit a detailed written report to *Ecology* within 5 days of the time the Permittee becomes aware of the circumstances unless *Ecology* requests an earlier submission. The report shall be submitted using *Ecology*'s Water Quality Permitting Portal – Permit Submittals application, unless a waiver from electronic reporting has been granted according to S9.A.3. The Permittee's report shall contain:
 - i. A description of the noncompliance, including exact dates and times.
 - ii. Whether the noncompliance has been corrected and, if not, when the noncompliance will be corrected.
 - iii. The steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - d. Upon request of the Permittee, Ecology may waive the requirement for a written report on a case-by-case basis, if the immediate notification (S9.E.1.b) is received by Ecology within 24 hours.
2. Compliance with the requirements of this section does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

F. Public Access to SWPPP

The Permittee shall provide access to, or a copy of, the SWPPP to the public when requested in writing. Upon receiving a written request from the public for the SWPPP, the Permittee shall:

1. Provide a copy of the SWPPP to the requestor within 14 days of receipt of the written request; or
2. Notify the requestor within ten days of receipt of the written request of the location and times within normal business hours when the requestor may view the SWPPP, and provide access to the SWPPP within 14 days of receipt of the written request; or
3. Provide a copy of the plans and records to *Ecology*, where the requestor may view the records, within 14 days of a request; or may arrange with the requestor for an alternative, mutually agreed upon location for viewing and/or copying of the plans and records. If access to the plans and records is provided at a location other than at an *Ecology* office, the Permittee will provide reasonable access to copying services for which it may charge a reasonable fee.

S10. COMPLIANCE WITH STANDARDS

- A. Discharges shall not cause or contribute to a violation of *Surface Water Quality Standards* (Chapter 173-201A WAC), *Ground Water Quality Standards* (Chapter 173-200 WAC), *Sediment Management Standards* (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 *CFR* 131.36). Discharges that are not in compliance with these standards are prohibited.
- B. *Ecology* will presume compliance with *water quality standards*, unless *discharge* monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of *water quality standards*, when the Permittee is:
 1. In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.
 2. Fully implementing storm water *best management practices* contained in storm water technical manuals approved by the department, or practices that are *demonstrably equivalent* to practices contained in storm water technical manuals approved by *Ecology*, including the proper selection, implementation, and maintenance of all applicable and appropriate *best management practices* for on-site *pollution* control.
- C. Prior to the *discharge* of *stormwater* and non-stormwater to *waters of the state*, the Permittee shall apply all known and reasonable methods of prevention, control, and treatment (*AKART*). To comply with this condition, the Permittee shall prepare and implement an adequate SWPPP, with all applicable and appropriate BMPs, including the BMPs necessary to meet the standards identified in Condition S10.A, and shall install and maintain the BMPs in accordance with the SWPPP, applicable SWMMs, and the terms and conditions of this permit.

S11. PERMIT FEES

- A. The Permittee shall pay permit fees assessed by *Ecology* and established in Chapter 173-224 WAC.
- B. *Ecology* will continue to assess permit fees until it terminates a permit in accordance with Special Condition S13 or revoked in accordance with General Condition G5.

S12. SOLID AND LIQUID WASTE MANAGEMENT

The Permittee shall not allow solid waste material or *leachate* to cause violations of the State Surface *Water Quality Standards* (Chapter 173-201A WAC), the *Ground Water Quality Standards* (Chapter 173-200 WAC) or the Sediment Management Standards (Chapter 173-204 WAC).

S13. NOTICE OF TERMINATION (NOT)

A. Conditions for a NOT

Ecology may approve a *Notice of Termination* (NOT) request when the Permittee meets one or more of the following conditions:

1. All permitted *stormwater* discharges associated with *industrial activity* that are authorized by this permit cease because the *industrial activity* has ceased, and no *significant materials* or industrial *pollutants* remain exposed to *stormwater*.
2. The party that is responsible for permit coverage (signatory to *application*) sells or otherwise legally transfers responsibility for the *industrial activity*.
3. All *stormwater* discharges associated with *industrial activity* are prevented because the *stormwater* is redirected to a *sanitary sewer*, or discharged to ground (e.g., infiltration).

B. Procedure for Obtaining Termination

1. The Permittee shall apply for a NOT on a form specified by *Ecology* (NOT Form).
2. The Permittee seeking permit coverage termination shall sign the NOT in accordance with Condition G2. of this permit.
3. The Permittee shall submit the completed NOT form to *Ecology* at the address in Condition S9.A.5.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this *general permit* shall be consistent with the terms and conditions of this *general permit*. Any *discharge* of any *pollutant* more frequently than, or at a level in excess of that identified and authorized by the *general permit*, shall constitute a violation of the terms and conditions of this permit.

G2. SIGNATORY REQUIREMENTS

- A. All permit *applications* shall be signed:
1. In the case of corporations, by a *responsible corporate officer*.
 2. In the case of a partnership, by a general partner of a partnership.
 3. In the case of sole proprietorship, by the proprietor.
 4. In the case of a municipal, state, or other public *facility*, by either a principal executive officer or ranking elected official.
- B. All reports required by this permit and other information requested by *Ecology* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
1. The authorization is made in writing by a person described above and submitted to the *Ecology*.
 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated *facility*, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
- C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the *facility*, a new authorization satisfying the requirements of paragraph G2.B.2 above shall be submitted to *Ecology* prior to, or together with, any reports, information, or *applications* to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section shall make the following certification:
- “I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that *qualified personnel* properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

G3. RIGHT OF INSPECTION AND ENTRY

The Permittee shall allow an authorized representative of *Ecology*, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a *discharge* is located or where any records shall be kept under the terms and conditions of this permit.
- B. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
- C. To inspect, at reasonable times, any facilities, equipment (including sampling and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the *Clean Water Act*.

G4. GENERAL PERMIT MODIFICATION AND REVOCATION

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A. When a change which occurs in the technology or practices for control or abatement of *pollutants* applicable to the category of *dischargers* covered under this permit.
- B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of *dischargers* covered under this permit.
- C. When a water quality management plan containing requirements applicable to the category of *dischargers* covered under this permit is approved.
- D. When information is obtained which indicates that cumulative effects on the environment from *dischargers* covered under this permit are unacceptable.

G5. REVOCATION OF COVERAGE UNDER THE PERMIT

- A. Pursuant with Chapter 43.21B RCW and Chapter 173-226 WAC, *Ecology* may terminate coverage for any *discharger* under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:
 - 1. Violation of any term or condition of this permit.
 - 2. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.
 - 3. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
 - 4. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

G5.A.5

5. A determination that the permitted activity endangers human health or the environment, or contributes to *water quality standards* violations.
 6. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.
 7. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.
- B.** *Ecology* may require any *discharger* under this permit to apply for and obtain coverage under an individual permit or another more specific *general permit*.
- C.** Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within 90 days from the time of revocation and is submitted along with a complete individual permit *application* form.

G6. REPORTING A CAUSE FOR MODIFICATION

The Permittee shall submit a new *application*, or a supplement to the previous *application*, whenever a material change to the *industrial activity* or in the quantity or type of *discharge* is anticipated which is not specifically authorized by this permit. This *application* shall be submitted at least 60 days prior to any proposed changes. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G7. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G8. DUTY TO REAPPLY

The Permittee shall apply for permit renewal at least 180 days prior to the expiration date of this permit.

G9. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other *pollutants* removed in the course of treatment or control of *stormwater* shall not be resuspended or reintroduced to the final effluent stream for *discharge* to state waters.

G10. DUTY TO PROVIDE INFORMATION

The Permittee shall submit to *Ecology*, within a reasonable time, all information which *Ecology* may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The

Permittee shall also submit to *Ecology*, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. ADDITIONAL SAMPLING

Ecology may establish specific sampling requirements in addition to those contained in this permit by administrative order or permit modification.

G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of this permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G14. UPSET

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted *facility* was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in condition S9.E; and 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G15.PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G16.DUTY TO COMPLY

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the *Clean Water Act* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G17.TOXIC POLLUTANTS

The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the *Clean Water Act* for toxic *pollutants* within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G18.PENALTIES FOR TAMPERING

The *Clean Water Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate any sampling device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment shall be a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four years, or both.

G19.REPORTING PLANNED CHANGES

The Permittee shall, as soon as possible, give notice to *Ecology* of planned physical alterations, modifications or additions to the permitted *industrial activity*, which will result in:

- A. The permitted *facility* being determined to be a new source pursuant to 40 *CFR* 122.29(b).
- B. A *significant process change*, as defined in the glossary of this permit.
- C. A change in the location of *industrial activity* that affects the Permittee's sampling requirements in Conditions S3, S4, S5, and S6.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 *CFR* 122.62(a) to specify and limit any *pollutants* not previously limited. Until such modification is effective, any new or increased *discharge* in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G20.REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit *application*, or submitted incorrect information in a permit *application* or in any report to *Ecology*, it shall promptly submit such facts or information.

G21.REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee shall give advance notice to *Ecology* by submission of a new *application*, or supplement to the existing *application*, at least 45 days prior to commencement of such discharges, of any *facility* expansions, production increases, or other planned changes, such as process modifications, in the permitted *facility* or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during non-critical water quality periods and carried out in a manner approved by *Ecology*.

G22.REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT

- A. Any *discharger* authorized by this permit may request to be excluded from coverage under the *general permit* by applying for an individual permit.
- B. The *discharger* shall submit to *Ecology* an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons shall fully document how an individual permit will apply to the applicant in a way that the general permit cannot.
- C. *Ecology* may make specific requests for information to support the request. *Ecology* shall either issue an individual permit or deny the request with a statement explaining the reason for the denial.
- D. When an individual permit is issued to a *discharger* otherwise subject to the industrial *stormwater general permit*, the applicability of the industrial *stormwater general permit* to that Permittee is automatically terminated on the effective date of the individual permit.

G23.APPEALS

- A. The terms and conditions of this *general permit*, as they apply to the appropriate class of *dischargers*, are subject to appeal by any person within 30 days of issuance of this *general permit*, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B. The terms and conditions of this *general permit*, as they apply to an individual *discharger*, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that *discharger*. Consideration of an appeal of *general permit* coverage of an individual *discharger* is limited to the *general permit*'s applicability or nonapplicability to that individual *discharger*.

- C. The appeal of *general permit* coverage of an individual *discharger* does not affect any other *dischargers* covered under this *general permit*. If the terms and conditions of this *general permit* are found to be inapplicable to any individual *discharger(s)*, the matter shall be remanded to *Ecology* for consideration of issuance of an individual permit or permits.

G24.SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or *application* of any provision of this permit to any circumstance, is held invalid, the *application* of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G25.BYPASS PROHIBITED

Bypass, which is the intentional diversion of waste streams from any portion of a treatment *facility*, is prohibited, and *Ecology* may take enforcement action against a Permittee for *bypass* unless one of the following circumstances (A, B, or C) is applicable.

A. *Bypass for Essential Maintenance without the Potential to Cause Violation of Permit Limits or Conditions*

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health as determined by *Ecology* prior to the *bypass*. The Permittee must submit prior notice, if possible, at least ten days before the date of the *bypass*.

B. *Bypass Which is Unavoidable, Unanticipated, and Results in Noncompliance of this Permit*

This *bypass* is permitted only if:

1. *Bypass* is unavoidable to prevent loss of life, personal injury, or *severe property damage*. “*Severe property damage*” means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a *bypass*.
2. There are no feasible alternatives to the *bypass*, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a *bypass* which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment *facility*.
3. *Ecology* is properly notified of the *bypass* as required in condition S9E of this permit.

C. *Bypass* which is Anticipated and has the Potential to Result in Noncompliance of this Permit

The Permittee must notify *Ecology* at least thirty days before the planned date of *bypass*. The notice must contain (1) a description of the *bypass* and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of *bypass* under each alternative; (5) a recommendation as to the preferred alternative for conducting the *bypass*; (6) the projected date of *bypass* initiation; (7) a statement of compliance with SEPA; (8) a request for modification of *water quality standards* as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the *bypass*.

For probable construction bypasses, the need to *bypass* is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the engineering report or facilities plan and plans and specifications and must be included to the extent practical. In cases where the probable need to *bypass* is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the *bypass*.

Ecology will consider the following prior to issuing an administrative order for this type *bypass*:

1. If the *bypass* is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
2. If there are feasible alternatives to *bypass*, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment *facility*.
3. If the *bypass* is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed *bypass* and any other relevant factors, *Ecology* will approve or deny the request. The public must be notified and given an opportunity to comment on *bypass* incidents of significant duration, to the extent feasible. Approval of a request to *bypass* will be by administrative order issued by *Ecology* under RCW 90.48.120.

APPENDIX 1 - ACRONYMS

AKART	All Known, Available and Reasonable methods of prevention, control and Treatment
BMP	Best Management Practice
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWT	Centralized Waste Treatment
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FAA	Federal Aviation Administration
FWPCA	Federal Water Pollution Control Act
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
SARA	Superfund Amendment and Reauthorization Act
SEPA	State Environmental Policy Act
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality

APPENDIX 2 - DEFINITIONS

40 CFR means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

303(d)-listed water body means waterbodies as listed as Category 5 on Washington State's Water Quality Assessment.

Air Emission means a release of air contaminants into the ambient air.

Airfield Pavement means all paved surfaces on the *airside* of an airport.

Airside means the part of an airport directly involved in the arrival and departure of aircraft, including runways, taxiways, aprons, and ramps.

AKART is an acronym for “all known, available, and reasonable methods of prevention, control, and treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the *pollutants* and controlling *pollution* associated with a discharge.

Annual Non-propeller Aircraft Departures means the average number of commercial turbine-engine aircraft that are propelled by jet, i.e., turbojet or turbofan, that take off from an airport on an annual basis, as tabulated by the Federal Aviation Administration (FAA).

Applicable TMDL means a *TMDL* which has been completed either before the issuance date of this permit or the date the Permittee first obtains coverage under this permit, whichever is later.

Application means a request for coverage under this *general permit* pursuant to WAC 173-226-200. Also called a *Notice of Intent (NOI)*.

Average means arithmetic mean, which is equal to the sum of the measurements divided by the number of measurements.

Best Management Practices (BMPs - general definition) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the *pollution of waters of the state*. BMPs include treatment systems, operating procedures, and practices to control: facility site *runoff*, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In this permit BMPs are further categorized as operational source control, structural source control, *erosion* and *sediment* control, and *treatment BMPs*.

Benchmark means a *pollutant* concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not *water quality standards* and are not numeric effluent limitations; they are indicator values.

Bypass means the intentional diversion of waste streams from any portion of a treatment *facility*.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a *sanitary sewer* and a *storm sewer*, and into which inflow is allowed by local ordinance.

Construction Activity means clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, industrial buildings, and demolition activity.

Control Plan means a *total maximum daily load (TMDL)* determination, restrictions for the protection of state or federal threatened or endangered species, a *ground water* management plan, or other limitations that regulate or set limits on discharges to a specific waterbody or *ground water* recharge area.

Daily Average means the average measurement of the pollutant throughout a period of 24 consecutive hours starting at 12:01 A.M. and ending at the following 12:00 P.M. (midnight).

Deicing means procedures and practices to remove or prevent any accumulation of snow or ice on: 1) an aircraft; or 2) *airfield* pavement.

Demonstrably Equivalent means that the technical basis for the selection of all storm water *best management practices* are documented within a storm water *pollution* prevention plan. The storm water *pollution* prevention plan must document: 1) The method and reasons for choosing the storm water *best management practices* selected; 2) The *pollutant* removal performance expected from the practices selected; 3) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected; 4) An assessment of how the selected practices will comply with state *water quality standards*; and 5) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.

Detention means the temporary storage of *stormwater* to improve quality and/or to reduce the mass flow rate of discharge.

Discharge [of a pollutant] means any addition of any *pollutant* or combination of pollutants to waters of the United States from any point source. This definition includes additions of pollutants into waters of the United States from: surface *runoff* which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, *municipality*, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Discharge point means the location where a discharge leaves the Permittee's facility. *Discharge point* also includes the location where a discharge enters the ground on-site (e.g., infiltration BMP).

Discharger means an owner or operator of any *facility* or activity subject to regulation under Chapter 90.48 RCW or the Federal *Clean Water Act*.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such *ground water* infiltration or surface waters as may be present.

Ecology means the Washington State Department of *Ecology*.

EPA means the United States Environmental Protection Agency.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of *stormwater discharge* to surface water or to *ground water* than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs that are intended to prevent *erosion* and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and *sediment* traps and ponds.

Existing Facility means a *facility* that was in operation prior to the effective date of this permit. It also includes any *facility* that is not categorically included for coverage but is in operation when identified by *Ecology* as a *significant contributor of pollutants*.

Facility means any source (including land or appurtenances thereto) that is subject to regulation under this permit. See Special Condition S1.

First fall storm event means the first time on or after October 1st of each year that precipitation occurs and results in a *stormwater discharge* from a *facility*. This storm event tends to wash off and discharge pollutants that accumulate during the preceding dry months.

General Permit means a permit which covers multiple *dischargers* of a point source category within a designated geographical area, in lieu of individual permits being issued to each *discharger*.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

Illicit Discharge means any *discharge* that is not composed entirely of *stormwater* except (1) discharges authorized pursuant to a separate NPDES permit, or (2) conditionally authorized non-*stormwater* discharges identified in Condition S5.D.

Inactive Facility means a *facility* that no longer engages in business, production, providing services, or any auxiliary operation.

Industrial Activity means (1) the 10 categories of industrial activities identified in *40 CFR* 122.26(b)(14)(i-ix and_xi), (2) any *facility* conducting any activities described in [Table 1](#), or (3) any *facility* identified by *Ecology* as a *significant contributor of pollutants*.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a *land application site*, surface impoundment, injection well, or waste pile.

Land Application Site means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Leachate means water or other liquid that has percolated through raw material, product or waste and contains substances in solution or suspension as a result of the contact with these materials.

Local Government means any county, city, or town having its own government for local affairs.

Material Handling means storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product, or waste product.

Municipality means a political unit such as a city, town, or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal *Clean Water Act*, for the *discharge of pollutants to surface waters of the state* from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of *Ecology*.

New Development means land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

New Discharge(r) means a *facility* from which there is a discharge, that did not commence the *discharge* at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See *40 CFR* 122.2.

New Facility means a *facility* that begins activities that result in a *discharge* or a potential discharge to *waters of the state* on or after the effective date of this *general permit*.

Noncontact Cooling Water means water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product.

Notice of Termination (NOT) means a request for termination of coverage under this *general permit* as specified by Special Condition S13 of this permit.

Operational Source Control BMPs means schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the *pollution of waters of the state*. Not included are BMPs that require construction of *pollution* control devices.

Outfall means the point where a discharge from a facility enters a receiving waterbody or receiving waters.

Pollutant means the *discharge* of any of the following to *waters of the state*: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the FWPCA nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of *waters of the state*; including change in temperature, taste, color, *turbidity*, or odor of the waters; or such *discharge* of any liquid, gaseous, solid, radioactive or other substance into any *waters of the state* as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish, or other aquatic life.

Process Wastewater means any non-stormwater which, during manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If stormwater commingles with process wastewater, the commingled water is considered process wastewater.

Puget Sound Sediment Cleanup Site means: Category 4B (Sediment) portions of Budd Inlet (Inner), Commencement Bay (Inner), Commencement Bay (Outer), Dalco Passage and East Passage, Duwamish Waterway (including East and West Waterway), Eagle Harbor, Elliot Bay, Hood Canal (North), Liberty Bay, Rosario Strait, Sinclair Inlet, and Thea Foss Waterway; Category 5 (Sediment) portions of the Duwamish Waterway (including East and West Waterway), and Port Gardner and Inner Everett Harbor; and Port Angeles Harbor sediment cleanup area, as mapped on Ecology's ISGP website. All references to Category 4B and 5 pertain to the 2012 EPA-approved Water Quality Assessment.

Qualified Industrial Stormwater Professional means a licensed professional engineer, geologist, hydrogeologist; Certified Professional in Stormwater Quality, Certified Professional in Erosion and Sediment Control; or qualified environmental consultant with education and experience in stormwater management and licensed to do business in the State of Washington.

Qualified Personnel means those who possess the knowledge and skills to assess conditions and activities that could impact *stormwater* quality at the *facility*, and evaluate the effectiveness of *best management practices* required by this permit.

Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) means the lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Reasonable Potential means the likely probability for *pollutants* in the *discharge* to exceed the applicable water quality criteria in the receiving waterbody.

Redevelopment means on a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

Regular Business Hours means those time frames when the *facility* is engaged in its primary production process, but does not include additional shifts or weekends when partial staffing is at the site primarily for maintenance and incidental production activities. *Regular business hours* do not include periods of time that the *facility* is inactive and *unstaffed*.

Representative [sample] means a sample of the *discharge* that accurately characterizes *stormwater runoff* generated in the designated drainage area of the *facility*.

Responsible Corporate Officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Runoff means that portion of rainfall or snowmelt water not absorbed into the ground that becomes surface flow.

Sanitary Sewer means a sewer which is designed to convey *domestic wastewater*.

Sediment means the fragmented material that originates from the weathering and *erosion* of rocks, unconsolidated deposits, or unpaved yards, and is transported by, suspended in, or deposited by water.

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a *bypass*. *Severe property damage* does not mean economic loss caused by delays in production.

Significant Amount means an amount of a *pollutant* in a *discharge* that is amenable to *AKART*; or an amount of a *pollutant* that has a *reasonable potential* to cause a violation of surface or *ground water quality standards* or *sediment management standards*.

Significant Contributor of Pollutant(s) means a *facility* determined by *Ecology* to be a contributor of a *significant amount(s)* of a *pollutant(s)* to *waters of the state*.

Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the *facility* is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with *stormwater* discharges.

Significant Process Change means any modification of the *facility* that would result in any of the following:

1. Add different *pollutants* in a *significant amount* to the discharge.
2. Increase the *pollutants* in the *stormwater discharge* by a *significant amount*.
3. Add a new *industrial activity* (SIC) that was not previously covered.
4. Add additional impervious surface or acreage such that *stormwater* discharge would be increased by 25% or more.

Source Control BMPs means structures or operations that are intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. This permit separates source control into two types: *structural source control BMPs* and *operational source control BMPs*.

Standard Industrial Classification (SIC) is the statistical classification standard underlying all establishment-based federal economic statistics classified by industry as reported in the 1987 SIC Manual by the Office of Management and Budget.

State Environmental Policy Act (SEPA) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Storm Sewer means a sewer that is specifically designed to carry *stormwater*. Also called a storm drain.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a *stormwater drainage system* into a defined surface waterbody, or a constructed infiltration *facility*.

Stormwater Discharge Associated with Industrial Activity means the *discharge* from any conveyance that is used for collecting and conveying *stormwater* and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant (see *40 CFR 122(b)(14)*).

Stormwater Drainage System means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate or divert *stormwater*.

Stormwater Management Manual (SWMM) or Manual means the technical manuals prepared by Ecology for *stormwater* management in western and eastern Washington.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of *stormwater*.

Structural Source Control BMPs means physical, structural, or mechanical devices or facilities that are intended to prevent *pollutants* from entering *stormwater*.

Substantially Identical Discharge Point means a discharge point that shares the following characteristics with another discharge point: 1) the same general industrial activities conducted in the drainage area of the *discharge point*, 2) the same *Best Management Practices* conducted in the drainage area of the *discharge point*, 3) the same type of exposed materials located in the drainage area of the *discharge point* that are likely to be significant contributors of *pollutants* to *stormwater discharges*, and 4) the same type of impervious surfaces in the drainage area that could affect the percolation of *stormwater runoff* into the ground (e.g., asphalt, crushed rock, grass).

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state.

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet state *water quality standards*. Percentages of the *total maximum daily load* are allocated to the various *pollutant* sources. A *TMDL* is the sum of the allowable loads of a single *pollutant* from all contributing point and nonpoint sources. The *TMDL* calculations include a "margin of safety" to ensure that the waterbody can be protected in

case there are unforeseen events or unknown sources of the *pollutant*. The calculation also accounts for seasonable variation in water quality.

Treatment BMPs means BMPs that are intended to remove *pollutants* from *stormwater*.

Turbidity means the clarity of water expressed as nephelometric *turbidity* units (NTU) and measured with a calibrated turbidimeter.

Underground Injection Control Well means a well that is used to *discharge* fluids into the subsurface. An *underground injection control well* is one of the following:

1. A bored, drilled, or driven shaft,
2. An improved sinkhole, or
3. A subsurface fluid distribution system. (WAC 173-218-030)

Unstaffed means the *facility* has no assigned staff. A site may be “*unstaffed*” even when security personnel are present, provided that *pollutant* generating activities are not included in their duties.

Vehicle means a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

Vehicle Maintenance means the rehabilitation, mechanical repairing, painting, fueling, and/or lubricating of a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

Wasteload Allocation (WLA) means the portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of *pollution*. WLAs constitute a type of water quality based effluent limitation (*40 CFR* 130.2(h)).

Water Quality Standards means the Water Quality Standards for *Surface Waters of the State* of Washington, Chapter 173-201A WAC, Ground Water Quality Standards (Chapter 173-200 WAC), Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (*40 CFR* 131.36).

Waters of the State includes those waters defined as "waters of the United States" in *40 CFR* Subpart 122.2 within the geographic boundaries of Washington State. State statute defines "waters of the state" to include lakes, rivers, ponds, streams, wetlands, inland waters, *underground waters*, salt waters and all other surface waters and water courses within the jurisdiction of the state of Washington (Chapter 90.48 RCW).

APPENDIX 3 - SWPPP CERTIFICATION FORM

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☐No

If Yes: Type of Corrective Action?: ☐Level 1 ☐Level 2 ☐Level 3*

Date SWPPP update/revision completed:

Briefly describe SWPPP Update (use backside, if necessary):

***Note:** For Level 3 Corrective Actions, a *Qualified Industrial Stormwater Professional* must review the revised SWPPP, and sign and certify below, in accordance with Condition S8.D.2.:
"The Permittee has made appropriate revisions to the SWPPP to include additional Treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges. Based on my review of the SWPPP, discharges from the facility are reasonably expected to meet the ISGP benchmarks upon implementation."

Qualified Industrial Stormwater Professional's Printed Name

Title

Qualified Industrial Stormwater Professional's Signature

Date

"I certify under penalty of law that this SWPPP 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 information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator's Printed Name *

Title

Operator's Signature *

Date

* Federal regulations require this document to be signed in accordance with Condition G2.

APPENDIX 4 - EXISTING DISCHARGERS TO IMPAIRED WATERS

This appendix has a link below to a website list of existing Permittees that *discharge pollutants* of concern, either directly or indirectly through a stormwater drainage system, to an *outfall* that enters 303(d)-listed (Category 5) impaired waters based on the 2012 EPA-approved water quality assessment and to *Puget Sound Sediment Cleanup Sites*.

<http://www.ecy.wa.gov/programs/wq/stormwater/industrial/permitdocs/iswgpapp4.pdf>

Appendix 4 is based upon information in Ecology's PARIS database. As such, it is subject to revision based upon new information including but not limited to: new facilities, *discharge points*, and/or *outfalls*; updates or corrections to ISGP facility locations, stormwater sample points, *discharge points*, and/or *outfalls*.

Appendix 4 is a technical assistance tool intended to support ISGP facilities with permit compliance. Appendix 4 may contain errors or omissions for various reasons, but this does not relieve ISGP facilities of applicable permit requirements. If an inconsistency exists between Appendix 4 and ISGP Condition S6, the ISGP takes precedence. Permittees aware of errors or omissions with the information contained in Appendix 4 shall contact Ecology so that an update/correction can be made. If changes or updates are made, based on new or more accurate information, *Ecology* will notify the affected Permittees directly. Such changes or updates will not become effective until 30 days after the affected *dischargers* are notified.

APPENDIX 5 - DISCHARGERS SUBJECT TO TMDL REQUIREMENTS

The list of *dischargers* identified as discharging to water bodies which have completed water quality cleanup plans or *TMDLs* and associated monitoring requirements can be viewed on *Ecology's* website at:

<http://www.ecy.wa.gov/programs/wq/stormwater/industrial/permitdocs/iswgpapp5.pdf>

The most current list can also be obtained by contacting Ecology at:

Industrial Stormwater General Permit
Washington State Department of Ecology
PO Box 47696
Olympia, WA 98504-7696

This list is based on the best information available to *Ecology*. There will be changes and updates to this list based on new, more accurate information. If changes or updates are made, *Ecology* will notify the affected Permittees directly. Such changes or updates will not become effective until 30 days after the affected *dischargers* are notified.

Summary of Significant Changes to the 2015 Industrial Stormwater General Permit

Permit Section(s)	2010 ISGP	2015 ISGP
S1. Permit Coverage		
S1.A Facilities required to seek permit coverage	<i>SIC 4953: Active landfills, including, but not limited to, wood waste and inert landfills, transfer stations, open dumps, compost facilities, and land application sites, except as described in S1.C.6 or C.7.</i>	<i>SIC 4953: Active Landfills Refuse Systems, including, but not limited to, wood waste and inert landfills, transfer stations, open dumps, compost facilities, and land application sites, except as described in S1.C.6 or C.7.</i> Note: Compost Facilities moved from SIC 4953 to SIC 28xx
S1.D Facilities excluded from permit coverage	N/A	Added: <u>40 CFR 449.11(a) Airports with more than 10,000 annual jet departures.</u>
S1.D Facilities excluded from permit coverage	<i>Facilities located on Tribal lands or facilities that discharge stormwater to receiving waters subject to water quality standards of Indian Tribes, including portions of the Puyallup River and other waters on trust or restricted lands within the 1873 Survey Area of the Puyallup Tribe of Indians Reservation.</i>	Summary: Clarified that ISGP is not applicable on “Indian Country” as defined in 18 U.S.C. §1151, except specific portions of the Puyallup Reservation. Refer to ISGP Condition S1.D.4 for full language. Note: U.S. EPA’s Multi-Sector General Permit applies to areas where the ISGP does not.
S3. Stormwater Pollution Prevention Plan		
S3.A.3 Proper Selection and Use of Stormwater Management Manuals	<i>Stormwater Management Manual for Western Washington (2005 edition), for sites west of the crest of the Cascade Mountains.</i>	<i>Stormwater Management Manual for Western Washington (2005 2012 edition), for sites west of the crest of the Cascade Mountains.</i>
S3.A/B SWPPP Updates	Update SWPPP to be consistent with 2010 ISGP by 7/1/10	Update SWPPP to be consistent with 2015 ISGP by 1/30/15
S3.B Specific SWPPP requirements; Operational Source Control; Preventative Maintenance	N/A	New Language: <u>Maintain ponds, tanks/vaults, catch basins, swales, filters, oil/water separators, drains, and other stormwater</u>

Note: This document contains summaries of key changes; please refer to the 2015 ISGP for complete information. Language in *italics* is actual permit language. Underlined language is new, and ~~struck~~ language was deleted.

Permit Section(s)	2010 ISGP	2015 ISGP
		<u>drainage/treatment facilities in accordance with the Maintenance Standards set forth in the applicable Stormwater Management Manual (SWMM), other guidance documents or manuals approved in accordance with S3.A.3.c., demonstrably equivalent BMPs per S3.A.3.d., or an O&M Manual submitted to Ecology in accordance with S8.D.</u>
S3.B Specific SWPPP requirements; Inspections and Recordkeeping	N/A	At a minimum the SWPPP shall: <u>f) Include all inspection reports completed by the Permittee (S7.C).</u>
S4. Sampling and S5. Benchmarks and Effluent Limitations		
S4.B.2 Sample Location(s)	d. The exception to sampling each point of discharge in S4.B.2.c does not apply to any point of discharge subject to numeric effluent limitations (Conditions S5.C, S6.C & S6.D).	d. The exception to sampling each point of discharge in S4.B.2.c does not apply to any point of discharge subject to numeric effluent limitations (Conditions S5.C, S6.C & S6.D). New Language: <u>d. The Permittee shall notify Ecology of any changes or updates to sample locations, discharge points, and/or outfalls by submitting an "Industrial Stormwater General Permit Discharge/Sample Point Update Form" to Ecology.</u> Refer to Appendix 2 for definition of <i>Substantially Identical Discharge Point</i> .
S4.B.3.h Sample Documentation	Summary: Not required to record weather conditions at time of sampling.	Summary: Permittees must record weather conditions at time of sampling. Existing Permit Language: <i>For each stormwater sample taken, the Permittee shall record the following information and retain it on-site for Ecology review:</i> New Language: h. <u>Weather conditions.</u>
S4.B.6 Consistent Attainment	Summary: Consistent attainment limited to samples collected	Summary of change: Consistent attainment may be based upon samples collected prior to effective date of

Permit Section(s)	2010 ISGP	2015 ISGP
	after effective date of permit.	<p>2015 ISGP.</p> <p>Once consistent attainment is achieved, may suspend sampling for a period of 3 years, regardless of expiration of 2010 ISGP or effective date of 2015 ISGP.</p> <p>Refer to Condition S4.B.6 for new language.</p>
<p>S5.A.3. Benchmark and Sampling Requirements; and</p> <p>S5.B.2. Additional Sampling Requirements for Specific Industrial Groups</p>	<p><i>Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and "visible oil sheen") and compare the average value to the benchmark value.</i></p>	<p>Summary of Change: Language added to specify methodology for averaging multiple values collected during a single 24-hr period.</p> <p>Existing Permit Language:</p> <p><i>Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and "visible oil sheen") and compare the average value to the benchmark value.</i></p> <p>[Clarifying Language Added:]</p> <p><u>However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the daily average of the individual grab sample results collected during that 24-hour period; then use the daily average to calculate a quarterly average.</u></p>
S5.B. Table 3: Additional Benchmarks and Sampling Requirements Applicable to Specific Industries	Summary: Limited TPH-Dx sampling/benchmark to SICs 10xx, 33xx, 34xx, 5015, 5093, and Hazardous Waste Treatment, Storage and Disposal Facilities	<p>Summary of Change: Expanded the applicability of Petroleum Hydrocarbons Benchmark (10 mg/L NWTPH-Dx) to Transportation Facilities in SICs 40xx – 45xx (except 4221-25), and Petroleum Bulk Stations and Terminals (5171).</p> <p>Refer to Condition S5.B. Table 3.</p>
S5.C Landfills and Airports Subject to Effluent Limitation Guidelines	N/A	<p>Add:</p> <p>Ammonia (Total as N); 14.7 mg/L Maximum Daily Limit</p> <p>Affected Facilities:</p> <p>Airports with 1,000+ annual jet departures that use urea-containing deicing products</p>

Permit Section(s)	2010 ISGP	2015 ISGP
		Refer to Condition S5.C. Table 5
S6. Discharges to Impaired Waterbodies		
S6.C. Additional Sampling Requirements and Effluent Limits for Discharges to Certain Impaired Waterbodies and Puget Sound Sediment Cleanup Sites	N/A	[Clarifying Language Added:] <i>If an outfall is subject to an impaired waterbody effluent limit (Condition S6.C) for a parameter that also has a benchmark (Condition S5), the effluent limit supersedes the benchmark.</i>
S6.C. Additional Sampling Requirements and Effluent Limits for Discharges to Certain Impaired Waterbodies and Puget Sound Sediment Cleanup Sites	<p>Summary of 2010 ISGP:</p> <p>If receiving water is Category 5 for Sediment:</p> <ul style="list-style-type: none"> • Sample TSS quarterly • 30 mg/L TSS limit, effective 1/1/10; unless compliance schedule granted. 	<p>Summary of Change:</p> <p>If receiving water is Category 5 for Sediment:</p> <ul style="list-style-type: none"> • Sample TSS quarterly • 30 mg/L TSS limit, effective 1/1/17; but if discharge was subject to TSS limit under 2010 ISGP, TSS limit effective 1/1/15. <p>If Non-Category 5 Puget Sound Sediment Cleanup Site (Defined in Appendix 2):</p> <ul style="list-style-type: none"> • Sample TSS quarterly • 30 mg/L TSS benchmark, effective 1/1/17 • If discharge is subject to different TSS benchmarks, the lower benchmark controls. <p>Discharges to ISGP-defined Puget Sound Sediment Cleanup Sites are subject to additional storm drain line cleaning BMPs, solids sampling, and reporting. (See S6.C)</p>
S6.D. Requirements for Discharges to Waters with Applicable TMDLs	N/A	[Clarifying Language Added:] <i>If an outfall is subject to a TMDL-related effluent limit (Condition S6.D) for a parameter that also has a benchmark (Condition S5), the effluent limit supersedes the benchmark.</i>
S8. Corrective Actions		
S8. B.1. Level One Corrective Actions – Operational Source Control BMPs	1. <i>Within 14 days of receipt of sampling results that indicate a benchmark exceedance:</i>	<p>[Language added to clarify how the 14-day response time works with quarterly averages (S5.A.3, S5.B.2 and/or S6.C.2.c)]</p> <p>1. <i>Within 14 days of receipt of</i></p>

Permit Section(s)	2010 ISGP	2015 ISGP
		<i>sampling results that indicate a benchmark exceedance <u>for a given quarter; or, for parameters other than pH or visible oil sheen, the end of the quarter, whichever is later:</u></i>
S8. C. Level Two Corrective Actions – Structural Source Control BMPs	N/A	[Clarifying Language Added:] <i><u>While a time extension is in effect, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.</u></i>
S8.D.2.	<i>A licensed professional engineer, geologist, hydrogeologist, or Certified Professional in Storm Water Quality (CPSWQ) shall design and stamp the portion of the SWPPP that addresses stormwater treatment structures or processes.</i> <i>i. Ecology may waive the requirement for a licensed or certified professional upon request of the Permittee and demonstration that the Permittee or treatment device vendor can properly design and install the treatment device; or the treatment BMP doesn't require site-specific design or sizing (e.g., off-the-shelf filtration units, etc.).</i> <i>ii. Ecology will not waive the Level 3 requirement for a licensed or certified professional more than one time during the permit cycle.</i>	<i><u>A Qualified Industrial Stormwater Professional shall review the revised SWPPP, sign the SWPPP Certification Form, and certify that it is reasonably expected to meet the ISGP benchmarks upon implementation. Upon written request Ecology may, one time during the permit cycle, waive this requirement on a case-by-case basis if a Permittee demonstrates to Ecology's satisfaction that the proposed Level 3 treatment BMPs are reasonably expected to meet ISGP benchmarks upon implementation.</u></i>
S8.D. Level Three Corrective Actions – Treatment BMPs	[Summary:] Before installing engineered structures, Permittee shall submit an engineering	[Summary:] Before installing engineered structures, Permittee shall submit an engineering report, plans and specifications, and an

Permit Section(s)	2010 ISGP	2015 ISGP
	<p>report, plans and specifications, and an O&M Manual to Ecology for review in accordance with Chapter 173-240 WAC.</p> <p>(See 2010 Condition S8.D)</p>	<p>O&M Manual to Ecology for review. The engineering report must address 7 elements set forth in S8.D.3.a.</p> <p>O&M Manual submitted to Ecology no later than 30 days after installation.</p> <p>(See 2015 ISGP Condition S8.D)</p> <hr/> <p>[Clarifying Language Added:]</p> <p><u>While a time extension is in effect, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.</u></p>
S9. Reporting and Recordkeeping		
S9.A Discharge Monitoring Reports	<p>[Summary:]</p> <p>DMRs and other written reports must be submitted electronically or by mail.</p>	<p>[Summary:]</p> <p>DMRs and other written reports must be submitted electronically (Water Quality Permitting Portal), unless waiver granted.</p> <p>Clarified first DMR due date when facility obtains permit coverage mid-permit cycle.</p>
S9.B. Annual Reports	N/A	Clarified that Annual Reports are not required if the permittee didn't have permit coverage during the previous calendar year.
S9.B. Annual Reports	N/A	<p>[Clarifying Language Added:]</p> <p><u>Primary airport permittees with at least 1,000 annual jet departures shall include a certification statement in each annual report that it does not use airfield deicing products that contain urea. Alternatively, permittees shall meet the numeric effluent limit for ammonia in Condition S5.C. Table 5.</u></p>
S9.E. Reporting Permit Violations	<p>[Summary:]</p> <p>Written reports of non-compliance must be submitted within 30 days.</p>	<p>[Summary:]</p> <p>Written reports of non-compliance must be submitted within 5 days; may be waived on a case by case basis, if phone notification occurs within 24 hours.</p> <p>All written reports must be submitted electronically, unless waiver granted.</p>

Permit Section(s)	2010 ISGP	2015 ISGP
Appendix 2 - Definitions		
Appendix 2 - Definitions	N/A	<p>[Summary:] Several new definitions added:</p> <p>Airfield Pavement</p> <p>Airside</p> <p>Annual Non-propeller Aircraft Departures</p> <p>Average</p> <p>Daily Average</p> <p>Deicing</p> <p>Discharge Point</p> <p>First Fall Storm Event</p> <p>Outfall</p> <p>Puget Sound Sediment Cleanup Site</p> <p>Responsible Corporate Officer</p> <p>Substantially Identical Discharge Point</p>

Appendix E.

Generic Storage and Maintenance Areas Stormwater Pollution Prevention Plan (SWPPP)

Example SWPPP

The following Appendix is split into two segments.

The first section provides a SWPPP example for a hypothetical facility/site.

The second provides blank worksheets to be included with a site map as the SWPPP.

SWPPP Checklist

- ___ Generalized Description and Site Map
- ___ 1 - Pollution Prevention Team
- ___ 2 - Materials Inventory
- ___ 2A - Significant Materials Exposed
- ___ 3 - Potential Pollutants
- ___ 4 - Significant Spill and Leaks
- ___ 5 - Associated Areas
- ___ 6 - Non-Stormwater Discharge Assessment (Dry Weather)
- ___ 7 - Non-Stormwater Discharge Assessment and Failure to Certify
- ___ 8 - Minimum BMP Identification
- ___ 8A - Additional BMP Identification
- ___ 9 - Implementation
- ___ 10 - Employee Training
- ___ 11 - Visual Inspections

Site Map

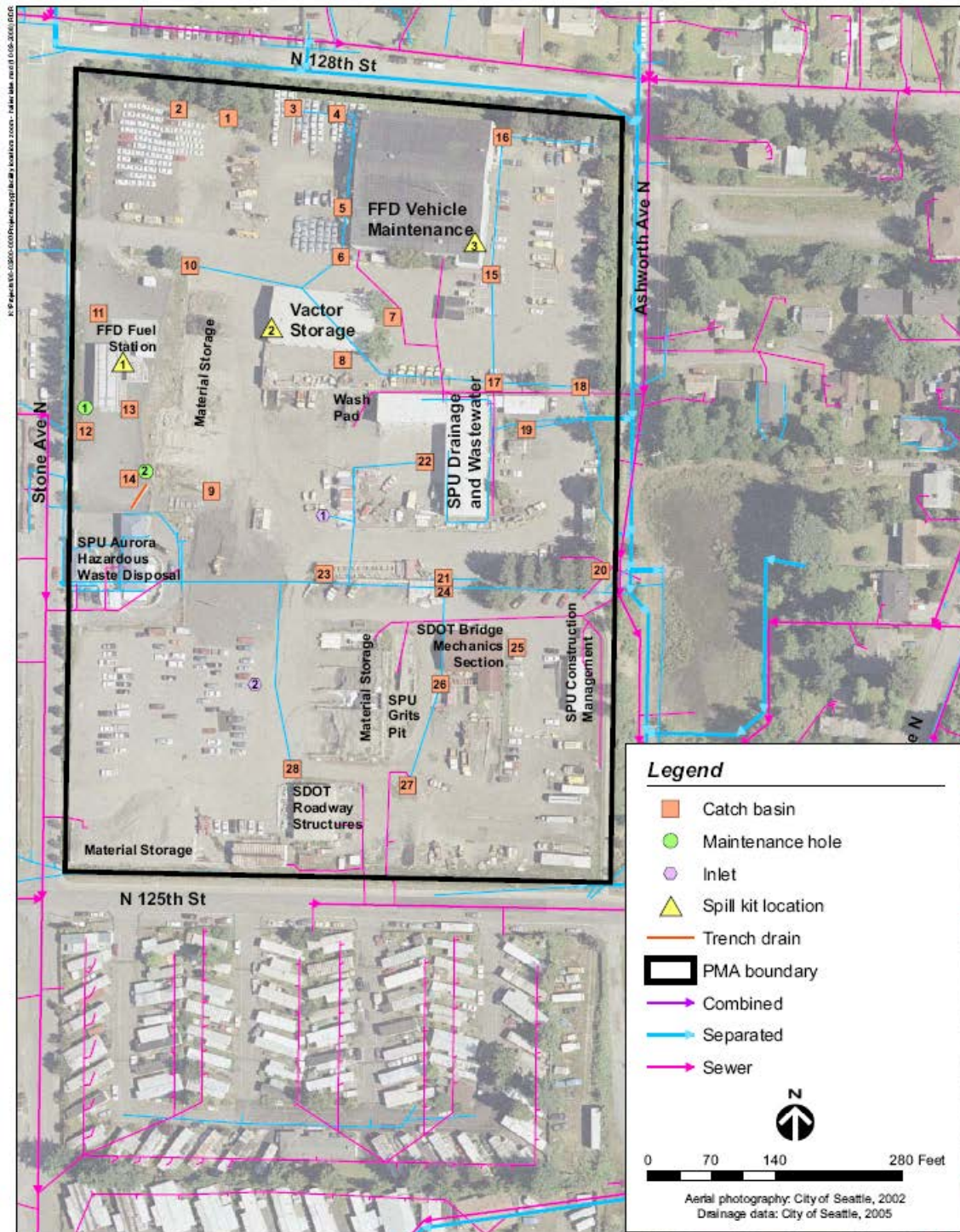


Figure A-2. Haller Lake Shops Complex (PMA 691) site drainage plan, Ashworth Ave N & N 127th St., Seattle, Washington.

(City of Seattle, 2007)

Pollution Prevention Team	Worksheet #1
	Completed by: <u>John Smith</u>
	Title: <u>Plant Manager</u>
	Date: <u>October 31, 2002</u>
Responsible Official: _____ Title: <u>Plant Manager</u> Team Leader: <u>John Smith</u> Office Phone: <u>(101) 555-1234</u> Responsibilities: Signatory authority; coordinate all stages of plan development and implementation; coordinate employee training program; keep all records and ensure reports are submitted. _____ _____	
(1) <u>Stephen Michaels</u> Title: <u>Production Supervisor</u> Office Phone: <u>(101) 555-3923</u> Responsibilities: Note any process changes; help conduct inspections. _____ _____	
(2) <u>Rachel Meyers</u> Title: <u>Environmental Engineering Dept. Supervisor</u> Office Phone: <u>(101) 555-5870</u> Responsibilities: Responsible for implementing the pollution prevention maintenance program; oversee inspections. _____ _____	
(3) <u>Isaac Feldman</u> Title: <u>Maintenance Dept. Supervisor</u> Office Phone: <u>(101) 555-0482</u> Responsibilities: Mr. Feldman is the spill response coordinator; oversees "good housekeeping." _____ _____	
(4) <u>Group Activities</u> Title: _____ Office Phone: _____ Responsibilities: Developing the SWPPP elements, choosing stormwater management options. _____ _____	

Material Inventory					Worksheet #2_____			
					Completed by: John Smith			
					Title: Plant Manager			
					Date: January 31, 2003			
List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred during the three years prior to the effective date of the permit. (Including any pollutants no longer handled on-site.)								
Material	Purpose/Location	Quantity (Units)			Exposed Since Nov. 89 (Yes/No)	Likelihood of contact With stormwater. If Yes, describe reason	Past Spill or	
		Used	Produced	Stored			Leak	
		(indicate per/wk. or yr.)					Yes	No.
Machine oil	Truck unloading area	20 gal/wk	—	80 gal/ wk	No	Truck loading/unloading area outside and possible		✓
						Exposure with ruptured drums		
Gasoline	Truck fueling	80 gal/wk	—	300 gal/wk	Yes	Leaking valve overfilling fuel tanks	✓	
Motor oil	750 gal above grd tank	20 gal/wk	—	—	No	Possible exposure in event of defective tank or		
						Transfer of materials from tanks to containers		

Description of Exposed Significant Material				Worksheet #2A_____
				Completed by: John Smith_____
				Title: Plant Manager_____
				Date: 8/31/2006_____
Based on your material inventory, list significant materials that have been exposed since November 18, 1989, and/or are currently exposed.				
List of Exposed Significant Materials	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of storage, handling, treatment, or disposal (e.g., sealed drum standing outside, or covered pile, drum, tank)
Machine oil	12/7/ 2002	10 gal	Storage bldg tank #2	50 gallon tanks (2)

Potential Pollutant Source Identification	Worksheet #3 _____	
	Completed by: John Smith _____	
	Title: Plant Manager _____	
	Date: 3/28/2003 _____	
List all potential stormwater pollutants from materials handled, treated, or stored on-site.		
Potential Stormwater Pollutant	Stormwater Pollutant Source	Likelihood of pollutant being present in your stormwater discharge. If yes, explain
1. Oil and grease on pavement in fueling area	Oil and water separators installed in stormwater drain	Install drip pads
2. Erosion in field below employee parking	Planted some grass after construction, grassed swales along Wonka Drive	Plant more grass
3. Potential for spills from oil storage tanks (leak detected in oil tank #1 and past spill on 5/10/98)	Curbing around fuel storage tank (see SPCC plan)	Replace oil tank #1, replace valve on oil tank #2, install curbing around other outside tanks, spill prevention response plan, inspection
4. Use of toxic cleaning agent		Use non-toxic cleaning agent
5. Trash in loading/unloading fueling areas	Regular trash pickup (daily) by maintenance crew, collect and recycle used oil.	Train staff in good housekeeping practices.

List of Significant Spills and Leaks						Worksheet #4		
						Completed by: John Smith		
						Title: Plant Manager		
						Date: January 31, 2003		
List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants since November 18, 1989, that were significant. Significant spills and leaks include but are <u>not</u> limited to, release of <u>oil</u> or <u>hazardous substances in excess of reportable quantities</u> (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.								
Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Storm- water (Yes/No)	
12/21/2002	Storage bldg	Oil	10 gal	Tank #2	Leaky valve	8 gal – balance	Yes	Complete the installation of
						contained and mopped		Curbing around tank Have “kitty” litter available

<p align="center">Identify Areas Associated With Storage or Maintenance Activity</p>		Worksheet #5 _____
		Completed by: John Smith _____
		Title: Plant Manager _____
		Date: 4/27/03 _____
<p>List areas and activities, not included on Worksheets 2, 2A, and 3, which may be sources of pollution. Discuss the potential of these areas and activities as potential pollutant sources and identify any pollutant that may be generated by that activity...</p>		
Storage or Maintenance Area/Activity	Potential Stormwater Pollutant from Area or Activity	Likelihood of being present in your stormwater discharge. If yes, describe reason.
Gravel Loading and Unloading Area	Dust from Gravel	No
Fuel Station	Gasoline, Oils, and Vehicle Fluids	No
Paved Entrance Road	Dust, small amount dropped material from transport trucks.	Yes, Sediment and other materials could be washed into storm drains.

Non-Stormwater Discharge Dry Weather (July, August, September) Assessment and Certification				Worksheet #6_____	
				Completed by: <u>Rachel Meyers</u>	
				Title: <u>Engineering Dept Supervisor</u>	
				Date: <u>December 31, 2003</u>	
<p>The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, non-contact cooling water, or process wastewater (including <i>leachate</i>) to the <i>stormwater drainage system</i>. Such discharges, if illicit, must be eliminated within 30 days, or application submitted to Ecology for a NPDES Permit.</p> <p>Tests may include: visual observations of flows, odors, and other abnormal conditions; dye tests, television line surveys; and/or analysis and validation of accurate piping schematics.</p>					
Date	Discharge Location (as indicated on the site map)	Method used to test or Evaluate Discharge	Describe Results from Test for Presence of Non- Stormwater Discharge	Identify Potential Significant Sources	Person who Conducted The Test
7/21/03	001	Visual Inspection	No discharge observed		R. Meyers and S. Goodhope
9/20/03	001	Visual Inspection	Significant flow; oil	Vehicle wash ongoing at time	R. Meyers and S. Goodhope
12/1/03	001	Visual Inspection	Small amount of clear discharge	Suspected to be delayed stormwater drainage from storm that occurred 8/30/98	R. Meyers and S. Goodhope
CERTIFICATION					
A. Name and Title Cheryl Glenn, Plant Manager				B. Phone: (101) 555-1239	
C. Signature Cheryl Glenn				D. Date Signed 1/31/04	

Non-Stormwater Discharge Assessment and Failure To Certify Notification		Worksheet #7 _____	
		Completed by: John Smith _____	
		Title: Plant Manager _____	
		Date: 3/28/03 _____	
<p>If you cannot feasibly evaluate the entire stormwater drainage system, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.</p> <p>List all outfalls or storm drains tested or evaluated, describe any potential sources of non-stormwater pollution from listed outfalls or drains, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.</p>			
Identify Discharge Location Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Sources of Non-Stormwater Pollution	
Outfall #2	Outfall is currently submerged by stream	Sediment and dust from gravel loading area	
CERTIFICATION			
A. Name and Title John Smith		B. Phone: (101) 555-8833	
C. Signature John Smith		D. Date Signed 3/28/03	

Minimum BMP Identification	Worksheet #8 _____
	Completed by: John Smith _____
	Title: Plant Manager _____
	Date: 3/28/03
Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5. The description shall include the following minimum requirements.	
BMPs	Brief Description of Activities or Improvements
Good Housekeeping	Collect and recycle used oil; regular trash pickup; train staff in basic cleanup procedures (sweeping loading and unloading areas, etc.)
Preventive Maintenance	Daily inspection of outside oil tanks; replace faulty valve on oil tank #2; replace leaking oil tank #1.
Spill Prevention and Emergency Cleanup	Install curbing around outside oil storage tanks; fuel tank has curbing, install drip pads at fueling station.

BMPs	Brief Description of Activities or Improvements
Inspections	Quarterly inspections, both during rain events and dry periods.
Source Control BMPs	
Erosion and Sediment Control BMPs (if applicable)	Plant grass around new parking area.

Additional BMP Identification	Worksheet #8A _____
	Completed by: John Smith _____
	Title: Plant Manager _____
	Date: 3/28/03
<p>Describe any treatment and innovative BMPs that are required to address existing and potential pollutant sources identified in Worksheet 3, 4, and 5. These are BMPs needed to prevent the discharge of significant amounts of pollutants despite implementation of operational and source control BMPs.</p>	
BMPs	Brief Description of Activities or Improvements
Treatment BMPs	Grassed swales along Wonka Drive, Oil/water separators (2) in storm drain system.
Emerging technologies Flow Control BMPs (if applicable)	

BMP Implementation		Worksheet #9_____	
		Completed by: John Smith_____	
		Title: Plant Manager_____	
		Date: 8/27/03_____	
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.			
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Good Housekeeping	1. Develop training program	1/15/03	Glenn
	2. Conduct training	1/15/03	Glenn
	3.		
Preventive Maintenance	1. Replace valve on oil tank #2	3/15/03	Feldman
	2. Install new oil tank #2	6/30/03	Feldman
	3.		
	4.		
Spill Prevention and Emergency Cleanup	1. Install curbing around oil storage tanks	6/30/03	Meyers
	2. Install drip pads	1/15/03	Feldman
	3. Develop/implement spill prevention/ response training	1/15/03 - 1/31/03	Feldman
Inspections	1. Develop inspections schedule	12/21/02	Glenn
	2.		
	3.		

Employee Training		Worksheet #10 _____	
		Completed by: John Smith _____	
		Title: Plant Manager _____	
		Date: 8/24/03 _____	
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics 1.) LINE WORKERS	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response	Locate spill areas by signs; drill spill response procedures; show slides of past spills	December/June	Maintenance/shipping and receiving
Good Housekeeping	Demonstration; post signs at disposal sites.	December/June	Maintenance/shipping and receiving
Material Management Practices	Introduce hazardous materials labels; discuss recycling.	December/June	Line workers/shipping and receiving
2.) P2 TEAM:			
SWPPP Implementation	SWPPP Components	March	Meister
Monitoring Procedures	Demonstration with monitoring equipment	March	Meister

Record of Visual Inspections of Stormwater Discharges			Worksheet #11 Completed by *: Michael Hay Title: Water Quality Inspector Date: 9/25/04 * Must be conducted by qualified person identified in the SWPPP.	
			List observed pollutants in all discharges and carefully assess the pollutant sources and action steps needed to control the pollutants. Record pollutant sources/generating activities, BMP adequacy, site map, and other facility information on Worksheets 1-9, inclusive.	
Date	Surface Discharge ID	Ground Discharge ID	List of observed pollutants and descriptions of intensities of each. Include floatables, oil sheen, discoloration, turbidity, odor, etc.	Recommended Action Steps
3/20/03	001	002	Oil sheen, high turbidity.	Increased sweeping

Blank SWPPP Worksheets

SWPPP Checklist

- ___ Generalized Description and Site Map
- ___ 1 - Pollution Prevention Team
- ___ 2 - Materials Inventory
- ___ 2A - Significant Materials Exposed
- ___ 3 - Potential Pollutants
- ___ 4 - Significant Spill and Leaks
- ___ 5 - Associated Areas
- ___ 6 - Non-Stormwater Discharge Assessment (Dry Weather)
- ___ 7 - Non-Stormwater Discharge Assessment and Failure to Certify
- ___ 8 - Minimum BMP Identification
- ___ 8A - Additional BMP Identification
- ___ 9 - Implementation
- ___ 10 - Employee Training
- ___ 11 - Visual Inspections

Pollution Prevention Team	Worksheet #1
	Completed by: _____
	Title: _____
	Date: _____
Responsible Official: _____ Title: _____ Team Leader: _____ Office Phone: _____ Responsibilities: _____ _____ _____	
(1) _____ Title: _____ Office Phone: _____ Responsibilities: _____ _____ _____	
(2) _____ Title: _____ Office Phone: _____ Responsibilities: _____ _____ _____	
(3) _____ Title: _____ Office Phone: _____ Responsibilities: _____ _____ _____	

Material Inventory					Worksheet #2 _____ Completed by: _____ Title: _____ Date: _____			
List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred during the three years prior to the effective date of the permit. (Including any pollutants no longer handled on-site.)								
Material	Purpose/Location	Quantity (Units)			Exposed Since Nov. 89 (Yes/No)	Likelihood of contact With stormwater. If Yes, describe reason	Past Spill or Leak	
		Used	Produced	Stored				
		(indicate per/wk. or yr.)					Yes	No.

Description of Exposed Significant Material				Worksheet #2A _____
				Completed by: _____
				Title: _____
				Date: _____
Based on your material inventory, list significant materials that have been exposed since November 18, 1989, and/or are currently exposed.				
List of Exposed Significant Materials	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of storage, handling, treatment, or disposal (e.g., sealed drum standing outside, or covered pile, drum, tank)

Potential Pollutant Source Identification		Worksheet #3 _____
		Completed by: _____
		Title: _____
		Date: _____
List all potential stormwater pollutants from materials handled, treated, or stored on-site.		
Potential Stormwater Pollutant	Stormwater Pollutant Source	Likelihood of pollutant being present in your stormwater discharge. If yes, explain

List of Significant Spills and Leaks						Worksheet #4 _____		
						Completed by: _____		
						Title: _____		
						Date: _____		
List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants that were significant after the date of three years prior to the effective date of this Permit. Significant spills and leaks include but are <u>not</u> limited to, release of <u>oil</u> or <u>hazardous substances in excess of reportable quantities</u> (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.								
Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Storm-water (Yes/No)	

<p align="center">Identify Areas Associated With Storage or Maintenance Activity</p>		Worksheet #5 _____
		Completed by: _____
		Title: _____
		Date: _____
<p>List areas and activities, not included on Worksheets 2, 2A, and 3, which may be sources of pollution. Discuss the potential of these areas and activities as potential pollutant sources and identify any pollutant that may be generated by that activity...</p>		
Storage or Maintenance Area/Activity	Potential Stormwater Pollutant from Area or Activity	Likelihood of being present in your stormwater discharge. If yes, describe reason.

Non-Stormwater Discharge Dry Weather (July, August, September) Assessment and Certification				Worksheet #6 _____ Completed by: _____ Title: _____ Date: _____	
<p>The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, non-contact cooling water, or process wastewater (including <i>leachate</i>) to the <i>stormwater drainage system</i>. Such discharges, if illicit, must be eliminated within 30 days, or application submitted to Ecology for a NPDES Permit.</p> <p>Tests may include: visual observations of flows, odors, and other abnormal conditions; dye tests, television line surveys; and/or analysis and validation of accurate piping schematics.</p>					
Date	Discharge Location (as indicated on the site map)	Method used to test or Evaluate Discharge	Describe Results from Test for Presence of Non-Stormwater Discharge	Identify Potential Significant Sources	Person who Conducted The Test
CERTIFICATION					
A. Name and Title				B. Phone:	
C. Signature				D. Date Signed	

Non-Stormwater Discharge Assessment and Failure To Certify Notification		Worksheet #7 _____	
		Completed by: _____	
		Title: _____	
		Date: _____	
<p>If you cannot feasibly evaluate the entire stormwater drainage system, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.</p> <p>List all outfalls or storm drains tested or evaluated, describe any potential sources of non-stormwater pollution from listed outfalls or drains, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.</p>			
Identify Discharge Location Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Sources of Non-Stormwater Pollution	
CERTIFICATION			
A. Name and Title		B. Phone:	
C. Signature		D. Date Signed	

Minimum BMP Identification	Worksheet #8 _____
	Completed by: _____
	Title: _____
	Date: _____
Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5. The description shall include the following minimum requirements.	
BMPs	Brief Description of Activities or Improvements
Good Housekeeping	
Preventive Maintenance	
Spill Prevention and Emergency Cleanup	

BMPs	Brief Description of Activities or Improvements
Inspections	
Source Control BMPs	
Erosion and Sediment Control BMPs (if applicable)	

Additional BMP Identification	Worksheet #8A _____
	Completed by: _____
	Title: _____
	Date: _____
<p>Describe any treatment and innovative BMPs that are required to address existing and potential pollutant sources identified in Worksheet 3, 4, and 5. These are BMPs needed to prevent the discharge of significant amounts of pollutants despite implementation of operational and source control BMPs.</p>	
BMPs	Brief Description of Activities or Improvements
Treatment BMPs	
Emerging technologies Flow Control BMPs (if applicable)	

BMP Implementation		Worksheet #9 _____	
		Completed by: _____	
		Title: _____	
		Date: _____	
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.			
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Good Housekeeping	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
Preventive Maintenance	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
	4. _____	_____	_____
Spill Prevention and Emergency Cleanup	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
Inspections	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
Erosion and Sediment Control	1.		
	2.		
	3.		
	4.		
Treatment BMPs	1.		
	2.		
	3.		
	4.		
Emerging technologies	1.		
	2.		
Flow Control BMPs	3.		
	4.		

Employee Training		Worksheet #10 _____	
		Completed by: _____	
		Title: _____	
		Date: _____	
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
1.) LINE WORKERS			
Spill Prevention and Response			
Good Housekeeping			
Material Management Practices			
2.) P2 TEAM:			
SWPPP Implementation			
Monitoring Procedures			

Record of Visual Inspections of Stormwater Discharges			Worksheet #11	
			Completed by *: Title: Date: * Must be conducted by qualified person identified in the SWPPP.	
List observed pollutants in all discharges and carefully assess the pollutant sources and action steps needed to control the pollutants. Record pollutant sources/generating activities, BMP adequacy, site map, and other facility information on Worksheets 1-9, inclusive.				
Date	Surface Discharge ID	Ground Discharge ID	List of observed pollutants and descriptions of intensities of each. Include floatables, oil sheen, discoloration, turbidity, odor, etc.	Recommended Action Steps

Industrial Stormwater SWPPP Template

Introduction

To help you develop a Stormwater Pollution Prevention Plan (SWPPP) that is consistent with the Industrial Stormwater General Permit (ISWGP), the Department of Ecology (Ecology) has provided this Industrial SWPPP Template (or, “the Template”) modified from a U.S. Environmental Protection Agency (EPA) SWPPP document. Use of the Template will help ensure that your SWPPP addresses all the necessary elements required in Condition S3 of the ISWGP.

Before completing the Template, make sure you read and understand the requirements in the permit. A copy of the permit is available at <http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html>

Each section of this Template references applicable sections of the permit. Print out a copy and keep your permit with your SWPPP. Look up each section in the permit as you develop your SWPPP. Additional guidance documents for SWPPP development are also available through the above link.

Tips for completing the Industrial SWPPP Template:

- This Template is designed for use by all facilities covered under the ISWGP. The Template is not tailored to specific industrial sectors or facilities covered under the permit. You may be required to make significant revisions and edits to ensure that all the SWPPP requirements in the ISWGP are addressed.
 - Depending on your industrial sector, you may need to monitor additional stormwater sampling parameters; refer to Permit Condition S5. (S5.B. Table 3, pp 25-28 ISWGP).
 - Certain landfill operations are subject to additional sampling, and numeric effluent limits; refer to Condition S5.C. pp 27-28)
 - Certain facilities are subject to additional sampling and effluent limits for discharges to 303(d)-listed waters; refer to Condition S6, Table 5, pg. 32.
- Ecology has provided blank worksheets for your convenience (Appendix C of this Template). You are not required to use these forms. You may design your own per the requirements of S3. The appropriate worksheet to use is referred to by number throughout the Template.
- Each section includes “instructions” and space for your facility’s specific information. You should read the instructions for each section and the permit requirement references before you complete that section.
- You are required to identify any parts of the SWPPP claimed as Confidential Business Information. It is suggested that these portions be highlighted or otherwise identified.
- The Template was developed in *Microsoft Word* so that you can easily add tables and additional text. Some sections may require only a brief description while others may require several pages of explanation, or require you to add attachments.
- To make it easier to complete, *the Template* generally uses **blue text** where the operator is expected to enter information.

Ecology notes that while every effort has been made to ensure accuracy of all instructions and guidance contained in the Template, the actual legal requirements for permit compliance at industrial facilities are determined by the relevant provisions of the ISWGP, not by the Template. In the event of a conflict between the Template and any corresponding provision of the ISWGP, the permit controls.

Ecology welcomes comments on the Template at any time and will consider those comments in any future revision of this document.

Stormwater Pollution Prevention Plan (SWPPP)

for:

Insert Facility Name
Insert Facility Address
Insert City, State, Zip Code
Insert Facility Telephone Number (if applicable)

SWPPP Contact(s):

Insert Facility Operator
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

SWPPP Preparation Date:

___/___/____

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Section 1. Facility Description and Contact Information

1.1 Facility Information

Instructions:

- Detailed information on determining your site's latitude and longitude can be found at www.epa.gov/npdes/stormwater/latlong.
- Use this link to enter your address to determine your site's latitude and longitude: <http://www.mashupsoft.com/maps/latlonlocator>

Facility Information

Name of Facility: _____

Street: _____

City: _____ State: _____ ZIP Code: _____

County: _____

Permit Number: WAR _____

Latitude/Longitude - Use **one** of three possible formats, and specify method (Optional)

Latitude:

1. __° __' __" N (degrees, minutes, seconds)

2. __° __. __' N (degrees, minutes, decimal)

3. __. ____° N (decimal)

Longitude:

1. __° __' __" W (degrees, minutes, seconds)

2. __° __. __' W (degrees, minutes, decimal)

3. __. ____° W (decimal)

Estimated area of industrial activity at site exposed to stormwater: _____ (acres)

Discharge Information

Does this facility discharge stormwater into surface waters? ☐ Yes ☐ No

Does this facility discharge stormwater into a municipal storm water conveyance system? ☐ Yes ☐ No

SIC Code(s): _____

(You can look up your SIC Code at this website: <http://www.osha.gov/pls/imis/sicsearch.html>)

1.2. Contact Information/Responsible Parties

Instructions:

- List the facility operator(s), facility owner, and 24 hour emergency contact. Indicate respective responsibilities, where appropriate.

Facility Operator (s):

Name: [Insert Name](#)

Address: [Insert Address](#)

City, State, Zip Code: [Insert City, State, Zip Code](#)

Telephone Number: [Insert Telephone Number](#) Cell Phone Number: [Insert Telephone Number](#)
(optional)

Email address: [Insert email address](#)

Fax number: [Insert fax number](#) (optional)

Facility Owner (s):

Name: [Insert Name](#)

Address: [Insert Address](#)

City, State, Zip Code: [Insert City, State, Zip Code](#)

Telephone Number: [Insert Telephone Number](#)

Email address: [Insert email address](#)

Fax number: [Insert fax number](#) (optional)

SWPPP Contact:

Name: [Insert SWPPP Contact Name](#)

Telephone number: [Insert Telephone Number](#) Cell Phone Number: [Insert Telephone Number](#)
(optional)

Email address: [Insert email address](#)

Fax number: [Insert fax number](#) (optional)

1.3. General Location Map (Optional)

Instructions:

- Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges (Appendix A).

Include a copy of the general location map for this facility in Appendix A.

1.4. Site Map

Instructions (see S3.B.1. pg. 14 of the ISWGP):

Include a map showing the following information:

- The scale or include relative distances between significant structures and drainage systems.
- Significant features.
- The stormwater drainage and discharge structures and identify, by name, any other party other than the Permittee that owns any stormwater drainage or discharge structures.
- The stormwater drainage areas for each stormwater discharge point off-site (including discharges to ground water) and assign a unique identifying number for each discharge point.
- Each sampling location by unique identifying number.
- Paved areas and buildings.
- Areas of pollutant contact (actual or potential) associated with specific industrial activities.
- Conditionally approved non-stormwater discharges (Condition S5.D).
- Surface water locations (including wetlands and drainage ditches).
- Areas of existing and potential soil erosion (in a significant amount).
- Vehicle maintenance areas.
- Lands and waters adjacent to the site that may be helpful in identifying discharge points or drainage routes.

Include a copy of the site map for this facility in Appendix B.

1.5. Stormwater Pollution Prevention Team

Instructions (S3.B.3. pg.16 of the ISWGP):

- Identify the staff members (by name or title) that comprise the facility's stormwater pollution prevention team as well as their individual responsibilities.
- Your stormwater pollution prevention team is responsible for assisting the facility manager in developing and revising the facility's SWPPP, implementing and maintaining control measures/BMPs, and taking corrective actions where required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of the ISWGP and your SWPPP.

Staff Names and/or Title	Individual Responsibilities
Insert name or title of SWPPP team member	Insert explanation of that staff person's responsibilities relating to compliance with the permit e.g. SWPPP updates, monitoring, specific BMP maintenance/implementation, monthly inspections;
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]

Insert text here

Section 2. Facility Assessment

Instructions (see S3.B.2.a.- c. pg. 15 of the ISWGP).

In this section, you are required to include a description of the facility; an inventory of facility activities and equipment that contribute to or have the potential to contribute any pollutants to stormwater; and, an inventory of materials that contribute to or have the potential to contribute pollutants to stormwater.

2.1. Facility Description

Instructions (see S3.B.2.a. pg. 15 of the ISWGP).

In this section, you are required to include a description of the facility:

- The industrial activities conducted at the site.
- Regular business hours and seasonal variations in business hours or industrial activities.
- The general layout of the facility including buildings and storage of raw materials, and the flow of goods and materials through the facility.

Industrial Activity: INSERT GENERAL DESCRIPTION OF INDUSTRIAL ACTIVITY HERE

Regular Business Hours: INSERT GENERAL REGULAR BUSINESS HOURS AND SEASONAL VARIATIONS IN BUSINESS HOURS OR INDUSTRIAL ACTIVITIES HERE

General Layout: INSERT THE GENERAL LAYOUT OF THE FACILITY INCLUDING BUILDINGS AND STORAGE OF RAW MATERIALS, AND THE FLOW OF GOODS AND MATERIALS THROUGH THE FACILITY HERE *Note: Alternatively, you may also address this in Section 1.4 Site Map

2.2. Industrial Activity, Materials Inventory, and Associated Pollutants

Instructions (S3.B.2.b.- c. pg. 15 of the ISWGP and Worksheets #2, #2A, #3, #5 in Appendix C):

In this section, identify all areas associated with **industrial activities** that have been or may potentially be sources of pollutants, including, but not limited to, the following:

- Loading and unloading of dry bulk materials or liquids.
- Outdoor storage of materials or products.
- Outdoor manufacturing and processing.
- On-site dust or particulate generating processes.
- On-site waste treatment, storage, or disposal.
- Vehicle and equipment fueling, maintenance, and/or cleaning (includes washing).
- Roofs or other surfaces exposed to air emissions from a manufacturing building or a process area
- Roofs or other surfaces composed of materials that may be mobilized by stormwater (e.g., galvanized roofs, galvanized fences, etc.).

Also, identify the types of materials handled at the site that potentially may be exposed to precipitation or runoff and could result in stormwater pollution.

For each **industrial activity** or **exposed material** listed, provide a short narrative (in the **Associated Pollutant** column) describing the potential of pollutant(s) to be present in stormwater discharges. For example:

- Structures and materials with galvanized metal would be a potential source of zinc.
See Suggested Practices to Reduce Zinc Concentrations in Industrial Stormwater Discharges:
<http://www.ecy.wa.gov/biblio/0810025.html>
- Fueling/vehicle maintenance areas would be a potential source of petroleum and other pollutants.
- Yards surfaced with crushed rock or gravel would be a potential source of sediment, turbidity, and other pollutants depending on industrial activity.

The Permittee must update this narrative if/when data become available to verify the presence or absence of these pollutants.

Include a narrative description of any potential sources of pollutants from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to stormwater. For example,

- A material handling area that has been subject to fertilizer spills would be a potential source of phosphorus, nitrogen and other pollutants.

Include the method and location of on-site storage or disposal. List significant spills and significant leaks of toxic or hazardous pollutants.

Industrial Activity / Exposed Materials	Associated Pollutants
Insert specific industrial activity / exposed materials	Insert names of pollutants or pollutant constituents that could be associated with this activity / exposed materials and released in stormwater
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]

2.3. Spills and Leaks

Instructions:

- Include the following in this section:
 - **Potential spills and leaks:** A description of where potential spills and leaks could occur at your site that could contribute pollutants to your stormwater discharge, and specify which outfall(s) are likely to be affected by such spills and leaks.
 - **Past spills and leaks (Use Worksheet #4):** A description of significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance.
- *Note: Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602.*

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls
Insert description of area where spill/leak could occur	Specify which outfall(s) would be affected
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]

Section 3. Best Management Practices (BMPs)

Instructions (See S3.B.4. pg 16 of the ISWGP):

- You must describe each Best Management Practice (BMP) selected to eliminate or reduce the potential to contaminate *stormwater* and prevent violations of *water quality standards*.
- No later than July 1, 2010, you must include and implement each of the mandatory BMPs listed in the permit, including the BMPs from Volume IV of the Stormwater Management Manual for Western Washington or equivalent manuals, listed as “applicable” to certain industrial activities/facilities: <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html>
- Appendix E of this Template contains the BMPs from the Stormwater Management Manuals that are applicable to certain industrial activities or facilities. “Cut” each applicable BMP that pertains to your type industrial activity/facility from Appendix E, and “paste” them into the appropriate section(s).
- The Permittee may omit individual (mandatory or applicable) BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP. For example:
 - The permit requirement to have a spill kit located within 25’ of fueling areas would not be necessary at a facility that does not have on-site fueling. The SWPPP should state that the spill kit BMP has been omitted from the SWPPP because it is unnecessary.
- Prior to July 1, 2010, the Permittee shall implement the BMP requirements of the previous Industrial *Stormwater General Permit*, or Condition S3.B.4 of this permit.

3.1 Operational Source Control BMP

Good Housekeeping

Instructions (see S3.B.4.b.i.2 Good Housekeeping pg. 16 of the ISWGP):

Describe BMPs implemented for ongoing maintenance and cleanup of areas which may contribute pollutants to stormwater discharges. The SWPPP must include the schedule/frequency for completing each housekeeping task, based upon industrial activity, sampling results and/or observations made during inspections. At a minimum the following Good Housekeeping BMPs are mandatory. The Permittee may omit individual “mandatory” BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.

Mandatory Operational Source Control BMPs required by condition S3. of the Industrial Stormwater General Permit:

Good Housekeeping:

- Vacuum paved surfaces with a vacuum sweeper (or a sweeper with a vacuum attachment) to remove accumulated pollutants a minimum of once per quarter.
- Identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation.
- Inspect and maintain bag houses monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust at the base of exterior bag houses.
- Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.
- Condition S3. of the Industrial Stormwater General Permit requires the SWPPP to include the "applicable" Good Housekeeping Operational and Source Control BMPs listed in Ecology's SWMMs, or other guidance documents as mandatory. **NOTE: Ecology has provided a list of BMPs applicable to certain industrial activities or facilities in Appendix E. "Cut" the Good Housekeeping Operational Source Control BMPs that apply to your industrial activity from Appendix E, and "paste" them here:**

INSERT DESCRIPTION OF ADDITIONAL BMPs HERE, IF APPLICABLE OR NECESSARY BASED ON CORRECTIVE ACTIONS

Preventive Maintenance:

Instructions (see S3.B.4.b.i.3 Preventative Maintenance pg. 16 of the ISWGP):

Describe BMPs to inspect and maintain the stormwater drainage, source controls and treatment systems, and/or other equipment and systems that could fail and result in contamination of stormwater. The SWPPP shall include the schedule/frequency for completing each maintenance task. At a minimum the following Good Housekeeping BMPs are mandatory. The Permittee may omit individual "mandatory" BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.

Preventive Maintenance:

- Clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe.
- Inspect all equipment and vehicles during monthly site inspections for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and vehicles out of service or prevent leaks from spilling on the ground until repaired.
- Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the discharge of pollutants.
- Condition S3. of the Industrial Stormwater General Permit requires the SWPPP to include the "applicable" Preventative Maintenance Operational and Source Control BMPs listed in Ecology's SWMMs, or other guidance documents as mandatory. **NOTE: Ecology has provided a list of BMPs**

applicable to certain industrial activities or facilities in Appendix E. "Cut" the Preventative Maintenance Operational Source Control BMPs that apply to your industrial activity from Appendix E, and "paste" them here:

INSERT DESCRIPTION OF ADDITIONAL BMPs HERE, IF APPLICABLE OR NECESSARY BASED ON CORRECTIVE ACTIONS

Spill Prevention and Emergency Cleanup:

Instructions (see S3.B.4.b.i.4 Spill Prevention and Emergency Cleanup Plan pg. 17 of the ISWGP):

Include a Spill Prevention and Emergency Cleanup Plan (SPECP) that includes BMPs to prevent spills that can contaminate stormwater. The SPECP shall specify BMPs for material handling procedures, storage requirements, cleanup equipment and procedures, and spill logs, as appropriate.

- Describe any BMPs or procedures used to minimize the potential for leaks, spills, and other releases.
- Describe where each BMP is to be located or where applicable procedures will be implemented (pg 17-18, S3.B.4.b.i.4.a-i) at your site.
- Note: Some facilities may be required to develop a Spill Prevention Control and Countermeasure (SPCC) plan under a separate regulatory program (40 CFR 112). If you are required to develop an SPCC plan, or you already have one, you should include references to the relevant requirements from your plan. Such a plan may be included by reference if it contains these necessary elements.)

Spill Prevention and Emergency Cleanup:

- Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.
- Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a written plan on how it will manage and dispose of accumulated water if a containment area cover is not practical.
- Locate spill kits within 25 feet of all stationary fueling stations, fuel transfer stations, and mobile fueling units. At a minimum, spill kits shall include:
 - Oil absorbents capable of absorbing 15 gallons of fuel.
 - A storm drain plug or cover kit.
 - A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity.
 - A non-metallic shovel.
 - Two five-gallon buckets with lids.
- Not lock shut-off fueling nozzles in the open position. Do not "topoff" tanks being refueled.
- Block, plug or cover storm drains that receive runoff from areas where fueling, during fueling.
- Use drip pans or equivalent containment measures during all petroleum transfer operations.

- Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas).
- Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to on-site storage or disposal.
- Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; date/time clean-up completed, notifications made and staff involved.
- Condition S3. of the Industrial Stormwater General Permit requires the SWPPP to include the “applicable” Spill Prevention Operational and Source Control BMPs listed in Ecology’s SWMMs, or other guidance documents as mandatory. **NOTE: Ecology has provided a list of BMPs applicable to certain industrial activities or facilities in Appendix E. “Cut” the Spill Prevention Operational Source Control BMPs that apply to your industrial activity from Appendix E, and “paste” them here:**

INSERT DESCRIPTION OF ADDITIONAL BMPs HERE, IF APPLICABLE OR NECESSARY BASED ON CORRECTIVE ACTIONS

Employee Training

Instructions (see S3.B.4.b.i.5 Employee Training) pg. 18 of the ISWGP):

- Describe your plan for training the employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of the ISWGP, including all members of your Pollution Prevention Team. Included in your description must be the frequency and schedule of training (note: you are required under the ISWGP to provide proof of training of at least one time per year).

Be sure to address the following items in this section:

- The content of the training:
 - An overview of what is in the SWPPP.
 - How employees make a difference in complying with the SWPPP and preventing contamination of stormwater.
 - Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
- How the Permittee will conduct training.
- The frequency/schedule of training. The Permittee shall train employees annually, at a minimum.
- A log of the dates on which specific employees received training.

INSERT DESCRIPTION OF PLAN FOR TRAINING APPLICABLE STAFF HERE.

Inspections, Reporting, and Recordkeeping

Instructions (see S3.B.4.b.i.6 Inspections and Recordkeeping pg. 18; S7 INSPECTIONS and S9 REPORTING AND RECORDKEEPING of the ISWGP):

- The Permittee must conduct and document visual inspections of the site each month.
- The Permittee must ensure that inspections are conducted by qualified personnel.
- Definition: *Qualified Personnel* means people who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit.
- Describe the documentation procedures for inspections and recordkeeping below. Documentation of monthly inspections must be kept on-site available for Ecology inspection (use Inspection Report Form in Appendix F).

- Identify facility personnel who will inspect designated equipment and facility areas as required in Condition S7.
- Contain a visual inspection report or check list that includes all items required by Condition S7.C.
- Provide a tracking or follow-up procedure to ensure that a report is prepared and any appropriate action taken in response to visual inspections.
- Define how the Permittee will comply with signature requirements and records retention identified in Special Condition S9, Reporting and Recordkeeping Requirements.
- Include a certification of compliance with the SWPPP and permit for each inspection using the language in S7.C.1.c.

INSERT DESCRIPTION OF PLAN FOR MONTHLY INSPECTION, QUARTERLY DMR REPORTING, ANNUAL CORRECTIVE ACTION REPORTING, AND RECORDKEEPING. INCLUDE REPORTING PERMIT VIOLATION PROCEDURES (PG 39 9SE.) HERE.

Illicit Discharges

Instructions (see S3.B.4.b.i.7. pg. 19):

- The SWPPP must include measures to identify and eliminate the discharge of process wastewater, domestic wastewater, noncontact cooling water, and other illicit discharges, to stormwater sewers, or to surface waters and ground waters of the state.
- The Permittee can find BMPs to identify and eliminate illicit discharges in Volume IV of Ecology's SWMM for Western Washington and Chapter 8 of the SWMM for Eastern Washington:
<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html>
- Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater. The Permittee must not allow this process wastewater to comeingle with stormwater or enter storm drains; and must collect in a tank for off-site disposal, or discharge it to a sanitary sewer, with written approval from the local sewage authority.
- The following text would be an acceptable way to address this permit condition and should be retained or modified, as appropriate.

Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater. The Permittee must not allow this process wastewater to comeingle with stormwater or enter storm drains; and must collect in a tank for off-site disposal, or discharge it to a sanitary sewer, with written approval from the local sewage authority.

During each monthly site inspection, look for signs of illicit discharges, especially during dry weather when stormwater isn't discharging from the site. Each monthly site inspection will include:

- Observations made at stormwater sampling locations and areas where stormwater associated with industrial activity is discharged off-site; or discharged to waters of the state, or to a storm sewer system that drains to waters of the state.
- Observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharge(s).
- Observations for the presence of illicit discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate).
 - If an illicit discharge is discovered, the Permittee shall notify Ecology within seven days.
 - The Permittee shall eliminate the illicit discharge within 30 days.

3.2. *Structural Source Control BMPs*

Instructions (see S3.B.4.ii. Structural Source Control pg. 19 of the ISWGP):

Describe BMPs to minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and *runoff* by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.

Mandatory Structural Source Control BMPs required by Condition S3. of the Industrial Stormwater General Permit:

- Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations).
- Perform all cleaning operations indoors, under cover, or in bermed areas that prevent stormwater runoff and run-on and also that capture any overspray.
- Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the stormwater drainage system.
- Condition S3. of the Industrial Stormwater General Permit requires the SWPPP to include the "applicable" Structural Source Control BMPs listed in Ecology's SWMMs, or other guidance documents as mandatory. **NOTE: Ecology has provided a list of BMPs applicable to certain industrial activities or facilities in Appendix E. "Cut" the Structural Source Control BMPs that apply to your industrial activity from Appendix E, and "paste" them here:**

INSERT DESCRIPTION OF ADDITIONAL BMPs HERE, IF APPLICABLE OR NECESSARY BASED ON CORRECTIVE ACTIONS

3.3. Treatment BMPs

Instructions: The previously listed operational and structural source control BMPs are designed to prevent the contact of stormwater with pollutants. Contamination of stormwater can still occur in spite of source control BMPs. Develop a list of treatment BMPs to address this residual pollution, including the Mandatory BMPs in the Permit, and "Applicable BMPs" from the Stormwater Management Manuals. Include any existing stormwater controls at the site (e.g., oil/water separators, vaults, catch basins, swales, etc.) and discuss their effectiveness at reducing contamination of discharges.

Treatment BMPs include all BMPs that are intended to remove pollutants from stormwater. Some treatment BMPs only addresses certain pollutant types (e.g., sediment, petroleum hydrocarbons, metals, etc.); some address combinations of pollutant types. Examples of treatment BMPs include, but are not limited to:

- Detention or retention basins and vaults
- Oil/water separators
- Infiltration basins or trenches
- Bio-filtration (or Bio-infiltration) swales
- Media (e.g. compost, etc.) filters, including downspout media filters and catch basin media filters
- Sand Filters
- Advanced chemical treatment structures including chitosan enhanced sand filtration systems, and electro-coagulation systems (need prior approval by Ecology).

For each treatment BMP or structure at your facility, fill out a copy of the following table with the appropriate information (cut/paste additional tables, if necessary). Additional treatment BMPs added over time (e.g., Level 3 corrective actions) need to be included in this section.

Structure:

Date of Implementation:

Discharge Point:

Area(s) Treated:

Pollutants Removed:

Maintenance Requirement(s):

Frequency:

Structure:

Date of Implementation:

Discharge Point:

Area(s) Treated:

Pollutants Removed:

Maintenance Requirement(s):

Frequency:

Mandatory Treatment BMPs required by Condition S3. of the Industrial Stormwater General Permit
(See Condition [S3.B.4.b.iii](#) of the permit ([beginning on pg. 20](#)) for more information):

- Condition S3 of the Industrial Stormwater General Permit requires permittees to implement Treatment BMPs listed as “applicable” in Ecology’s SWMMs, or other approved guidance documents (see Condition S3.A.3).
- The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.
- Employ oil/water separators, booms, skimmers or other methods to eliminate or minimize oil and grease contamination of stormwater discharges.
 - Many “off the shelf” oil removal BMPs are available (Absorptive booms, skimmers, pads, etc.)
 - If an **oil/water separator** needs to be designed and installed, refer to:
 - Stormwater Management Manual for Western WA (Vol. V, Ch.11):
<http://www.ecy.wa.gov/biblio/0510033.html>
 - Stormwater Management Manual for Eastern WA (Chapter 5.10)
<http://www.ecy.wa.gov/pubs/0410076.pdf>
- Obtain Ecology approval before beginning construction/installation of all treatment BMPs that include the addition of chemicals to provide treatment (e.g., polymer enhanced sand-filter systems, electro-coagulation systems, etc).

Applicable Treatment BMPs from Ecology’s Stormwater Management Manual for Western Washington

NOTE: Only include the Treatment BMPs that are relevant to your type of operation/industry:

Treatment BMPs for Commercial Composting (Delete if not applicable to your facility):

- Convey all leachate from composting operations to a sanitary sewer, holding tank, or on-site treatment systems designed to treat the leachate and TSS.
- Ponds used to collect, store, or treat leachate and other contaminated waters associated with the composting process must be lined to prevent ground water contamination. Apply “AKART” or All Known Available and Reasonable Methods of Prevention and Treatment to all pond liners, regardless of the construction materials.

Treatment BMPs for Log Sorting and Handling (Delete if not applicable to your facility):

Required Treatment BMPs are presented in detail in Ecology’s Guidance Document: “Industrial Stormwater General Permit Implementation Manual for Log Yards”.

Treatment BMPs for Maintenance and Repair of Vehicles and Equipment (Delete if not applicable to your facility):

- Contaminated stormwater runoff from vehicle staging and maintenance areas must be conveyed to a sanitary sewer, if allowed by the local sewer authority, or to an API or CP oil and water separator followed by a basic treatment BMP, applicable filter, or other equivalent oil treatment system.

Treatment BMPs for Parking and Storage of Vehicles and Equipment (Delete if not applicable to your facility):

- An oil removal system such as an API or CP oil and water separator, catch basin filter, or equivalent BMP, approved by the local jurisdiction, is applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site.

A high-use site is:

- Subject to an expected average daily vehicle traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area: or
- Is subject to storage of a fleet of 25 or more diesel vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).

Treatment BMPs for Railroad Yards (Delete if not applicable to your facility):

- In areas subjected to leaks/spills of oils or other chemicals convey the contaminated stormwater to appropriate treatment such as a sanitary sewer, if approved by the appropriate sewer authority, or, to a CP or API oil/water separator for floating oils, or other treatment, as approved by the local jurisdiction.

Treatment BMPs for Recyclers and Scrap Yards (Delete if not applicable to your facility):

For facilities subject to Ecology's Industrial Stormwater General Permit refer to BMP Guidance Document "Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities," for selection of BMPs. The BMPs in that guidance document can also be applied to scrap material recycling facilities depending on the pollutant sources existing at those facilities and to non-permitted facilities.

Treatment BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers (Delete if not applicable to your facility):

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local Sewer Authority, or to appropriate treatment such as an API or CP oil/water separator, catch basin filter or other appropriate system (see Volume V). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.
- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

Treatment BMPs for Storage of Liquids in Permanent Above-ground Tanks (Delete if not applicable to your facility):

- If the tank containment area is uncovered, equip the outlet from the spill-containment sump with a shutoff valve, which is normally closed and may be opened, manually or automatically, only to convey contaminated stormwater to approved treatment or disposal, or to convey uncontaminated stormwater to a storm drain. Evidence of contamination can include the presence of visible sheen, color, or turbidity in the runoff, or existing or historical operational problems at the facility. Simple pH measurements with litmus or pH paper can be used for areas subject to acid or alkaline contamination.
- At petroleum tank farms, convey stormwater contaminated with floating oil or debris in the contained area through an API or CP-type oil/water separator or other approved treatment prior to discharge to storm drain or surface water.

Treatment BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products (Delete if not applicable to your facility):

- Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

3.4. Stormwater Peak Runoff and Volume Control BMPs

Only required at facilities with “new development or redevelopment”. Delete this section if not required at your facility. See below or refer to Permit Condition S3.B.4.b.iv. pg. 20:

Facilities with *new development* or *redevelopment* (terms defined below) shall evaluate whether flow control BMPs (also called Stormwater Peak Runoff and Volume Control BMPs) are necessary to satisfy the state's AKART requirements (All Known and Reasonable Methods of Prevention, Control and Treatment), and prevent violations of water quality standards. If flow control BMPs are required, they must be selected, sized and installed according to Permit Condition S3.A.3; refer to the SWMM that applies to your area of the state, and keep a copy of plans, designs and calculations in your SWPPP:

- Stormwater Management Manual for Western WA (Vol. V): <http://www.ecy.wa.gov/biblio/0510033.html>
- Stormwater Management Manual for Eastern WA (Chapter 5)
<http://www.ecy.wa.gov/pubs/0410076.pdf>

Definitions:

New Development means land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

Redevelopment means on a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

INSERT DESCRIPTION OF STORMWATER PEAK RUNOFF AND VOLUME CONTROL BMPs HERE, IF REQUIRED; INCLUDE ENGINEERING PLANS, CALCULATIONS, DESIGNS, ETC.

Delete this section if not required at your facility.

3.5. *Erosion and Sediment Control BMPs*

Refer to Permit Condition (S3.B.4.b.iv. pg. 20):

The SWPPP must describe the erosion and sediment control BMPs necessary to prevent off-site sedimentation and violations of water quality standards. The Permittee shall implement and maintain:

- 1) Sediment control BMPs such as detention or retention ponds or traps, vegetated filter strips, bioswales, or other permanent sediment control BMPs to minimize sediment loads in stormwater discharges.
- 2) Filtration BMPs to remove solids from catch basins, sumps or other stormwater collection and conveyance system components (filter socks, modular canisters, sand filtration, centrifugal separators, etc.).

Definition:

Erosion and Sediment Control BMPs means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and sediment traps and ponds.

Instructions: Develop a list of BMPs used to prevent the erosion of earthen materials (soil, sand, gravel, etc.) that can cause off-site sedimentation and turbidity. Include any existing BMPs at the site and discuss their effectiveness at reducing contamination erosion and sediment. Typical practices include:

- Areas that are not paved are covered with landscaping or well maintained vegetation that prevents soil erosion.
- Runoff is routed to a detention or retention basin
- Catch basin inserts (filter socks) are installed in catch basin
- Impervious areas are not curbed to promote sheet flow onto vegetated areas
- A bioswale, sandfilter or other treatment structures is used to treat runoff.

For each treatment BMP or structure at your facility, fill out a copy of the following table with the appropriate information (cut/paste additional tables, if necessary).

<u>Structure:</u> <u>Date of Implementation:</u> <u>Discharge Point:</u> <u>Area(s) Treated:</u> <u>Pollutants Removed:</u> <u>Maintenance Requirement(s):</u>		<u>Frequency:</u>
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INSERT DESCRIPTION OF ADDITIONAL BMPs HERE, IF APPLICABLE OR NECESSARY BASED ON CORRECTIVE ACTIONS

Section 4. Sampling Plan

Instructions (see S3.B.5. Sampling Plan pg. 20)

Describe your procedures for conducting analytical and visual monitoring specified by the ISWGP by completing the following section.

- 1) **Discharge Location(s).** Identify all points of *discharge* to surface water, *storm sewers*, or discrete *ground water* infiltration locations, such as dry wells or *detention* ponds. [INSERT TEXT HERE](#) or use Table Below.

Discharge ID	Common description	Latitude (optional)	Longitude (optional)	Discharge Type	Comments
A1 (example)	Drain by SW corner of shop	45°00'00"	124°00'00"	Surface Water	Storm drain connected to Blue Creek
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

- 2) Identify each sampling location by its unique identifying number such as A1, A2, etc. Include these sampling locations on site map. [INSERT TEXT HERE](#) or use Table Below

Note: When identifying sampling locations, follow these permit conditions:

- The Permittee shall designate sampling location(s) at the point(s) where it discharges *stormwater* associated with *industrial activity* off-site.
- The Permittee is not required to sample on-site discharges to ground (e.g., infiltration, etc.) or *sanitary sewer* discharges, unless specifically required by *Ecology* (Condition G12).
- The Permittee shall sample each distinct point of *discharge* off-site except as otherwise exempt from monitoring as a “substantially identical outfall” per S3.B.5.b. The Permittee is required to monitor only one of the “substantially identical outfalls” if two or more outfalls discharge substantially identical effluents (based on similar industrial activities and site conditions).
- The exception to sampling each point of *discharge* in S4.B.2.c does not apply to any point of discharge subject to numeric effluent limitations (Conditions S5.C, S6.C & S6.D).

Discharge ID	Common description	Latitude (optional)	Longitude (optional)	Discharge Type	Comments
A1 (example)	Drain by SW corner of shop	45°00'00"	124°00'00"	Surface Water	Storm drain connected to Blue Creek
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

3) Substantially identical outfall exception (if applicable)

If you plan to use the substantially identical outfall exception for your discharge monitoring per Condition S4.B.2.c, include the following information here to substantiate your claim that these outfalls are substantially identical:

- Location of which discharge points the Permittee does not sample because the pollutant concentrations are substantially identical to a discharge point being sampled: **INSERT TEXT HERE**
- Description of general industrial activities conducted in the drainage area of each discharge point: **INSERT TEXT HERE**
- Description of the Best Management Practices conducted in the drainage area of each discharge point: **INSERT TEXT HERE**
- Description of the exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants to stormwater discharges: **INSERT TEXT HERE**
- Description of the *impervious surfaces* in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass, etc.): **INSERT TEXT HERE**
 - Definitions:
 - *Impervious*: A surface which cannot be easily penetrated. For instance, rain does not readily penetrate paved surfaces.
 - *Impervious surface*: A hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen

materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

- Describe the reasons why the you expect the discharge points to discharge substantially identical effluents (e.g., identical stormwater): [INSERT TEXT HERE](#)
- 4) **Staff Responsible for Sampling.** Identify the staff responsible for conducting *stormwater* sampling [INSERT TEXT HERE](#)
- 5) **Sample Collection and Handling.** Specify the procedures for sample collection and handling; and for sending samples to the laboratory [INSERT TEXT HERE](#)
- 6) **Submitting Sample Results to Ecology.** Specify the procedures for submitting Discharge Monitoring Reports (DMRs) to Ecology.

NOTE: The following excerpt from Permit Condition S9 may be retained to satisfy this requirement:

- The Permittee shall submit sampling data obtained during each reporting period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by *Ecology*.
- The Permittee shall submit sampling results within 45 days of the end of each reporting period.
- The first reporting period shall begin on the effective date of permit coverage.
- Upon permit coverage, the Permittee shall ensure that DMRs are postmarked or received by *Ecology* by the DMR Due Dates below:

Reporting Dates and DMR Due Dates

Reporting Period	Months	DMR Due Date
1 st	January-March	May 15
2 nd	April-June	August 14
3 rd	July-Sept	November 14
4 th	October-December	February 14

- DMRs shall be submitted using *Ecology's* WebDMR system or by mail to the following address:
Department of Ecology
Water Quality Program – Industrial Stormwater
PO Box 47696
Olympia, Washington 98504-7696
- Upon permit coverage, the Permittee shall submit a DMR each reporting period, whether or not the *facility* has discharged *stormwater* from the site.
- If discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter, the Permittee shall submit a DMR form indicating “no sample obtained”. If no discharge(s) occurred during the entire quarter or the discharges during

the quarter occurred outside normal working hours or during unsafe conditions, the Permittee shall submit a DMR indicating "no discharge".

- If a Permittee has suspended sampling for a parameter due to consistent attainment, the Permittee shall submit a DMR and indicate that it has achieved Consistent Attainment for that parameter(s).

7) **Sampling Parameters.** Identify parameters for analysis, holding times and preservatives, laboratory *quantitation levels*, and analytical methods.

- a. Table 2 lists the parameters that apply to all facilities
- b. Table 3 lists the parameters that only apply to certain facilities (Delete or modify if not applicable to your facility).

Table 2. Benchmarks and Sampling Requirements Applicable to All Facilities

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	Between 5.0 and 9.0	Meter/Paper ^c	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	1/quarter
Zinc, Total	µg/L	117	EPA 200.8	2.5	1/quarter

- a. The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive method (higher detection level and *quantitation level*) from 40 CFR Part 136 is sufficient to produce measurable results in its effluent, it may use that method for analysis.
- b. 1/quarter means 1 sample taken each quarter, year-round.
- c. Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

Table 3. Additional Benchmarks and Sampling Requirements Applicable to Specific Industries
 (Delete or modify if not applicable to your facility)

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
1. Chemical and Allied Products (28xx), Food and Kindred Products (20xx)					
BOD ₅	mg/L	30	EPA 405.1 or SM 5210B	2	1/quarter
Nitrate/Nitrite, as Nitrogen	mg/L	0.68	EPA 353.1	0.10	1/quarter
Phosphorus, Total	mg/L	2.0	EPA 365.1	0.10	1/quarter
2. Primary Metals(33xx), Metals Mining (10xx), Automobile Salvage and Scrap Recycling (5015 and 5093), Metals Fabricating (34xx)					

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level ^a	Minimum Sampling Frequency ^b
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	1/quarter
3. Hazardous Waste Treatment, Storage and Disposal Facilities and Dangerous Waste Recyclers subject to the provisions of Resource Conservation and Recovery Act (RCRA) Subtitle C					
Chemical Oxygen Demand (COD)	mg/L	120	SM5220-D	10	1/quarter
Ammonia, Total, as N	mg/L	2.1	SM4500-NH3-GH	0.3	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter
Arsenic, Total	µg/L	150	EPA 200.8	0.5	1/quarter
Cadmium, Total	µg/L	2.1	EPA 200.8	0.25	1/quarter
Cyanide, Total	µg/L	22	SM 4500-CN I	10	1/quarter
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Magnesium, Total	µg/L	64	EPA 200.7	80	1/quarter
Mercury, Total	µg/L	1.4	EPA 1631E	0.0005	1/quarter
Selenium, Total	µg/L	5.0	EPA 200.8	1.0	1/quarter
Silver, Total	µg/L	3.8	EPA 200.8	0.2	1/quarter
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	1/quarter
4. Air Transportation ^c (45xx)					
Ammonia	mg/L	2.1	SM4500-NH3-GH	0.3	1/quarter
BOD ₅	mg/L	30	EPA 405.1 or SM 5210B	2	1/quarter
COD	mg/L	120	EPA 410.2	5	1/quarter
Nitrate/Nitrite, as N	mg/L	0.68	EPA 4500-NO3-E/F/H	0.10	1/quarter
5. Timber Product Industry (24xx), Paper and Allied Products (26xx)					
COD	mg/L	120	SM5220-D	10	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter

- ^a The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive method (higher detection level and *quantitation level*) from 40 CFR Part 136 is sufficient to produce measurable results in their effluent, that method may be used for analysis.
- ^b 1/quarter means 1 sample taken each quarter, year-round.
- ^c For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor these additional four parameters in those outfalls that collect *runoff* from areas where deicing activities occur (SIC 4512-4581).

Section 5. SWPPP Certification

Instructions:

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- The SWPPP Certification Form is available in ISWGP Appendix 3 (pg. 59) or Appendix D of this SWPPP template.
- Sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3, S8, and G2 of the Industrial Stormwater General Permit.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

SWPPP Appendices

Attach the following documentation to the SWPPP:

Appendix A – General Location Map

Appendix B – Site Map

Appendix C – Blank Worksheets for Development of the SWPPP

Appendix D – SWPPP Certification or Recertification Form (for Level 1, 2, or 3 Corrective Action(s))

Appendix E – Applicable Industry-Specific Source Control BMPs

Appendix F – Industrial Stormwater Monthly Inspection Report

Appendix C. Blank Worksheets for Development of the SWPPP

Note: Use these forms or create your own.

Pollution Prevention Team	Worksheet #1 Completed by: _____ Title: _____ Date: _____
<p>Responsible Official: _____ Title: _____</p> <p>Team Leader: _____ Office _____</p> <p>Phone: _____</p> <p>Responsibilities:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	
<p>(1) _____ Title: _____</p> <p>Office phone _____ Cell phone _____</p> <p>Phone: _____ Office _____</p> <p>Responsibilities:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

(2) _____ Title:

Office phone _____ Cell phone _____
Office

Phone: _____

Responsibilities:

Material Inventory

Worksheet #2 _____

Completed by: _____

Title: _____

Date: _____

List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred in the past. (Including any pollutants no longer handled on-site.)

[illegible]

[illegible]

Potential Pollutant Source Identification

Date: _____

List all potential stormwater pollutants from materials handled, treated, or stored on-site.

[illegible]

List of Significant Spills and Leaks

Date: _____

List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants that were significant. Significant spills and leaks include but are **not** limited to, release of oil or hazardous substances in excess of reportable quantities (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.

[illegible]

Spill Log

Worksheet #4A

Completed by: _____

Title: _____

Date: _____

List all chemical and petroleum spills and leaks

[illegible]

Identify Areas Associated With Industrial Activity

Worksheet #5

Completed by: _____

Title: _____

Date: _____

List areas and activities, not included on Worksheets 2, 2A, and 3, which may be sources of pollution. Discuss the potential of these areas and activities as potential pollutant sources and identify any pollutant that may be generated by that activity...

[illegible]

BMP Identification		Worksheet #8 _____ Completed by: _____ Title: _____ Date: _____
Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5.		
BMPs	Brief Description of Activities or Improvements	
Good Housekeeping		
Preventive Maintenance		
Spill Prevention and Emergency Cleanup		

BMPs	Brief Description of Activities or Improvements
------	---

Inspections	
Source / Operational Control BMPs	
Erosion and Sediment Control BMPs	

Additional BMP Identification

Completed by: _____

Title: _____

Date: _____

Describe any treatment and innovative BMPs that are required to address existing and potential pollutant sources identified in Worksheet 3, 4, and 5. These are BMPs needed to prevent the discharge of significant amounts of pollutants despite implementation of operational and source control BMPs.

BMPs**Brief Description of Activities or Improvements**

Treatment BMPs

Emerging
technologies

Flow Control BMPs

		Completed by: _____ Title: _____ Date: _____	
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.			
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Good Housekeeping	1.		
	2.		
	3.		
Preventive Maintenance	1.		
	2.		
	3.		
	4.		
Spill Prevention and Emergency Cleanup	1.		
	2.		
	3.		
Inspections	1.		
	2.		
	3.		

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1.		
	2.		
Operational Control BMPs	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
Erosion and Sediment Control	1.		
	2.		
	3.		
	4.		
Treatment BMPs	1.		
	2.		
	3.		
	4.		
Emerging technologies	1.		
	2.		
Flow Control BMPs	3.		
	4.		

Employee Training		Worksheet #10 _____	
		Completed by: _____	
		Title: _____	
		Date: _____	
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics 1.) LINE WORKERS	Brief Description of Training Program/Materials (e.g., film, newsletter, course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response			
Good Housekeeping			
Material Management Practices			
2.) P2 TEAM:			
SWPPP Implementation			
Monitoring Procedures			

Appendix D. SWPPP Certification Form

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐ Yes ☐ No

If **Yes**:

- Type of Corrective Action?: ☐ Level 1 ☐ Level 2 ☐ Level 3
- Date SWPPP update/revision completed:_____.

"I certify under penalty of law that this SWPPP 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 information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator's Printed Name *

Title

Operator's Signature *

Date

* Federal regulations require this document to be signed as follows:

For a corporation, by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

This document shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Changes to authorization. If an authorization under number 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of number 2 above shall be submitted to Ecology prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

Appendix E. List of Applicable Industry-Specific Source Control BMPs

Mandatory BMPs:

Condition S3. of the Industrial Stormwater General Permit requires SWPPP to include all Operational and Structural Source Control BMPs listed as “applicable” in Ecology’s SWMMs, or other guidance documents as mandatory. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.

Cut and paste applicable BMPs from Appendix E into the Sections 3 of this template.

Operational Source Control BMPs for Building, Repair, and Maintenance of Boats and Ships:

- Clean regularly all accessible work, service and storage areas to remove debris, spent sandblasting material, and any other potential stormwater pollutants.
- Sweep rather than hose debris on the dock. If hosing is unavoidable the hose water must be collected and conveyed to treatment.
- Collect spent abrasives regularly and store under cover to await proper disposal.
- Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- Drain oil filters before disposal or recycling.
- Immediately repair or replace leaking connections, valves, pipes, hoses and equipment that causes the contamination of stormwater.
- Use drip pans, drop cloths, tarpaulins or other protective devices in all paint mixing and solvent operations unless carried out in impervious contained and covered areas.
- Convey sanitary sewage to pump-out stations, portable on-site pump-outs, or commercial mobile pump-out facilities or other appropriate onshore facilities.
- Maintain automatic bilge pumps in a manner that will prevent waste material from being pumped automatically into surface water.
- Prohibit uncontained spray painting, blasting or sanding activities over open water.
- Do not dump or pour waste materials down floor drains, sinks, or outdoor storm drain inlets that discharge to surface water. Plug floor drains that are connected to storm drains or to surface water. If necessary, install a sump that is pumped regularly.
- Prohibit outside spray painting, blasting or sanding activities during windy conditions that render containment ineffective.
- Do not burn paint and/or use spray guns on topsides or above decks.
- Immediately clean up any spillage on dock, boat or ship deck areas and dispose of the wastes properly.
- In the event of an accidental discharge of oil or hazardous material into waters of the state or onto land with a potential for entry into state waters, immediately notify the yard, port, or marina owner or manager, the Department of Ecology, and the National Response Center at

1-800-424-8802 (24-hour). If the spill can reach or has reached marine water, call the U.S. Coast Guard at (206) 217-6232.

Operational Source Control BMPs for Commercial Animal Handling Areas:

- Regularly sweep and clean animal keeping areas to collect and properly dispose of droppings, uneaten food, and other potential stormwater contaminants.
- Do not hose down to storm drains or to receiving water those areas that contain potential stormwater contaminants.
- Do not allow any washwaters to be discharged to storm drains or to receiving water without proper treatment.
- If animals are kept in unpaved and uncovered areas, the ground must either have vegetative cover or some other type of ground cover such as mulch.
- If animals are not leashed or in cages, the area where animals are kept must be surrounded by a fence or other means that prevents animals from moving away from the controlled area where BMPs are used.

Operational Source Control BMPs for Commercial Composting:

- Ensure that the compost feedstocks do not contain dangerous wastes, regulated under Chapter 173-303 WAC or hazardous products of a similar nature, or solid wastes that are not beneficial to the composting process. Employees must be trained to screen these materials in incoming wastes.
- Contact other federal, state, and local agencies with environmental or zoning authority for applicable permit and regulatory information. Local health departments are responsible for issuing solid waste handling permits for commercial compost facilities.
- Apply for coverage under the General Permit to Discharge Stormwater Associated with Industrial Activities, if the facility discharges stormwater to surface water or a municipal stormwater system. If all stormwater from the facility infiltrates into the surrounding area, the General Permit is not required.
- Discharge of compost leachate, stormwater that has contacted compost, or stormwater comingled with leachate is prohibited.
- Develop a plan of operations as outlined in the Compost Facility Resource Handbook, Publication #97-502.
- Store finished compost in a manner to prevent contamination of stormwater.

Operational Source Control BMPs for Commercial Printing Operations:

- Discharge process wastewaters to a sanitary sewer, if approved by the local sewer authority, or to an approved process wastewater treatment system.
- Do not discharge process wastes or wastewaters into storm drains or surface water.
- Determine whether any of these wastes qualify for regulation as dangerous wastes and dispose of them accordingly.

Operational Source Control BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots:

- Sprinkle or wet down soil or dust with water as long as it does not result in a wastewater discharge.
- Use only local and/or state government approved dust suppressant chemicals such as those listed in Ecology Publication #96-433, "Techniques for Dust Prevention and Suppression."
- Avoid excessive and repeated applications of dust suppressant chemicals. Time the application of dust suppressants to avoid or minimize their wash-off by rainfall or human activity such as irrigation.
- Apply stormwater containment to prevent the conveyance of stormwater TSS into storm drains or receiving waters.
- The use of motor oil for dust control is prohibited. Care should be taken when using lignin derivatives and other high BOD chemicals in excavations or areas easily accessible to surface water or ground water.
- Consult with the Ecology Regional Office in your area on discharge permit requirements if the dust suppression process results in a wastewater discharge to the ground, ground water, storm drain, or surface water.

Operational Source Control BMPs for Dust Control at Manufacturing Areas:

- Clean, as needed, powder material handling equipment and vehicles that can be sources of stormwater pollutants, to remove accumulated dust and residue.
- Regularly sweep dust accumulation areas that can contaminate stormwater. Sweeping should be conducted using vacuum filter equipment to minimize dust generation and to ensure optimal dust removal.

Operational Source Control BMPs for Fueling At Dedicated Stations:

- Prepare an emergency spill response and cleanup plan (per BMPs for Spills of Oil and Hazardous Substances) and have designated trained person(s) available either on site or on call at all times to promptly and properly implement that plan and immediately cleanup all spills. Keep suitable cleanup materials, such as dry adsorbent materials, on site to allow prompt cleanup of a spill.
- Train employees on the proper use of fuel dispensers. Post signs in accordance with the Uniform Fire Code (UFC). Post "No Topping Off" signs (topping off gas tanks causes spillage and vents gas fumes to the air). Make sure that the automatic shutoff on the fuel nozzle is functioning properly.
- The person conducting the fuel transfer must be present at the fueling pump during fuel transfer, particularly at unattended or self-serve stations.
- Keep drained oil filters in a suitable container or drum.

Operational Source Control BMPs for Illicit Connections to Storm Drains:

- Eliminate unpermitted wastewater discharges to storm drains, ground water, or surface water; and,
- Convey unpermitted discharges to a sanitary sewer if allowed by the local sewer authority, or to other approved treatment; and,
- Obtain appropriate permits for these discharges.

Operational Source Control BMPs for Landscaping and Lawn/Vegetation Management:

Landscaping:

- Install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.
- Do not dispose of collected vegetation into waterways or storm drainage systems.

Pesticides:

- Develop and implement an Integrated Pest Management (IPM) plan and use pesticides only as a last resort.

An IPM program might consist of the following steps:

Step 1: Correctly identify problem pests and understand their life cycle

Step 2: Establish tolerance thresholds for pests.

Step 3: Monitor to detect and prevent pest problems.

Step 4: Modify the maintenance program to promote healthy plants and discourage pests.

Step 5: Use cultural, physical, mechanical, or biological controls first if pests exceed the tolerance thresholds.

Step 6: Evaluate and record the effectiveness of the control and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.

- Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping, and public notice procedures. All procedures shall conform to the requirements of Chapter 17.21 RCW and Chapter 16-228 WAC (Appendix IV-D R.7).
- Choose the least toxic pesticide available that is capable of reducing the infestation to acceptable levels. The pesticide should readily degrade in the environment and/or have properties that strongly bind it to the soil. Any pest control used should be conducted at the life stage when the pest is most vulnerable. For example, if it is necessary to use a *Bacillus thuringiensis* application to control tent caterpillars, it must be applied before the caterpillars cocoon or it will be ineffective. Any method used should be site-specific and not used wholesale over a wide area.
- Apply the pesticide according to label directions. Under no conditions shall pesticides be applied in quantities that exceed manufacturer's instructions.
- Mix the pesticides and clean the application equipment in an area where accidental spills will not enter surface or ground waters, and will not contaminate the soil.

- Store pesticides in enclosed areas or in covered impervious containment. Ensure that pesticide contaminated stormwater or spills/leaks of pesticides are not discharged to storm drains. Do not hose down the paved areas to a storm drain or conveyance ditch. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Clean up any spilled pesticides and ensure that the pesticide contaminated waste materials are kept in designated covered and contained areas.
- The pesticide application equipment must be capable of immediate shutoff in the event of an emergency.
- Do not spray pesticides within 100 feet of open waters including wetlands, ponds, and streams, sloughs and any drainage ditch or channel that leads to open water except when approved by Ecology or the local jurisdiction. All sensitive areas including wells, creeks and wetlands must be flagged prior to spraying.
- As required by the local government or by Ecology, complete public posting of the area to be sprayed prior to the application.
- Spray applications should only be conducted during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.

Vegetation Management:

- Use at least an eight-inch "topsoil" layer with at least 8 percent organic matter to provide a sufficient vegetation-growing medium. Amending existing landscapes and turf systems by increasing the percent organic matter and depth of topsoil can substantially improve the permeability of the soil, the disease and drought resistance of the vegetation, and reduce fertilizer demand. This reduces the demand for fertilizers, herbicides, and pesticides. Organic matter is the least water-soluble form of nutrients that can be added to the soil. Composted organic matter generally releases only between 2 and 10 percent of its total nitrogen annually, and this release corresponds closely to the plant growth cycle. If natural plant debris and mulch are returned to the soil, this system can continue recycling nutrients indefinitely.
- Select the appropriate turfgrass mixture for your climate and soil type. Certain tall fescues and rye grasses resist insect attack because the symbiotic endophytic fungi found naturally in their tissues repel or kill common leaf and stem-eating lawn insects. They do not, however, repel root-feeding lawn pests such as Crane Fly larvae, and are toxic to ruminants such as cattle and sheep. The fungus causes no known adverse effects to the host plant or to humans. Endophytic grasses are commercially available and can be used in areas such as parks or golf courses where grazing does not occur. The local Cooperative Extension office can offer advice on which types of grass are best suited to the area and soil type.
- Use the following seeding and planting BMPs, or equivalent BMPs to obtain information on grass mixtures, temporary and permanent seeding procedures, maintenance of a recently planted area, and fertilizer application rates: Temporary Seeding, Mulching and Matting, Clear Plastic Covering, Permanent Seeding and Planting, and Sodding as described in Volume II).
- Selection of desired plant species can be made by adjusting the soil properties of the subject site. For example, a constructed wetland can be designed to resist the invasion of reed canary grass by layering specific strata of organic matters (e.g., compost forest product residuals)

and creating a mildly acidic pH and carbon-rich soil medium. Consult a soil restoration specialist for site-specific conditions.

- Aerate lawns regularly in areas of heavy use where the soil tends to become compacted. Aeration should be conducted while the grasses in the lawn are growing most vigorously. Remove layers of thatch greater than ¾-inch deep.
- Mowing is a stress-creating activity for turfgrass. When grass is mowed too short its productivity is decreased and there is less growth of roots and rhizomes. The turf becomes less tolerant of environmental stresses, more disease prone and more reliant on outside means such as pesticides, fertilizers and irrigation to remain healthy. Set the mowing height at the highest acceptable level and mow at times and intervals designed to minimize stress on the turf. Generally mowing only 1/3 of the grass blade height will prevent stressing the turf.

Irrigation:

- The depth from which a plant normally extracts water depends on the rooting depth of the plant. Appropriately irrigated lawn grasses normally root in the top 6 to 12 inches of soil; lawns irrigated on a daily basis often root only in the top 1 inch of soil. Improper irrigation can encourage pest problems, leach nutrients, and make a lawn completely dependent on artificial watering. The amount of water applied depends on the normal rooting depth of the turfgrass species used, the available water holding capacity of the soil, and the efficiency of the irrigation system. Consult with the local water utility, Conservation District, or Cooperative Extension office to help determine optimum irrigation practices.

Fertilizer Management:

- Turfgrass is most responsive to nitrogen fertilization, followed by potassium and phosphorus. Fertilization needs vary by site depending on plant, soil and climatic conditions. Evaluation of soil nutrient levels through regular testing ensures the best possible efficiency and economy of fertilization. For details on soils testing, contact the local Conservation District or Cooperative Extension Service.
- Fertilizers should be applied in amounts appropriate for the target vegetation and at the time of year that minimizes losses to surface and ground waters. Do not fertilize during a drought or when the soil is dry. Alternatively, do not apply fertilizers within three days prior to predicted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.
- Use slow release fertilizers such as methylene urea, IDBU, or resin coated fertilizers when appropriate, generally in the spring. Use of slow release fertilizers is especially important in areas with sandy or gravelly soils.
- Time the fertilizer application to periods of maximum plant uptake. Generally fall and spring applications are recommended, although WSU turf specialists recommend four fertilizer applications per year.
- Properly trained persons should apply all fertilizers. At commercial and industrial facilities fertilizers should not be applied to grass swales, filter strips, or buffer areas that drain to sensitive water bodies unless approved by the local jurisdiction.

Operational Source Control BMPs for Loading and Unloading Areas for Liquid or Solid Material:

All Loading/Unloading Areas:

- A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could otherwise be washed off by stormwater. Sweep outside areas that are covered for a period of time by containers, logs, or other material after the areas are cleared.
- Place drip pans, or other appropriate temporary containment device, at locations where leaks or spills may occur such as hose connections, hose reels and filler nozzles. Drip pans shall always be used when making and breaking connections (see Figure 2.2). Check loading/unloading equipment such as valves, pumps, flanges, and connections regularly for leaks and repair as needed.

Tanker Truck and Rail Transfer Areas to Above/Below-ground Storage Tanks:

- To minimize the risk of accidental spillage, prepare an "Operations Plan" that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it or otherwise have it readily available to employees.
- Report spills of reportable quantities to Ecology (refer to Section 2.1 for telephone numbers of Ecology Regional Offices).
- Prepare and implement an Emergency Spill Cleanup Plan for the facility (BMP Spills of Oil and Hazardous Substances) which includes the following BMPs:
 - Ensure the clean up of liquid/solid spills in the loading/ unloading area immediately, if a significant spill occurs, and, upon completion of the loading/unloading activity, or, at the end of the working day.
 - Retain and maintain an appropriate oil spill cleanup kit on-site for rapid cleanup of material spills. (See BMP Spills of Oil and Hazardous Substances).
 - Ensure that an employee trained in spill containment and cleanup is present during loading/unloading.

Rail Transfer Areas to Above/below-ground Storage Tanks:

- Install a drip pan system as illustrated (see Figure 2.3) within the rails to collect spills/leaks from tank cars and hose connections, hose reels, and filler nozzles.

Loading/Unloading from/to Marine Vessels:

- Facilities and procedures for the loading or unloading of petroleum products must comply with Coast Guard requirements.

Transfer of Small Quantities from Tanks and Containers:

- Refer to BMPs Storage of Liquids in Permanent Above-Ground Tanks, and Storage of Liquid, Food Waste, or Dangerous Waste Containers, for requirements on the transfer of small quantities from tanks and containers, respectively.

Operational Source Control BMPs for Log Sorting and Handling:

- Required operational source control BMPs are presented in detail in Ecology's Guidance Document: "Industrial Stormwater General Permit Implementation Manual for Log Yards"

Operational Source Control BMPs for Maintenance and Repair of Vehicles and Equipment:

- Inspect for leaks all incoming vehicles, parts, and equipment stored temporarily outside.
- Use drip pans or containers under parts or vehicles that drip or that are likely to drip liquids, such as during dismantling of liquid containing parts or removal or transfer of liquids.
- Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system.
- Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.
- Do not pour/convey washwater, liquid waste, or other pollutant into storm drains or to surface water. Check with the local sanitary sewer authority for approval to convey to a sanitary sewer.
- Do not connect maintenance and repair shop floor drains to storm drains or to surface water. To allow for snowmelt during the winter a drainage trench with a sump for particulate collection can be installed and used only for draining the snowmelt and not for discharging any vehicular or shop pollutants.

Operational Source Control BMPs for Maintenance of Public and Private Utility Corridors and Facilities:

- Operational Source Control BMPs for Landscaping and Lawn/Vegetation Management and Pesticides.
- When water or sediments are removed from electric transformer vaults, determine whether contaminants might be present before disposing of the water and sediments. This includes inspecting for the presence of oil or sheen, and determining from records or testing if the transformers contain PCBs. If records or tests indicate that the sediment or water are contaminated above applicable levels, manage these media in accordance with applicable federal and state regulations, including the federal PCB rules (40 CFR 761) and the state MTCA cleanup regulations (Chapter 173-340 WAC). Water removed from the vaults can be discharged in accordance with the federal 40 CFR 761.79, and state regulations (Chapter 173-201A WAC and Chapter 173-200 WAC), or via the sanitary sewer if the requirements, including applicable permits, for such a discharge are met. (See also Appendix IV-D R.1 and R.3).
- Within utility corridors, consider preparing maintenance procedures and an implementation schedule that provides for a vegetative, gravel, or equivalent cover that minimizes bare or thinly vegetated ground surfaces within the corridor, to prevent the erosion of soil.
- Provide maintenance practices to prevent stormwater from accumulating and draining across and/or onto roadways. Stormwater should be conveyed through roadside ditches and culverts. The road should be crowned, outsloped, water barred or otherwise left in a condition not conducive to erosion. Appropriately maintaining grassy roadside ditches discharging to

surface waters is an effective way of removing some pollutants associated with sediments carried by stormwater.

- Maintain ditches and culverts at an appropriate frequency to ensure that plugging and flooding across the roadbed, with resulting overflow erosion, does not occur.
- Operational Source Control BMPs for the Storage of Waste Materials That can Contaminate Stormwater.

Operational Source Control BMPs for Maintenance of Roadside Ditches:

- Inspect roadside ditches regularly, as needed, to identify sediment accumulations and localized erosion.
- Clean ditches on a regular basis, as needed. Ditches should be kept free of rubbish and debris.
- Vegetation in ditches often prevents erosion and cleanses runoff waters. Remove vegetation only when flow is blocked or excess sediments have accumulated. Conduct ditch maintenance (seeding, fertilizer application, harvesting) in late spring and/or early fall, where possible. This allows vegetative cover to be re-established by the next wet season thereby minimizing erosion of the ditch as well as making the ditch effective as a biofilter.
- In the area between the edge of the pavement and the bottom of the ditch, commonly known as the “bare earth zone,” use grass vegetation, wherever possible. Vegetation should be established from the edge of the pavement if possible, or at least from the top of the slope of the ditch.
- Diversion ditches on top of cut slopes that are constructed to prevent slope erosion by intercepting surface drainage must be maintained to retain their diversion shape and capability.
- Ditch cleanings are not to be left on the roadway surfaces. Sweep dirt and debris remaining on the pavement at the completion of ditch cleaning operations.
- Roadside ditch cleanings, not contaminated by spills or other releases and not associated with a stormwater treatment system such as a bioswale, may be screened to remove litter and separated into soil and vegetative matter (leaves, grass, needles, branches, etc.). The soil fraction may be handled as ‘clean soils’ and the vegetative matter can be composted or disposed of in a municipal waste landfill.
- Roadside ditch cleanings contaminated by spills or other releases known or suspected to contain dangerous waste must be handled following the Dangerous Waste Regulations (Chapter 173-303 WAC) unless testing determines it is not dangerous waste.
- Examine culverts on a regular basis for scour or sedimentation at the inlet and outlet, and repair as necessary. Give priority to those culverts conveying perennial and/or salmon-bearing streams and culverts near streams in areas of high sediment load, such as those near subdivisions during construction.

Operational Source Control BMPs for Maintenance of Stormwater Drainage and Treatment Systems:

- Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine whether improvements in O & M are needed.

- Promptly repair any deterioration threatening the structural integrity of the facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways.
- Ensure that storm sewer capacities are not exceeded and that heavy sediment discharges to the sewer system are prevented.
- Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc. and discharge to a sanitary sewer if approved by the sewer authority, or truck to a local or state government approved disposal site.
- Clean catch basins when the depth of deposits reaches 60 percent of the sump depth as measured from the bottom of basin to the invert of the lowest pipe into or out of the basin. However, in no case should there be less than six inches clearance from the debris surface to the invert of the lowest pipe. Some catch basins (for example, WSDOT Type 1L basins) may have as little as 12 inches sediment storage below the invert. These catch basins will need more frequent inspection and cleaning to prevent scouring. Where these catch basins are part of a stormwater collection and treatment system, the system owner/operator may choose to concentrate maintenance efforts on downstream control devices as part of a systems approach.
- Clean woody debris in a catch basin as frequently as needed to ensure proper operation of the catch basin.
- Post warning signs; “Dump No Waste - Drains to Ground Water,” “Streams,” “Lakes,” or emboss on or adjacent to all storm drain inlets where practical.
- Disposal of sediments and liquids from the catch basins must comply with “Recommendations for Management of Street Wastes” described in Appendix IV-G of this volume.
- Operational Source Control BMPs for Soil Erosion and Sediment Control at Industrial Sites, Storage of Liquid, Food Waste, or Dangerous Waste Containers, Spills of Oil and Hazardous Substances, Illicit Connections to Storm Drains, Urban Streets.

Operational Source Control BMPs for Manufacturing Activities - Outside:

- Alter the activity by eliminating or minimizing the contamination of stormwater.
- Enclose the activity (see Figure 2.6): If possible, enclose the manufacturing activity in a building.
- Cover the activity and connect floor drains to a sanitary sewer, if approved by the local sewer authority. Berm or slope the floor as needed to prevent drainage of pollutants to outside areas. (Figure 2.7)
- Isolate and segregate pollutants as feasible. Convey the segregated pollutants to a sanitary sewer, process treatment or a dead-end sump depending on available methods and applicable permit requirements.

Operational Source Control BMPs for Mobile Fueling of Vehicles and Heavy Equipment:

- Ensure that all mobile fueling operations are approved by the local fire department and comply with local and Washington State fire codes.
- In fueling locations that are in close proximity to sensitive aquifers, designated wetlands, wetland buffers, or other waters of the State, approval by local jurisdictions is necessary to ensure compliance with additional local requirements.

- Ensure the compliance with all 49 CFR 178 requirements for DOT 406 cargo tanker. Documentation from a Department of Transportation (DOT) Registered Inspector shall be proof of compliance.
- Ensure the presence and the constant observation/monitoring of the driver/operator at the fuel transfer location at all times during fuel transfer and ensure that the following procedures are implemented at the fuel transfer locations:
 - Locating the point of fueling at least 25 feet from the nearest storm drain or inside an impervious containment with a volumetric holding capacity equal to or greater than 110 percent of the fueling tank volume, or covering the storm drain to ensure no inflow of spilled or leaked fuel. Storm drains that convey the inflow to a spill control separator approved by the local jurisdiction and the fire department need not be covered. Potential spill/leak conveyance surfaces must be impervious and in good repair.
 - Placement of a drip pan, or an absorbent pad under each fueling location prior to and during all dispensing operations. The pan (must be liquid tight) and the absorbent pad must have a capacity of 5 gallons. Spills retained in the drip pan or the pad need not be reported.
 - The handling and operation of fuel transfer hoses and nozzle, drip pan(s), and absorbent pads as needed to prevent spills/leaks of fuel from reaching the ground, storm drains, and receiving waters.
 - Not extending the fueling hoses across a traffic lane without fluorescent traffic cones, or equivalent devices, conspicuously placed so that all traffic is blocked from crossing the fuel hose.
 - Removing the fill nozzle and cessation of filling when the automatic shut-off valve engages. Do not allow automatic shutoff fueling nozzles to be locked in the open position.
 - Not “topping off” the fuel receiving equipment
- Provide the driver/operator of the fueling vehicle with:
 - Adequate flashlights or other mobile lighting to view fill openings with poor accessibility. Consult with local fire department for additional lighting requirements.
 - Two-way communication with his/her home base.
- Train the driver/operator annually in spill prevention and cleanup measures and emergency procedures. Make all employees aware of the significant liability associated with fuel spills.
- The fueling operating procedures should be properly signed and dated by the responsible manager, distributed to the operators, retained in the organization files, and made available in the event an authorized government agency requests a review.
- Ensure that the local fire department (911) and the appropriate regional office of the Department of Ecology are immediately notified in the event of any spill entering the surface or ground waters. Establish a “call down list” to ensure the rapid and proper notification of management and government officials should any significant amount of product be lost off-site. Keep the list in a protected but readily accessible location in the mobile fueling truck. The “call down list” should also pre-identify spill response contractors available in the area to ensure the rapid removal of significant product spillage into the environment.
- Maintain a minimum of the following spill clean-up materials in all fueling vehicles, that are readily available for use:
 - Non-water absorbents capable of absorbing 15 gallons of diesel fuel;
 - A storm drain plug or cover kit;

- A non-water absorbent containment boom of a minimum 10 feet in length with a 12-gallon absorbent capacity;
- A non-metallic shovel; and,
- Two, five-gallon buckets with lids.
- Use automatic shutoff nozzles for dispensing the fuel. Replace automatic shut-off nozzles as recommended by the manufacturer.
- Maintain and replace equipment on fueling vehicles, particularly hoses and nozzles, at established intervals to prevent failures.

Operational Source Control BMPs for Painting/Finishing/ Coating of Vehicles/Boats/ Buildings/ Equipment:

- Train employees in the careful application of paints, finishes, and coatings to reduce misuse and over spray. Use ground or drop cloths underneath outdoor painting, scraping, sandblasting work, and properly clean and temporarily store collected debris daily.
- Do not conduct spraying, blasting, or sanding activities over open water or where wind may blow paint into water.
- Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a storm drain or receiving water or conveyance ditch to receiving water.
- On marine dock areas sweep rather than hose down debris. Collect any hose water generated and convey to appropriate treatment and disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control device if dust, grit, washwater, or other pollutants may escape the work area and enter a catch basin. The containment device(s) must be in place at the beginning of the workday. Collect contaminated runoff and solids and properly dispose of such wastes before removing the containment device(s) at the end of the workday.
- Use a ground cloth, pail, drum, drip pan, tarpaulin, or other protective device for activities such as paint mixing and tool cleaning outside or where spills can contaminate stormwater.
- Properly dispose of all wastes and prevent all uncontrolled releases to the air, ground or water.
- Clean brushes and tools covered with non-water-based paints, finishes, or other materials in a manner that allows collection of used solvents (e.g., paint thinner, turpentine, xylol, etc.) for recycling or proper disposal.
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater.

Operational Source Control BMPs for Parking and Storage of Vehicles and Equipment:

- If washing of a parking lot is conducted, discharge the washwater to a sanitary sewer, if allowed by the local sewer authority, or other approved wastewater treatment system, or collect it for off-site disposal.
- Do not hose down the area to a storm drain or to a receiving water. Sweep parking lots, storage areas, and driveways, regularly to collect dirt, waste, and debris.

Operational Source Control BMPs for Railroad Yards:

- Implement all required BMPs depending on the pollutant generating activities/sources at a railroad yard facility.
- Do not allow discharge to outside areas from toilets while a train is in transit. Pumpout facilities should be used to service these units.
- Use drip pans at hose/pipe connections during liquid transfer and other leak-prone areas.
- During maintenance do not discard debris or waste liquids along the tracks or in railroad yards.

Operational Source Control BMPs for Recyclers and Scrap Yards:

For facilities subject to Ecology's Industrial Stormwater General Permit refer to BMP Guidance Document "Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities," for selection of BMPs. The BMPs in that guidance document can also be applied to scrap material recycling facilities depending on the pollutant sources existing at those facilities and to non-permitted facilities.

Operational Source Control BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings:

- If leachates and/or emissions from buildings are suspected sources of stormwater pollutants, then sample and analyze the stormwater draining from the building.
- If a roof/building stormwater pollutant source is identified, implement appropriate source control measures such as air pollution control equipment, selection of materials, painting galvanized surfaces, operational changes, material recycle, process changes, etc.

Operational Source Control BMPs for Soil Erosion and Sediment Control at Industrial Sites:

- Cover Practice Options:
 - Vegetative cover such as grass, trees, shrubs, on erodible soil areas; or,
 - Covering with mats such as clear plastic, jute, synthetic fiber; and/or,
 - Preservation of natural vegetation including grass, trees, shrubs, and vines,
- Structural Practice Options:
 - Vegetated swale, dike, silt fence, check dam, gravel filter berm, sedimentation basin, and proper grading.

Operational Source Control BMPs for Spills of Oil and Hazardous Substances:

- Prepare an Emergency Spill Control Plan (SCP), which includes:
 - A description of the facility including the owner's name and address;
 - The nature of the activity at the facility;
 - The general types of chemicals used or stored at the facility;
 - A site plan showing the location of storage areas for chemicals, the locations of storm drains, the areas draining to them, and the location and description of any devices to stop spills from leaving the site such as positive control valves;

- Cleanup procedures;
- Notification procedures to be used in the event of a spill, such as notifying key personnel. Agencies such as Ecology, local fire department, Washington State Patrol, and the local Sewer Authority, shall be notified;
- The name of the designated person with overall spill cleanup and notification responsibility;
- Train key personnel in the implementation of the Emergency SCP. Prepare a summary of the plan and post it at appropriate points in the building, identifying the spill cleanup coordinators, location of cleanup kits, and phone numbers of regulatory agencies to be contacted in the event of a spill;
- Update the SCP regularly;
- Immediately notify Ecology and the local Sewer Authority if a spill may reach sanitary or storm sewers, ground water, or surface water, in accordance with federal and Ecology spill reporting requirements;
- Immediately clean up spills. Do not use emulsifiers for cleanup unless an appropriate disposal method for the resulting oily wastewater is implemented. Absorbent material shall not be washed down a floor drain or storm sewer; and,
- Locate emergency spill containment and cleanup kit(s) in high potential spill areas. The contents of the kit shall be appropriate for the type and quantities of chemical liquids stored at the facility.

Operational Source Control BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers:

- Place tight-fitting lids on all containers.
- Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading of containers.
- Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers, and replace and tighten bungs in drums as needed.
- Businesses accumulating Dangerous Wastes that do not contain free liquids need only to store these wastes in a sloped designated area with the containers elevated or otherwise protected from storm water runoff.
- Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage, or any unauthorized use.
- If the material is a Dangerous Waste, the business owner must comply with any additional Ecology requirements as required.
- Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code.
- Cover dumpsters, or keep them under cover such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
- Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

Operational Source Control BMPs for Storage of Liquids in Permanent Above-ground Tanks:

- Inspect the tank containment areas regularly to identify problem components such as fittings, pipe connections, and valves, for leaks/spills, cracks, corrosion, etc.
- Place adequately sized drip pans beneath all mounted taps and drip/spill locations during filling/ unloading of tanks. Valved drain tubing may be needed in mounted drip pans.
- Sweep and clean the tank storage area regularly, if paved.
- Replace or repair tanks that are leaking, corroded, or otherwise deteriorating.
- All installations shall comply with the Uniform Fire Code and the National Electric Code

Operational Source Control BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products:

- Do not hose down the contained stockpile area to a storm drain or a conveyance to a storm drain or to a receiving water.

Operational Source Control BMPs for Washing and Steam Cleaning Vehicles/Equipment/Building Structures:

- Conduct vehicle/equipment washing in one of the following locations:
 - At a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer, or
 - In a building constructed specifically for washing of vehicles and equipment, which drains to a sanitary sewer.
- Conduct outside washing operation in a designated wash area with the following features:
 - In a paved area, constructed as a spill containment pad to prevent the run-on of stormwater from adjacent areas. Slope the spill containment area so that washwater is collected in a containment pad drain system with perimeter drains, trench drains or catchment drains. Size the containment pad to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed.
 - Convey the washwater to a sump (like a grit separator) and then to a sanitary sewer (if allowed by the local Sewer Authority), or other appropriate wastewater treatment or recycle system. An NPDES permit may be required for any washwater discharge to a storm drain or receiving water after treatment. Contact the Ecology regional office for NPDES Permit requirements.
 - The containment sump must have a positive control outlet valve for spill control with live containment volume, and oil/water separation. Size the minimum live storage volume to contain the maximum expected daily washwater flow plus the sludge storage volume below the outlet pipe. The outlet valve will be shut during the washing cycle to collect the washwater in the sump. The valve should remain shut for at least two hours following the washing operation to allow the oil and solids to separate before discharge to a sanitary sewer.
 - The inlet valve in the discharge pipe should be closed when washing is not occurring, thereby preventing the entry of uncontaminated stormwater into the pretreatment/ treatment system. The stormwater can then drain into the conveyance/discharge system outside of the wash pad (essentially bypasses the washwater treatment/conveyance

system). Post signs to inform people of the operation and purpose of the valve. Clean the concrete pad thoroughly until there is no foam or visible sheen in the washwater prior to closing the inlet valve and allowing uncontaminated stormwater to overflow and drain off the pad.

- Collect the washwater from building structures and convey it to appropriate treatment such as a sanitary sewer system if it contains oils, soaps, or detergents, where feasible. If the washwater does not contain oils, soaps, or detergents then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment.

Operational Source Control BMPs for Wood Treatment Areas:

- Dedicate equipment that is used for treatment activities to prevent the tracking of treatment chemicals to other areas on the site.
- Eliminate non-process traffic on the drip pad. Scrub down nondedicated lift trucks on the drip pad.
- Immediately remove and properly dispose of soils with visible surface contamination (green soil) to prevent the spread of chemicals to ground water and/or surface water via stormwater runoff.
- If any wood is observed to be contributing chemicals to the environment in the treated wood storage area, relocate it on a concrete chemical containment structure until the surface is clean and until it is drip free and surface dry.

Mandatory Structural Source Control BMPs required by condition S3. of the Industrial Stormwater General Permit:

- Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations).
- Perform all cleaning operations indoors, under cover, or in bermed areas that prevent stormwater runoff and run-on and also that capture any overspray.
- Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the stormwater drainage system.

Condition S3. of the Industrial Stormwater General Permit requires Structural Source Control BMPs listed as “applicable” in Ecology’s SWMMs, or other guidance documents as mandatory:

Mandatory Structural Source Control BMPs From Ecology’s Stormwater Management Manual for Western Washington:

Structural Source Control BMPs for Building, Repair, and Maintenance of Boats and Ships:

- Use fixed platforms with appropriate plastic or tarpaulin barriers as work surfaces and for containment when work is performed on a vessel in the water to prevent blast material or paint overspray from contacting stormwater or the receiving water. Use of such platforms will be kept to a minimum and at no time be used for extensive repair or construction

(anything in excess of 25 percent of the surface area of the vessel. Work above the water on the topsides is limited to the deck, and structures above the deck).

- Use plastic or tarpaulin barriers beneath the hull and between the hull and dry dock walls to contain and collect waste and spent materials. Clean and sweep regularly to remove debris.
- Enclose, cover, or contain blasting and sanding activities to the maximum extent practicable to prevent abrasives, dust, and paint chips, from reaching storm sewers or receiving water. Use plywood and/or plastic sheeting to cover open areas between decks when sandblasting (scuppers, railings, freeing ports, ladders, and doorways).
- Direct deck drainage to a collection system sump for settling and/or additional treatment.
- Store batteries in a covered secondary container.
- Apply source control BMPs for other activities conducted at the marina, boat yard, shipyard, or port facility (BMPs for Fueling at Dedicated Stations, BMPs for Washing and Steam Cleaning Vehicle/ Equipment/Building Structures, and BMPs for Spills of Oil and Hazardous Substances).

Structural Source Control BMPs for Commercial Composting:

- Compost pads are required for all uncovered facilities in areas of the state with wet climates (per water quality regulations).
- Provide curbing for all compost pads to prevent stormwater run-on and leachate run-off.
- Slope all compost pads sufficiently to direct leachate to the collection device.
- Provide one or more sumps or catch basins capable of collecting all leachate generated by the design storm and conveying it to the leachate holding structure for all compost pads.

Structural Source Control BMPs for Commercial Printing Operations:

- Store raw materials or waste materials that could contaminate stormwater in covered and contained areas.

Structural Source Control BMPs for Fueling At Dedicated Stations:

- Design the fueling island to control spills (dead-end sump or spill control separator in compliance with the UFC), and to treat collected stormwater and/or wastewater to required levels. Slope the concrete containment pad around the fueling island toward drains; either trench drains, catch basins and/or a dead-end sump. The slope of the drains shall not be less than 1 percent (Section 7901.8 of the UFC). Drains to treatment shall have a shutoff valve, which must be closed in the event of a spill. The spill control sump must be sized in compliance with Section 7901.8 of the UFC; or
- Design the fueling island as a spill containment pad with a sill or berm raised to a minimum of four inches (Section 7901.8 of the UFC) to prevent the runoff of spilled liquids and to prevent run-on of stormwater from the surrounding area. Raised sills are not required at the open-grate trenches that connect to an approved drainage-control system.
- The fueling pad must be paved with Portland cement concrete, or equivalent. Asphalt is not considered an equivalent material.
- The fueling island must have a roof or canopy to prevent the direct entry of precipitation onto the spill containment pad (see Figure 2.1). The roof or canopy should, at a minimum, cover

the spill containment pad (within the grade break or fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain. Convey all roof drains to storm drains outside the fueling containment area.

- Stormwater collected on the fuel island containment pad must be conveyed to a sanitary sewer system, if approved by the sanitary authority; or to an approved treatment system such as an oil/water separator and a basic treatment BMP. (Basic treatment BMPs are listed in Volume V and include media filters and biofilters) Discharges from treatment systems to storm drains or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a significant amount of oil and grease.
- Alternatively, stormwater collected on the fuel island containment pad may be collected and held for proper off site disposal.
- Conveyance of any fuel-contaminated stormwater to a sanitary sewer must be approved by the local sewer authority and must comply with pretreatment regulations (WAC 173-216-060). These regulations prohibit discharges that could "cause fire or explosion. An explosive or flammable mixture is defined under state and federal pretreatment regulations, based on a flash point determination of the mixture. If contaminated stormwater is determined not to be explosive, then it could be conveyed to a sanitary sewer system.
- Transfer the fuel from the delivery tank trucks to the fuel storage tank in impervious contained areas and ensure that appropriate overflow protection is used. Alternatively, cover nearby storm drains during the filling process and use drip pans under all hose connections.

Structural Source Control BMPs for Loading and Unloading Areas for Liquid or Solid Material:

All Loading/ Unloading Areas:

- Consistent with Uniform Fire Code requirements (Appendix IV-D R.2) and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building, under a roof, or lean-to, or other appropriate cover.
- Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area.
- Large loading areas frequently are not curbed along the shoreline. As a result, stormwater passes directly off the paved surface into surface water. Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal storm drain system that leads to an approved treatment BMP.
- Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated "alleyways" that are not covered by material, containers or equipment.

Loading and Unloading Docks:

- Install/maintain overhangs, or door skirts that enclose the trailer end (see Figures 2.4 and 2.5) to prevent contact with rainwater.
- Design the loading/unloading area with berms, sloping, etc. to prevent the run-on of stormwater.
- Retain on-site the necessary materials for rapid cleanup of spills.

Tanker Truck Transfer Areas to Above/Below-Ground Storage Tanks:

- Pave the area on which the transfer takes place. If any transferred liquid, such as gasoline, is reactive with asphalt pave the area with Portland cement concrete.
- Slope, berm, or dike the transfer area to a dead-end sump, spill containment sump, a spill control (SC) oil/water separator, or other spill control device. The minimum spill retention time should be 15 minutes at the greater flow rate of the highest fuel dispenser nozzle through-put rate, or the peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad, whichever is greater. The volume of the spill containment sump should be a minimum of 50 gallons with an adequate grit sedimentation volume.

Structural Source Control BMPs for Log Sorting and Handling:

Required Structural Source Control BMPs are presented in detail in Ecology's Guidance Document: "Industrial Stormwater General Permit Implementation Manual for Log Yards.

Structural Source Control BMPs for Maintenance and Repair of Vehicles and Equipment:

- Conduct all maintenance and repair of vehicles and equipment in a building, or other covered impervious containment area that is sloped to prevent run-on of uncontaminated stormwater and runoff of contaminated stormwater.
- The maintenance of refrigeration engines in refrigerated trailers may be conducted in the parking area with due caution to avoid the release of engine or refrigeration fluids to storm drains or surface water.
- Park large mobile equipment, such as log stackers, in a designated contained area.
- The Structural Source Control BMPs for the following are also required: Fueling at Dedicated Stations; Washing and Steam Cleaning Vehicle/Equipment/Building Structures; Loading and Unloading Areas for Liquid or Solid Material; Storage of Liquids in Permanent Above-Ground Tanks; Storage of Liquid, Food Waste, or Dangerous Waste Containers; Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products; Spills of Oil and Hazardous Substances; Illicit Connections to Storm Drains.

Structural Source Control BMPs for Mobile Fueling of Vehicles and Heavy Equipment:

- Automatic fuel transfer shut-off nozzles; and,
- An adequate lighting system at the filling point.

Structural Source Control BMPs for Painting/Finishing/ Coating of Vehicles/Boats/ Buildings/ Equipment:

- Enclose and/or contain all work while using a spray gun or conducting sand blasting and in compliance with applicable air pollution control, OSHA, and WISHA requirements. Do not conduct outside spraying, grit blasting, or sanding activities during windy conditions which render containment ineffective.

Structural Source Control BMPs for Recyclers and Scrap Yards:

For facilities subject to Ecology's Industrial Stormwater General Permit refer to BMP Guidance Document "Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities," for selection of BMPs. The BMPs in that guidance document can also be applied to scrap material recycling facilities depending on the pollutant sources existing at those facilities and to non-permitted facilities.

Structural Source Control BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers:

- Keep containers with Dangerous Waste, food waste, or other potential pollutant liquids inside a building unless this is impracticable due to site constraints or Uniform Fire Code requirements.
- Store containers in a designated area, which is covered, bermed or diked, paved and impervious in order to contain leaks and spills. The secondary containment shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.
- For liquid wastes, surround the containers with a dike as illustrated in Figure 2.10. The dike must be of sufficient height to provide a volume of either 10 percent of the total enclosed container volume or 110 percent of the volume contained in the largest container, whichever is greater, or, if a single container, 110 percent of the volume of that container.
- Where material is temporarily stored in drums, a containment system can be used as illustrated, in lieu of the above system.
- Place containers mounted for direct removal of a liquid chemical for use by employees inside a containment area as described above. Use a drip pan during liquid transfer.

Structural Source Control BMPs for Storage of Liquids in Permanent Above-ground Tanks:

- Locate permanent tanks in impervious (Portland cement concrete or equivalent) secondary containment surrounded by dike or UL Approved double-walled. The dike must be of sufficient height to provide a containment volume of either 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank, whichever is greater, or, if a single tank, 110 percent of the volume of that tank.
- Slope the secondary containment to drain to a dead-end sump (optional), or equivalent, for the collection of small spills.
- Include a tank overfill protection system to minimize the risk of spillage during loading.

Structural Source Control BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products:

- Store in a building or paved and bermed covered area (include berm if needed)
- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material.
- Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of uncontaminated stormwater and to collect and convey runoff to treatment. Slope the paved area in a manner that minimizes the contact between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.

- For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and at any catch basins as needed to prevent erosion and discharge of the stockpiled material offsite or to a storm drain. Ensure that contaminated stormwater is not discharged directly to catch basins without conveying through a treatment BMP.

Structural Source Control BMPs for Wood Treatment Areas:

- Cover and/or enclose, and contain with impervious surfaces, all wood treatment areas. Slope and drain areas around dip tanks, spray booths, retorts, and any other process equipment in a manner that allows return of treatment chemicals to the wood treatment process.
- Cover storage areas for freshly treated wood to prevent contact of treated wood products with stormwater. Segregate clean stormwater from process water. Ensure that all process water is conveyed to an approved treatment system.
- Seal any holes or cracks in the asphalt areas that are subject to wood treatment chemical contamination.
- Elevate stored, treated wood products to prevent contact with stormwater run-on and runoff
- Place dipped lumber over the dip tank, or on an inclined ramp for a minimum of 30 minutes to allow excess chemical to drip back to the dip tank.
- Place treated lumber either from dip tanks or retorts in a covered paved storage area for at least 24 hours before placement in outside storage. Use a longer storage period during cold weather unless the temporary storage building is heated. The wood shall be drip free and surface dry before it is moved outside.

Mandatory Treatment BMPs required by condition S3. of the Industrial Stormwater General Permit:

- Employ oil/water separators, booms, skimmers or other methods to eliminate or minimize oil and grease contamination of stormwater discharges.
- Obtain Ecology approval before beginning construction/installation of all treatment BMPs that include the addition of chemicals to provide treatment.

Condition S3. of the Industrial Stormwater General Permit requires Treatment BMPs listed as “applicable” in Ecology’s SWMMs, or other guidance documents as mandatory:

Mandatory Treatment BMPs From Ecology’s Stormwater Management Manual for Western Washington:

Treatment BMPs for Commercial Composting:

- Convey all leachate from composting operations to a sanitary sewer, holding tank, or on-site treatment systems designed to treat the leachate and TSS.
- Ponds used to collect, store, or treat leachate and other contaminated waters associated with the composting process must be lined to prevent ground water contamination. Apply “AKART” or All Known Available and Reasonable Methods of Prevention and Treatment to all pond liners, regardless of the construction materials.

Treatment BMPs for Log Sorting and Handling:

Required Treatment BMPs are presented in detail in Ecology's Guidance Document: "Industrial Stormwater General Permit Implementation Manual for Log Yards."

Treatment BMPs for Maintenance and Repair of Vehicles and Equipment:

- Contaminated stormwater runoff from vehicle staging and maintenance areas must be conveyed to a sanitary sewer, if allowed by the local sewer authority, or to an API or CP oil and water separator followed by a basic treatment BMP, applicable filter, or other equivalent oil treatment system.

Treatment BMPs for Parking and Storage of Vehicles and Equipment:

- An oil removal system such as an API or CP oil and water separator, catch basin filter, or equivalent BMP, approved by the local jurisdiction, is applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site.

A high-use site is:

- Subject to an expected average daily vehicle traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area: or
- Is subject to storage of a fleet of 25 or more diesel vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).

Treatment BMPs for Railroad Yards:

- In areas subjected to leaks/spills of oils or other chemicals convey the contaminated stormwater to appropriate treatment such as a sanitary sewer, if approved by the appropriate sewer authority, or, to a CP or API oil/water separator for floating oils, or other treatment, as approved by the local jurisdiction.

Treatment BMPs for Recyclers and Scrap Yards:

For facilities subject to Ecology's Industrial Stormwater General Permit refer to BMP Guidance Document "Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities," for selection of BMPs. The BMPs in that guidance document can also be applied to scrap material recycling facilities depending on the pollutant sources existing at those facilities and to non-permitted facilities.

Treatment BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers:

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local Sewer Authority, or to appropriate treatment such as an API or CP oil/water separator, catch basin filter or other appropriate system (see Volume V). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked

liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.

- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

Treatment BMPs for Storage of Liquids in Permanent Above-ground Tanks:

- If the tank containment area is uncovered, equip the outlet from the spill-containment sump with a shutoff valve, which is normally closed and may be opened, manually or automatically, only to convey contaminated stormwater to approved treatment or disposal, or to convey uncontaminated stormwater to a storm drain. Evidence of contamination can include the presence of visible sheen, color, or turbidity in the runoff, or existing or historical operational problems at the facility. Simple pH measurements with litmus or pH paper can be used for areas subject to acid or alkaline contamination.
- At petroleum tank farms, convey stormwater contaminated with floating oil or debris in the contained area through an API or CP-type oil/water separator or other approved treatment prior to discharge to storm drain or surface water.

Treatment BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products:

- Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

Mandatory Erosion and Sediment Control BMPs required by condition S3. of the Industrial Stormwater General Permit:

- Sediment control BMPs such as detention or retention ponds or traps, vegetated filter strips, bioswales, or other permanent sediment control BMPs to minimize sediment loads in stormwater discharges.
- Filtration BMPs to remove solids from catch basins, sumps or other stormwater collection and conveyance system components (filter socks, modular canisters, sand filtration, centrifugal separators, etc.).

Mandatory BMPs for Deicing and Anti-Icing Operations - Airports and Streets from Ecology's Stormwater Management Manual for Western Washington:

BMPs for Aircraft:

- Conduct aircraft deicing or anti-icing applications in impervious containment areas. Collect aircraft deicer or anti-icer spent chemicals, such as glycol, draining from aircraft in deicing or anti-icing application areas and convey to a sanitary sewer, treatment, or other approved disposal or recovery method. Divert deicing runoff from paved gate areas to appropriate collection areas or conveyances for proper treatment or disposal.

- Do not allow spent deicer or anti-icer chemicals or stormwater contaminated with aircraft deicer or anti-icer chemicals to be discharged from application areas including gate areas, to surface water, or ground water, directly or indirectly.
- Transfer deicing and anti-icing chemicals on an impervious containment pad, or equivalent spill/leak containment area, and store in secondary containment areas. (See Storage of Liquids in Above-Ground Tanks).

BMPs for Airport Runways/Taxiways:

- Avoid excessive application of all de/anti-icing chemicals, which could contaminate stormwater.
- Store and transfer de/anti-icing materials on an impervious containment pad or an equivalent containment area and/or under cover in accordance with BMP Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products in this volume. Other material storage and transfer approaches may be considered if it can be demonstrated that stormwater will not be contaminated with or that the de/anti-icer material cannot reach surface or ground waters.

BMPs for Streets/Highways:

- Select de and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities.
- Where feasible and practicable use roadway deicers, such as calcium magnesium acetate, potassium acetate, or similar materials, that cause less adverse environmental impact than urea, and sodium chloride.
- Store and transfer de/anti-icing materials on an impervious containment pad in accordance with BMP Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products in this volume.
- Sweep/clean up accumulated de/anti-icing materials and grit from roads as soon as possible after the road surface clears.

Appendix F. Industrial Stormwater Monthly Inspection Report

Industrial Stormwater Monthly Inspection Report

Inspections must be conducted by a person with the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit. Retain a copy of the completed and signed form in accordance with Permit Condition S9.C.

FACILITY NAME:	INSPECTION TIME:	DATE:		
WEATHER INFORMATION: <ul style="list-style-type: none"> Description of Weather Conditions (e.g., sunny, cloudy, raining, snowing, etc.): _____ Was stormwater (e.g., runoff from rain or snowmelt) flowing at outfalls and/or discharge areas shown on the Site Map during the inspection: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Comments: _____ 				
I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
SWPPP and Site Map: Have a copy of the SWPPP and site map with you during the inspection so that you can ensure they are current and accurate. Use it as an aide in recording the location of any issues you identify during the inspection. <ul style="list-style-type: none"> Is the Site Map current and accurate? Is the SWPPP inventory of activities, materials and products current? Any new potential pollutant sources must be added to the map and reflected in the <i>SWPPP Facility Assessment & Tables 2, 2A, 3 and 5.</i>	Yes	No	Findings and Remedial Action Documentation: Describe any findings below and the schedule for remedial action completion including the date initiated and date completed or expected to be completed.	
Vehicle/Equipment Areas: <i>Equipment cleaning: Check NA if not performed on-site. Skip section.</i> Is equipment washed and/or cleaned only in designated areas? <ul style="list-style-type: none"> Observe washing: Is all wash water captured and properly disposed of? <i>Equipment fueling: Check NA if not performed on-site. Skip section.</i> <ul style="list-style-type: none"> Are all fueling areas free of contaminant buildup and evidence of chronic leaks/spills? Are all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater? Are structures in place to prevent precipitation from accumulating in containment areas? <ul style="list-style-type: none"> If not, is there any water or other fluids accumulated within the containment area? Note: If containment areas are not covered to prevent water from accumulating, the SWPPP must include a plan describing how accumulated water will be managed and disposed of. 	Yes	No	NA	Findings and Remedial Action Documentation:

<p>Equipment maintenance:</p> <ul style="list-style-type: none"> • Are maintenance tools, equipment and materials stored under shelter, elevated and covered? • Are all drums and containers of fluids stored with proper cover and containment? • Are exteriors of containers kept outside free of deposits? • Are any vehicles and/or equipment leaking fluids? Identify leaking equipment. • Is there evidence of leaks or spills since last inspection? Identify and address. • Are materials, equipment, and activities located so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)? <p>Add any additional site-specific BMPs:</p> <hr/> <hr/> <hr/> <hr/> <hr/>	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>
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I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
<p>Good Housekeeping BMPs:</p> <p>1. Are paved surfaces free of accumulated dust/sediment and debris?</p> <ul style="list-style-type: none"> • Date of last quarterly vacuum/sweep _____ • Are there areas of erosion or sediment/dust sources that discharge to storm drains? <p>2. Are all waste receptacles located outdoors:</p> <ul style="list-style-type: none"> • In good condition? • Not leaking contaminants? • Closed when is not being accessed? • External surfaces and area free of excessive contaminant buildup? <p>3. Are the following areas free of accumulated dust/sediment, debris, contaminants, and/or spills/leaks of fluids?</p> <ul style="list-style-type: none"> • External dock areas • Pallet, bin, and drum storage areas • Maintenance shop(s) • Equipment staging areas (loaders, tractors, trailers, forklifts, etc) • Around bag-house(s) • Around bone yards • Other areas of industrial activity: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>

Spill Response and Equipment: Are spill kits available, in the following locations? <ul style="list-style-type: none"> • Fueling stations • Transfer and mobile fueling units • Vehicle and equipment maintenance areas Do the spill kits contain all the permit required items? <ul style="list-style-type: none"> • Oil absorbents capable of absorbing 15 gallons of fuel. • A storm drain plug or cover kit. • A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity. • A non-metallic shovel. • Two five-gallon buckets with lids. Are contaminated absorbent materials properly disposed of?	Yes	No	NA	Findings and Remedial Action Documentation:
I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
General Material Storage Areas: <ul style="list-style-type: none"> • Are damaged materials stored inside a building or another type of storm resistance shelter? • Are all uncontained material piles stored in a manner that does not allow discharge of impacted stormwater? • Are scrap metal bins covered? • Are outdoor containers covered? 	Yes	No	NA	Findings and Remedial Action Documentation:
Stormwater BMPs and Treatment Structures: Visually inspect all stormwater BMPs and treatment structures devices, discharge areas infiltration and outfalls shown on the Site Map. <ul style="list-style-type: none"> • Are BMPs and treatment structures in good repair and operational? • Are BMPs and treatment structures free from debris buildup that may impair function? • The permit requires Permittees to clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe. Based on this, do catch basins need to be cleaned? • Are berms, curbing or other methods used to divert and direct discharges adequate and in good condition? 	Yes	No	NA	Findings and Remedial Action Documentation:
Observation of Stormwater Discharges: <ul style="list-style-type: none"> • Is the discharge free of floating materials, visible oil sheen, discoloration, turbidity, odor, foam or any other signs of contamination? • Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater and is not allowed to comeingle with stormwater or enter storm drains. Is process water comingling with stormwater or entering storm drains? • Illicit discharges include domestic wastewater, noncontact cooling water, or process wastewater (including leachate). Were any illicit discharges observed during the inspection? 	Yes	No	NA	Findings and Remedial Action Documentation:

II. CORRECTIVE ACTION AND SWPPP MODIFICATIONS DESCRIPTIONS: Additional space to describe inspection findings and corrective actions if needed. Provide brief explanation of the general location and the rationale for the additional or different BMPs.

[illegible]

III. CERTIFICATION STATEMENTS AND SIGNATURES:

Inspector - Certification: This section must be completed by the person who conducted the site inspection prior to submitting this form to the person with signature authority (see Permit Condition G2) or a duly authorized representative of that person.

- ☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.
- ☐ *The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.*

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."

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Inspector's Name – Printed

Inspector's Signature

Inspector's Title

Date _____

Permittee – Certification:

- ☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.
- ☐ *The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.*

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

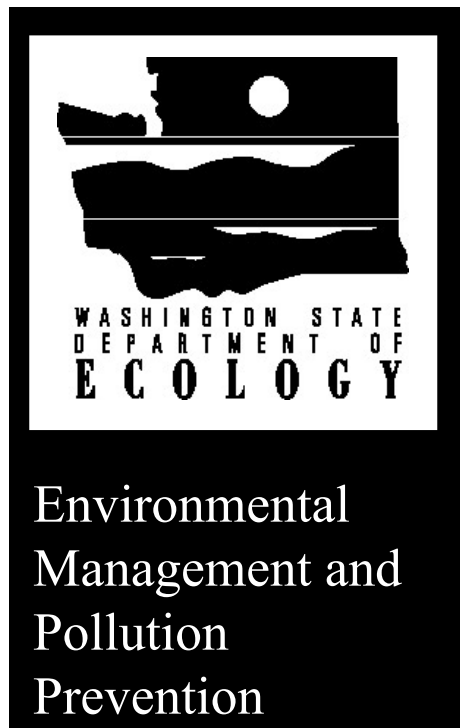
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PRINTED NAME of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**¹

SIGNATURE of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**¹

DATE _____

¹A person is duly authorized representative only if 1) the authorization is made in writing by a person described in Permit Condition G2.A and submitted to Ecology, and 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated *facility*, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.



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A Guide for Lithographic Printers



*October, 2001
Publication 94-139R*

Appendix F.

The Department of Ecology thanks the Snap Shots printers and photo processors workgroup participants shown below, for their commitment of time, energy and expertise to this campaign.

Byer Industries, Inc.

Franklin County Public Works Department

Inland Technology, Inc.

Hallmark Refining Corporation

Island County Solid Waste Department

Kodak

Lewis County Public Health Department

**Local Hazardous Waste Management Program in King
County**

Pacific Northwest Screen Printing Association

Pacific Printing and Imaging Association

Photo Marketing Association International

Photo Establishment

Print NW - Six Sigma

Qualex

Sun Sportswear

Thurston County Environmental Health Department

WHY SHOULD LITHOGRAPHIC PRINTERS PAY ATTENTION TO THEIR WASTE

● ● ● ● ● ●

If you're a lithographic printer looking for practical environmental management and pollution prevention information, this booklet is for you. Lithographic printers across the state regularly generate wastes that are of concern to the environment. Film developing, press runs and cleanup operations in your shop generate wastes such as used fixer, waste ink, ink cleanup sludges and shop towels, not to mention a steady stream of air emissions from press washes and fountain solutions. These wastes may pose solid waste, hazardous waste, water quality or air quality concerns. Silver has a very high aquatic toxicity and accumulates in the tissue of aquatic organisms. Because of concerns with silver, used fixer is a state and federal hazardous waste. Many local sewer authorities have strict silver discharge limits. With thousands of businesses in Washington State generating used fixer, it's important that each one do their part to manage these wastes correctly and keep them out of the soils and waters of the state. So you play an important role. Used fixer and other hazardous wastes don't belong on the ground, untreated down the drain, or in the dumpster. Good waste management practices are important for the following reasons:

- You'll ensure that you're in compliance with federal, state and local waste management regulations and avoid costly penalties.
- You'll provide a safer, healthier workplace for your employees.
- You'll be joining other lithographic printers in Washington State who are taking pride in maintaining a clean and healthy environment.
- You'll gain customers who know they have made a wise choice in selecting a business that helps protect the environment.

The Department of Ecology (Ecology) is divided into various programs, each with a different environmental emphasis. Ecology is trying to do a better job of linking the requirements of all these programs together in a meaningful way. This helps businesses such as lithographic printers understand their overall responsibility in meeting Ecology's requirements, rather than learning about them one program at a time. This is commonly called a "multi-media" approach.

Below is a brief description of how key Ecology programs affect lithographic printers.

HAZARDOUS WASTE AND TOXICS REDUCTION

Lithographic printers concern Ecology's Hazardous Waste and Toxics Reduction Program mainly because used fixer and some waste inks, ink cleanup sludges and fountain solutions sludges are hazardous wastes. Some developers, if they contain more than one percent hydroquinone as an ingredient and are discarded before used, may also be a hazardous waste. Businesses that generate more than 220 lbs. of such hazardous wastes per month (or ever accumulate more than 2,200 lbs. on site) are Regulated Generators and need to get a RCRA ID number from the state (see page 28). Shops that generate less than 220 lbs. are Small Quantity Generators and fall under the jurisdiction of local government (city or county) moderate risk programs (see local government insert).

SOLID WASTE AND FINANCIAL ASSISTANCE

Ecology's Solid Waste and Financial Assistance Program provides statewide guidance and technical assistance to local governments developing and implementing moderate risk management programs for Small Quantity Generators. Solid Waste also provides assistance to businesses concerned with pollution prevention of non-hazardous solid wastes, such as scrap film and paper

WATER QUALITY

Lithographic printers are a concern for Ecology's Water Quality Program because improper disposal of solvents, inks and film developing chemicals can have adverse impacts on the state's groundwater, surface waters and sediments. Such chemicals can affect the proper operation of municipal sewage treatment plants. Water Quality hopes that through education about proper waste management, businesses will minimize the amount of wastes sent to the sanitary sewer and discharge those wastes necessary in accordance with local sewer limits. More centralized treatment and recovery of used fixer waste is one way to do this.

AIR QUALITY

Lithographic printers affect air quality in Washington State mainly because volatile organic compounds (VOCs) evaporate into the air. VOCs come from clean up solvents, fountain solutions, aerosol cans and inks. Inhaling VOCs introduces toxic chemicals into the body. VOCs are one of the ingredients that form smog.

Some VOCs are listed as hazardous air pollutants (HAPs). Sources of HAPs are now beginning to be identified, registered, and in some cases issued permits. When building or expanding, any business that emits pollutants to the air is required to check with their area's Local Air Authority to determine if a "New Source Review" permit applies to them.

Businesses that choose to minimize the use of traditional "hot" solvents and change to products that contain less volatiles and HAPs are moving in the same direction as federal, state, and local air authority regulations. They also are "good neighbors", with fewer odor complaint problems with neighboring businesses and the public.

POLLUTION PREVENTION: REDUCE & RECYCLE YOUR WASTE



Environmental management is a growing concern for businesses. Whether it's a concern about disposal costs, filling our landfills, resource depletion, air pollution, or even your business image, environmental management issues are receiving more and more attention. That's where pollution prevention fits in.

In the world of waste, the greatest economic and environmental benefits usually come from avoiding the generation of waste in the first place. This is known as **waste reduction** and it's the number one waste management priority in Washington State. Some examples of simple waste reduction techniques include writing on both sides of a piece of paper, using a durable rather than a disposable product, or just not purchasing a product at all if you really don't need it.

It may not be as hard as you think. A good place to start is to walk through your shop and review all the processes which use chemicals or generate solid, liquid or air wastes.

When you begin to look at the wastes generated by your business, you may feel overwhelmed by how much there is to do. To reduce frustration, make incremental changes. Begin in areas where waste reduction and recycling are easiest, then build up to the more complicated items. Even small changes can make a large difference. As you consider each process, ask yourself if you can change the process in some way so that it doesn't produce a waste or if you can lower the toxicity of the products you use.

Identifying materials that your business can recycle is another great way to reduce the amount of waste your business disposes of. **Recycling** is the state's second waste management priority. Recycling is good because it takes materials that might have once been thrown away and makes them available to be

used again. Although recycling is much better than disposing of materials, it is less beneficial than waste reduction because it requires a lot of energy to collect and remanufacture the materials into new products. In addition, for recycling to be successful, products made with recycled materials must be purchased by consumers.

The chart that follows includes most of the wastes you may generate in your lithographic printing business. To find out more specific information about regulatory compliance, recycling options and alternative chemical products, see the do's and don'ts section beginning on page 7.

LITHOGRAPHIC PRINTING WASTE STREAMS OF CONCERN

Waste Stream of Concern	Program of Concern	Environmental Concern
Aerosol Cans	Hazardous Waste Air Quality	"Listed" chemicals (see page 28) High VOCs
Developer	Hazardous Waste Water Quality	Hydroquinone
Fixer	Hazardous Waste Water Quality	High silver
Fountain Solution	Hazardous Waste Air Quality	Ethylene glycol High VOCs
Ink Cleanup Sludges	Hazardous Waste	Heavy metals "Listed" chemicals
Ink/Ink Skins	Hazardous Waste	Heavy metals
Paper Waste	Solid Waste	Recyclable
Parts Washer Solvent	Hazardous Waste	"Listed" chemicals
Plates	Solid Waste	Recyclable
Plate Developing and	Water Quality	Cyanide
Activators	Hazardous Waste	Silver
Press Washes	Air Quality	High VOCs
Scrap Film	Solid Waste	Recyclable
Shop Towels	Hazardous Waste Air Quality	Improper disposal of inks and solvents
Wash Water	Water Quality	Silver

PRACTICAL DO'S & DON'TS

Below are some common wastes generated by lithographers, along with do's and don'ts for implementing better pollution prevention and staying in compliance with Ecology regulations. To find out more about how and why Ecology regulates businesses in the areas of hazardous waste, solid waste, water quality and air quality, see the discussion on page 3.

While many of the do's and don'ts are suggestions that may help save you money and lead toward regulatory compliance, some do's and don'ts are federal or state regulatory requirements. These will be highlighted in italics to distinguish them. Businesses should always check with their local (city or county) government agencies to see if they have additional or more stringent regulatory requirements (see government contacts insert).

AEROSOL CANS

Printers use spray cans for various reasons including film cleaning and ink anti-skinning. Many of these spray cans may contain hazardous chemicals, such as 1-1-1-trichloroethylene or toluene. A list of chemicals that are always hazardous after being used for cleaning can be found on page 34. While an empty can may be put in the garbage, aerosol cans containing "listed" chemicals are considered a hazardous waste if they are thrown away before they are empty.

DO'S

- ✓ Switch to non-aerosol products if possible, such as manual pump cans or bottles especially if they can be refilled.
- ✓ Decide if you actually need these products. If so, limit their use and look for aerosol cans that do not contain listed chemicals.
- ✓ Return defective cans to your supplier.

DON'TS

- ✗ Don't buy aerosols containing "listed" compounds. Work with your vendor to find alternatives.
- ✗ *Don't throw non-empty cans hazardous waste aerosol cans into the garbage.*

DEVELOPER

Developers change the silver halide into metallic silver. Most developers for black and white film contain a small percentage of hydroquinone. These developers, if disposed as an unused product, will be hazardous due to hydroquinone levels. However, hydroquinone is consumed during use and does not show up in used developer in concentrations that would be considered hazardous waste.

DO'S

- ✓ If possible, purchase developer solutions that contain less than one percent hydroquinone — check with your supplier or look on your Material Safety Data Sheet (see page 33).
- ✓ Check with your local sewer utility to make sure it will accept used developer in the sanitary sewer.
- ✓ Make sure your employees know that unused developer may be a hazardous waste.

DON'TS

- ✗ *Don't ever put developer into a septic system, storm drain or dry well or onto the ground.*
- ✗ *Don't dispose of unused or past shelf life developer to the sanitary sewer unless you have permission from your local sewer utility.*
- ✗ Don't put developer into used fixer when using CRCs (see page 23.) Developer can plug CRCs, causing a dangerous pressure build up.

FIXER AND BLEACH-FIXER SOLUTION

Fixing sets the image areas and removes the light sensitive silver halides that could cause the photo image to darken with time. Fixer allows silver to dissolve out of the film and paper into the solution. As a result, used fixer, contains up to 4,000 parts per million of silver. Because of these high silver levels, used fixer is a hazardous waste.

Lithographic printers typically generate small volumes of used fixer. See the discussion of on-site versus off-site management beginning on page 20.

FIXER (CON'T)

DO'S

- ✓ Investigate whether on-site recovery or off-site management is the best option for you (see page 18).
- ✓ If you're doing on-site silver recovery, assure compliance with hazardous waste and sewer discharge limits by routinely testing your effluent through a lab accredited for silver analysis (see Testing, page 33).
- ✓ If you're doing on-site silver recovery, get approval from your local sewer authority to discharge the remaining effluent.
- ✓ If you're doing on-site silver recovery, properly operate and maintain your equipment.
- ✓ Make sure your employees know that used fixer is a hazardous waste.
- ✓ Count the amount of used fixer generated during the month toward your hazardous waste total (see page 28).
- ✓ Attach labels to your used fixer containers, identifying them as hazardous waste.

DON'TS

- ✗ *Don't put used fixer into the sanitary sewer unless it meets hazardous waste and sewer discharge limits.*
- ✗ *Don't ever put used fixer into a septic system, storm drain, the ground, surface water or any other drain not connected to a sanitary sewer.*

FOUNTAIN SOLUTIONS

Although fountain solution is composed mainly of water, some chemicals that are added to increase wetting ability can create health and environmental problems. The most common additive, isopropyl alcohol, is a volatile organic compound (VOC). VOCs are highly evaporative compounds that can cause health problems such as lung irritation. Some fountain solutions contain alternatives to alcohol that are lower in VOC's. Certain alternatives to alcohol, such as ethylene glycol at greater than 10 percent concentration, could make fountain solution a hazardous waste if used or dirty solution needs to be disposed. Drain disposal of chemicals **may** be allowed if they do not designate as hazardous waste.

DO's

- ✓ Consider changing to an alcohol free fountain solution. Look for alcohol substitutes that are not hazardous waste when disposed. Ask your vendors or printing association for suggestions.
- ✓ If you continue to use alcohol in your fountain solution, try to reduce the amount that you use. The Federal government may recommend five percent alcohol as a maximum amount.
- ✓ Consider using a recirculating chiller unit that keeps fountain solution clean and reduces evaporation.
- ✓ Check pH for consistency in each fountain solution batch — some printers have found a pH of around 4 to 5 to be effective in maintaining print quality.

DON'TS

- ✗ *Don't dispose of waste fountain solution that contains hazardous chemicals (such as ethylene glycol) at hazardous levels down the drain. Manage it as a hazardous waste.*
- ✗ *Don't ever put fountain solution into a septic system, storm drain, dry well or onto the ground.*
- ✗ *Don't give up. If you are going to try a low or non-alcohol fountain solution, you may need to experiment to find the right product or formulation. If one doesn't work, try another one. Keep with it until you find one that satisfies you.*

INK AND INK SKINS

Lithographic inks have three primary components: pigments which give color, solids which give body, and solvents which are the liquid portion of the ink. Two of these components, pigments and solvents, may make an ink a hazardous waste when it's disposed. Inks, other than black, may use heavy metals such as lead, chromium, silver, cadmium, and barium to achieve their color. These metals can be harmful to the environment. Because of this, waste inks that contain heavy metals could be hazardous wastes.

Solvents commonly found in inks, such as petroleum distillates, can also make inks hazardous and contribute to air pollution by emitting volatile organic compounds (VOCs). The solvent portion of the ink is not hazardous when vegetable oils, such as soy, linseed or canola oil are used. Vegetable based inks also send little or no VOCs into the air, and, unlike petroleum oils, are renewable resources.

Whether a specific ink is hazardous waste depends on the amount and type of heavy metals, solvents and other hazardous chemicals it contains. Check your Material Safety Data Sheet (MSDS) to help make a determination — see page 33 for more information on MSDSs.

DO's

- ✓ Consider switching from a petroleum oil-based ink to a vegetable oil-based ink such as soy or linseed oil.
- ✓ If using colored inks, ask your vendor for inks that contain little or no heavy metals. Ask if your vendor can re-blend waste inks.
- ✓ Buy only as much ink as needed for the near future. Use older inks first to maintain your inventory.

DON'TS

- ✗ *Don't put inks that are hazardous in the garbage. If the ink is hazardous, handle and dispose of it as hazardous waste.*
- ✗ *Don't put excess ink onto shop towels or into the shop towel container as a convenient method of ink disposal.*

INK AND INK SKINS (CON'T)

- ✓ When storing cans of ink that have been opened, cover the ink surface with waxed paper, lids or other covers to reduce skinning and to maintain ink quality.
- ✓ Non-hazardous inks that have become dried out and solidified can be put into the garbage, with permission from your local landfill.

INK CLEANUP SLUDGES

Ink cleanup sludges come from press cleaning operations. Even if the ink itself is not hazardous, if it comes in contact with a press wash that is, then the whole waste mixture could be a hazardous waste.

DO'S

- ✓ Try to find and use press washes without hazardous "listed" solvents. Look on page 28 for "listed" chemicals that could make a press wash a hazardous waste.

DON'TS

- ✗ *Don't dispose of ink cleanup sludges in the garbage or down the drain. These sludges may be a hazardous waste.*
- ✗ *Don't set your ink cleanup trays out to evaporate. This pollutes the air. Put ink cleanup sludges into a container with a lid on it. Keep the container covered when not in use.*

PAPER WASTE

Paper waste is often the largest volume of waste generated by a printer. Paper waste from "makeready" and from cutting and trimming operations can be a significant portion of the total waste stream. Steps can be taken to reuse, reduce and recycle the waste paper that is generated. Scrap paper is recyclable in many areas of Washington State. The recyclability of paper is based on many factors, such as the paper value or grade, the volume that is generated by individual shops and geographic regions.

DO'S

- ✓ Use both sides of your makeready paper to cut the amount used in half. Some printers save even more by using makeready paper after both sides have been printed. A clean sheet of paper is inserted every 10th sheet or so. The clean sheet is used to check print quality while the other sheets serve to keep the press running.
- ✓ Recycle your waste paper. This saves landfill space and may save you money in disposal costs. Call 1-800-RECYCLE.
- ✓ Complete the paper recycling loop by purchasing paper with recycled content. Look for the highest pre/post consumer recycled content and the lowest bond weight that your printing requirements allow.
- ✓ Encourage customers to avoid bright colored paper, which is more difficult to recycle and therefore has less value.

DON'TS

- ✗ Don't put waste paper in the garbage if you can find a recycling program that will accept it.

PARTS WASHER SOLVENT

Some printers use part washer solvent tanks for cleaning parts and tools. Solvents used include mineral spirits, Stoddard solvent, petroleum naphtha, and xylene, and they typically become hazardous wastes when they can no longer be used. These used solvents are hazardous because they are ignitable and/or toxic. Evaporation of these solvents also creates VOCs.

DO'S

- ✓ Install a filter on your solvent sink to greatly increase the life of the solvent. (Remember to dispose of the used filter as a hazardous waste.)
- ✓ Use less hazardous solvents in your parts washer.
- ✓ Consider purchasing your own solvent still and recycling your solvent on-site. (The sludges, filters, and still bottoms generated from on-site solvent recycling are typically hazardous and will still need to be managed as a hazardous waste when they're disposed).
- ✓ Make sure solvent is actually too dirty to use before it is exchanged for new solvent.

DON'TS

- ✗ *Don't dispose of spent hazardous solvents to drains, the air, or the ground.*
- ✗ *Don't evaporate solvents as a means of disposal.*
- ✗ Don't mix solvents with any other waste and keep different types of solvents in separate, labeled, closed containers.

PLATES

Many types of lithographic plates can be recycled. Aluminum, polyester, and paper plates are all potentially recyclable. Reclaim the metal in aluminum plates by returning them to the manufacturer or arranging for plate pick-up with a local salvage company. Polyester plates used in the "silver master" process contain small amounts of silver on them and can be recycled for their silver value. Electrostatic paper plates can be recycled with paper waste.

DO'S

- ✓ Use two-sided plates—some aluminum plates can be exposed and developed on both sides, which reduces the number of plates used.
- ✓ Recycle plates.

DON'TS

- ✗ Don't throw away plates that can be recycled.

PLATE DEVELOPING SOLUTIONS

In the past, plate developers were solvent based and potentially hazardous. Some also had a high enough pH to make them a hazardous waste. Today, water-based or aqueous plate developing solutions contain little or no solvent. These developers are plate specific, so changing developers also means changing to aqueous plates, but the change can yield many advantages including increased quality and durability, shorter exposure times, and decreased fogging. Aqueous plates also cost about the same as solvent-based plates, require no procedural changes and since less chemicals are used in the developer, the developers are generally less expensive. Activator solutions for "silver master" plates will contain some silver, but not enough to be a hazardous waste. During development, electrostatic plates are often treated with a cyanide solution. This solution is considered hazardous.

DO'S

- ✓ *Manage cyanide developing solutions from electrostatic plates as a hazardous waste.*

DON'TS

- ✗ *Don't dump cyanide developing solutions from electrostatic plates down the drain. Manage it as a hazardous waste.*

PLATE DEVELOPING SOLUTIONS (CON'T)

- ✓ If you haven't done so already, switch to aqueous plates. These plates use aqueous developers that are usually 80 to 90 percent water which makes them less likely to be considered hazardous.
- ✗ Don't put activator solutions from "silver master" or paper plates into CRCs. The solutions will stop the cartridges from working properly.

PRESS WASHES

Volatile organic compounds (VOCs) are highly evaporative compounds that can cause health problems such as lung and nervous system irritation, and contribute to the formation of smog. Press washes have a very high VOC content, typically ranging from 80 to 100 percent VOC. Vapor pressure determines how much of the VOCs evaporate into the air. The lower the vapor pressure, the less evaporation. In one study, almost half of the blanket wash purchased by a company was wasted since it evaporated before it made it from the shop towel to the press! Lower VOC products may actually save money since not as much is lost through evaporation. Several states and local governments have begun to set vapor pressure limits for press washes. Press washes may also contain chemicals that could cause them to be a hazardous waste when disposed. A list of chemicals that may make press washes hazardous when disposed can be found on page 34.

DO'S

- ✓ Work with your vendor to find the lowest VOC press wash that still works for you.
- ✓ Consider using press washes that don't contain chemicals which are typically hazardous waste when disposed.

DON'TS

- ✗ Don't saturate shop towels with too much press wash. Use the minimum amount needed to do the job. Excessive use increases the amount of wash that needs to be bought and results in increased air pollution.

PRESS WASHES (CON'T)

- ✓ Consider ideas that conserve press wash, such as dedicating a press to just one color on specific days. Since colors are not changed between press runs, the number of press cleanings are reduced. This saves time, the amount of press wash used, and ink.
- ✗ Don't give up. If you're going to try a low VOC press wash, some experimenting may be involved to find the right one. If one doesn't work, try another. Keep with it until you find one that works for you.

SCRAP FILM

Processed or unprocessed black and white film will have some silver on it, but data indicate that the silver will not leach out of a landfill over time. However, soaking scrap film in fixer to remove silver will leave a coating of leachable silver that may make the film scraps hazardous.

DO'S

- ✓ Look for a recycling company that will collect your scrap film.
- ✓ If you do on-site silver recovery, ask your silver recovery equipment supplier if they will take your scrap film.

DON'TS

- ✗ Don't soak scrap film in used fixer to remove silver. This will leave a coating of leachable fixer that may make the scrap film a hazardous waste.

SHOP TOWELS

Some solvents and inks are hazardous waste when thrown away. Because of this, shop towels are often hazardous waste when they are contaminated with these solvents and inks. If your towels are handled according to the do's and don'ts below, you do not have to determine if the towels are hazardous and they do not need to be counted as a hazardous waste.

DO'S

- ✓ *Keep waste shop towels in a closed, fireproof container marked "CONTAMINATED SHOP TOWELS ONLY".*
- ✓ Use cloth towels which can be cleaned and reused.
- ✓ When possible, use less hazardous cleaning solvents (ones without chlorinated compounds).
- ✓ Check with the local sewer district near the laundry service you use to see if the laundry is meeting local sewer discharge limits.
- ✓ Squeeze excess solvent out of used towels. Collect and reuse the liquid for initial cleanup, followed by clean solvent for final cleanup.
- ✓ If you use disposable towels with hazardous solvents, dispose of them as hazardous waste.

DON'TS

- ✗ *Don't dispose of waste solvents, ink or fountain solutions by pouring or placing them into containers of used shop towels or individual shop towels.*
- ✗ Don't throw dirty towels into your dumpster.
- ✗ Don't saturate towels with solvent.
- ✗ Don't saturate towels with ink.
- ✗ Try not to use disposable paper towels or rags.

WASH WATERS

Wash waters used in the film developing process may contain small amounts of film developing chemicals, including used fixer. Typically, these chemicals are found in very small amounts so that wash waters isn't a hazardous waste. However, in areas with very low sewer discharge limits for silver, even wash waters can present a concern.

DO'S

- ✓ Routinely test the silver levels in your wash water to ensure compliance with silver discharge limits.

DON'TS

- ✗ Don't dispose of wash water to the sanitary sewer until find out what your local silver discharge limit is.

MANAGING USED FIXER

Lithographic printers generate used fixer as a normal part of doing business. Used fixer from film developing contains up to 4,000 parts per million (ppm) silver. This number greatly exceeds state and federal hazardous waste limits for silver (set at five ppm) and various local water quality discharge limits (see page 26). Used fixer should never be discharged to the sanitary sewer without proper silver recovery, either at your place of business or through off-site management. And it should never be put into storm drains, septic systems or dry wells.

ON-SITE OR OFF-SITE?

Managing used fixer is unique because silver has value. Whether you choose on-site treatment, off-site treatment or a combination of both for this waste stream, the choice is yours — and it's an important one. While a business generating large volumes of used fixer (such as photo processors) may recover the costs of their on-site recovery system in a matter of months, smaller volume producers like printers will take longer to see a similar payoff. It is important to remember that whichever strategy you choose, your business must meet hazardous waste and local sewer discharge limits for used fixer. Some lithographic printers are already trying to reclaim their used fixer using on-site technologies. These businesses should consider this option carefully. Historically, on-site silver recovery has focused on economics rather than meeting hazardous waste and sewer discharge limits. On-site silver recovery designed to meet such limits is not as simple as plugging in a machine and walking away — it takes a lot of time, effort and trial and error to do it right, and even then may not meet some of the stricter local sewer discharge limits. This booklet contains guidance to help you do a better job if you choose to do on-site recovery.

OFF-SITE MANAGEMENT OPTIONS

Off-site management of used fixer has certain advantages over on-site recovery. Capital, operation and maintenance costs for equipment are non-existent. Administrative costs, such as analytical monitoring, are not incurred. If a business has space limitations, the off-site option may help ease crowding. Most importantly, having your used fixer managed off-site will ensure that hazardous waste and local silver discharge limits for silver will not be violated

at your facility.

The downside to off-site management may be in putting your hazardous waste into the hands of a third party. In addition, off-site hauling may create more air pollution due to increased trucking and transport of wastes. If you choose an off-site option, carefully choose the company — you still have ultimate responsibility for the proper management of your wastes.

WASTE MANAGEMENT COMPANIES

Consider using a waste management company to pick up your used fixer, or ask your chemical supplier if they have a program (or will start a program) that will supply you with new chemicals as they pick up and reclaim your used fixer solutions.

The pick up fees charged by many silver recovery and waste management facilities range from \$50-\$100 per service visit. While some will only pick up used fixer others will manage other waste streams as well, so shop around. Many facilities will allow spent used fixer to be dropped off free of charge but prior arrangements should be made. Other facilities will accept shipments of used fixer through common carriers, such as UPS. (Do not send fixer through the U.S. mail.) Shipping small amounts of used fixer is allowed under Ecology and Department of Transportation rules. The cost of shipping a five gallon carboy from Seattle to Spokane ranges from \$12-\$63. These prices include pickup at your business. The common carriers should be contacted directly for the most accurate pricing information.

RECLAMATION AT ANOTHER BUSINESS

In many communities, photo shops with proper on-site silver recovery systems will accept reasonable amounts of used fixer from other small businesses at no charge. This may be the easiest, most economical option for the management of smaller amounts of used fixer. This option is available for businesses that generate a total of less than 220 lbs of hazardous waste per month, including used fixer (220 lbs is approximately 26 gallons). Neither Ecology nor the Department of Transportation have regulatory requirements for the transport of such Small Quantity Generator (SQG) volumes of used fixer to other busi-

nesses. Also check with your local government moderate risk waste program for similar reclamation services they might provide (see government contacts insert).

Businesses using this option should request a receipt for wastes accepted. Businesses receiving used fixer from Small Quantity Generators need to ensure that these wastes are legitimately recycled and that hazardous waste and local sewer discharge limits are being met. Those businesses receiving used fixer from Regulated Generators must follow the hazardous waste requirements outlined on page 28. Businesses receiving used fixer from other businesses do not need to count these wastes toward their own monthly hazardous waste total.

ON-SITE RECOVERY OPTIONS

There are several different types of equipment that fall under the broad heading of silver recovery units. The most common units found in lithographic printing shops are electrolytic recovery units and metallic replacement or chemical recovery cartridges. While other technologies exist (such as chemical precipitation and ionic exchange) these technologies are complicated or expensive given the small volumes of fixer generated by most printers.

METALLIC REPLACEMENT OR CHEMICAL RECOVERY CARTRIDGES (CRCs)

CRCs are hollow canisters that contain steel fibers or fiberglass impregnated with iron filings. Used fixer is run through the cartridge. When the iron contacts a solution containing dissolved silver, the iron is dissolved and the silver comes out of the solution. CRCs can be used by themselves or after an electrolytic recovery unit.

Using two CRCs in series, in conjunction with other recommended management practices, can reduce silver concentrations to about one ppm — but this takes time and effort and may be achievable only under ideal circumstances. Even with proper care, two CRCs may not be able to meet the sewer discharge limits adopted by many municipalities (see page 26). Costs for printers setting up two CRCs in series range from \$200 to \$1,700. Operating, changeover and silver testing costs on a three to six month changeover schedule range from

\$150 to \$300 annually.

If you are currently using CRCs or a combination of electrolytic recovery and CRCs for on-site reclamation, the following management practices will help bring you closer toward meeting hazardous waste and sewer discharge limits. These recommendations are not guaranteed to automatically bring a business in compliance — each business will need to monitor its progress to see if hazardous waste and sewer discharge limits are being met.

MAINTAINING AND OPERATING CRCs

- At a minimum, businesses choosing to use CRCs for on-site recovery need to use two in series unless they can document through routine testing that they consistently meet hazardous waste and local water quality discharge limits using just one. One canister, even of high quality, will show diminishing returns after being used a few times and will eventually stop working. An electrolytic recovery unit by itself will not meet hazardous waste or sewer discharge limits. If you are using an electrolytic recovery unit, you should also use two CRCs.
- Have a sample valve installed between canisters. Use this valve to take samples of the effluent from the first canister. Using silver test papers, check the sample to see when the first canister is spent. Silver test paper can detect silver at levels between 200 and 500 parts per million (ppm). When your first canister reaches this level, it is time to rotate it out, putting your second canister first in line and adding a new, second canister. In addition, if your tubing between canisters is clear plastic, you can visually inspect the solution flowing through — if it is brown or has debris in it, this is a good sign that the working ability of the first canister is spent.
- Monitor the flow of used solutions into the canisters. If the flow is too fast, the proper reaction won't happen inside the canister and you won't meet silver discharge limits. If it is too slow, it may deteriorate the canister too soon. Use a metered pump system or a restricted gravity feed system and keep flow rates at manufacturers' recommendations, usually between one and three gallons per hour.

- Test your outflow. If you are doing on-site silver recovery, take periodic samples of recovered used fixer over the life span of a canister and have the wastes analyzed for silver to see if it meets hazardous waste and sewer discharge limits. Keep a file with all test data in it — you'll have a starting point from which to make refinements to your on-site process. See the Testing section on page 32.
- Keep a maintenance/changeover log. Perform regular maintenance as recommended in the manufacturer's instruction manual. Work closely with your supplier for help in developing a changeover schedule based on your volumes of used fixer solutions. Ask your supplier if they provide a full service waste management arrangement.
- If you're using electrolytic recovery before CRCs, monitor/adjust the pH (see page 33) of the used fixer before it enters the CRCs. Using simple pH testing papers as an indicator, keep the pH of used fixer entering CRCs between 5.5 and 6.5, which is the optimum range for pulling out the most silver and lengthening the life of the canisters. Look for units that have a sample valve in the tubing entering the canisters where a small sample can be periodically taken. Record pH monitoring levels and occurrences in your maintenance/changeover log.
- Fill CRCs with water before initially putting them into service. This will extend the life of canisters by preventing the steel wool from dissolving as they fill with fixer.

ELECTROLYTIC RECOVERY UNITS

An electrolytic recovery unit works by attracting positively charged silver ions to a negatively charged cathode that is immersed in used fixer. Electrolytic recovery units remove the majority of easily recoverable silver in a nearly pure metallic state. This purity translates into lower refining and shipping costs than other silver recovery methods. An advantage of a properly functioning electrolytic recovery unit is that the solutions processed can be reused, given proper attention to pH levels. A disadvantage is that it can only reduce silver concentrations down to a range of 100 to 300 ppm. Without further reclamation, your effluent will not meet hazardous waste or sewer discharge limits. An average unit costs around \$2500.

SOME MANAGEMENT PRACTICES FOR ELECTROLYTIC RECOVERY UNITS

- For printers generating less than 25 gallons of fixer per month, the costs outweigh the benefits of using electrolytic recovery. Such printers choosing to do on-site recovery will find using just 2 CRCs in series meets their needs.
- For optimum silver recovery efficiency, solutions entering an electrolytic recovery unit should have a pH between 7.5 - 8.0. Since the normal pH of used fixer solutions ranges from about 5.5 to around 7, pH adjustment is generally necessary. (See pH, page 33.)
- Do not put bleach into electrolytic units.

WATER QUALITY REQUIREMENTS

STRICT LOCAL SEWER DISCHARGE LIMITS

As the chart below shows, some sewer districts in the state have set their own local silver discharge limits for businesses in order to help the sewage treatment plant meet its own discharge levels for silver. In many locations, sewer discharge levels are so low that businesses using on-site silver recovery technologies such as electrolytic recovery and CRCs will have difficulty meeting these levels. Similar low limits are continuing to be developed in other areas of the state. Businesses located in areas with strict current or future local sewer limits may have no choice but to explore off-site options.

Municipality	Silver Limit (ppm)	Delegated?
Aberdeen	0.2	No
Chehalis	0.2	No
Clark County	0.1	No
Everett	0.69	Yes
Federal Way	0.5	No
Kalama	0.1	No
Lynnwood	0.5	Yes
Olympia (LOTT)	0.2	Yes
Pierce County	0.2	Yes
Richland	0.2	Yes
King County (Metro)	3.0	Yes
Spokane	0.43	Yes
Tacoma	0.2	Yes
Vancouver	0.1	Yes

All businesses conducting on-site silver reclamation should contact their local sewer utility for more information about local limits. See the Water Quality contacts in the government contacts insert.

DELEGATED AND NON-DELEGATED SEWER UTILITIES

Some sewer utilities, such as those noted above, are known as “delegated” pretreatment programs. This means that the Ecology has granted regulatory authority to these local entities to pass local ordinances, issue their own discharge permits and run their own programs. Non-delegated sewer utilities are still under the management authority of Ecology’s Water Quality program, and sewer discharge permits for businesses are issued by the appropriate Ecology regional office.

HAZARDOUS WASTE REQUIREMENTS FOR LITHOGRAPHIC PRINTERS

STEP 1 IDENTIFY YOUR WASTE AND GENERATOR STATUS

Lithographic printers generate hazardous used fixer which is hazardous waste, as well as other wastes that may be hazardous, including waste inks, ink cleanup sludges, film developer solutions and fountain solution wastes. Businesses need to “count” these wastes toward a monthly hazardous waste total. If your total monthly amount of hazardous waste totals over 220 pounds (about 26 gallons) and this count includes more than just used fixer, you are a Regulated Generator required to meet compliance Steps 2-11 below. If you are over 220 lbs. but only generate used fixer (i.e. no ink cleanup sludges or other hazardous wastes) and you recycle the fixer, you are a Regulated Generator that needs to comply with Steps 2, 3, 8, 9 and 10 below. You are a Small Quantity Generator if you always generate less than 220 pounds of hazardous waste per month or batch and always dispose of the waste before you accumulate more than 2,200 pounds. Small Quantity Generators are required to comply only with Steps 1, 8 (and 3 if you already have an active RCRA ID number).

STEP 2 OBTAIN A GENERATOR ID NUMBER

If you are a regulated generator, you are required to notify Ecology of your hazardous waste activities and obtain a site-specific RCRA ID number using Ecology’s Form 2. Call (360) 407-6737 or your nearest Ecology regional office.

STEP 3 REPORT ANNUALLY

If you have an active RCRA ID number, you must submit an annual report (Ecology’s Annual Report Form) by March 1 of each year, even if you have not generated waste in that year. Record your hazardous waste activities for the previous calendar year on this report, including how much waste you’ve generated or accumulated on-site and waste you’ve sent off-site. Ecology conducts annual workshops for businesses seeking assistance in completing their annual reports. Call (360) 407-6170 to request an annual report form.

STEP 4 PERFORM PREVENTIVE MAINTENANCE

Hazardous wastes must be handled in a manner that prevents leaks, spills, fires and explosions. Develop and follow a written inspection schedule for all hazardous waste storage areas, containers and tanks and include all emergency, safety and monitoring equipment on site.

Keep the necessary emergency equipment (such as fire extinguishers and telephones) on hand and accessible to employees. You must regularly test and maintain all your emergency equipment. Notify police, fire departments and local hospital of the characteristics of hazardous wastes generated at your site, as well as the facility layout and access routes.

STEP 5 PROPERLY ACCUMULATE HAZARDOUS WASTE

Lithographic printers typically generate less than 2,200 lbs. per month. If so, they can accumulate their hazardous waste on site for up to 180 days from the date it is first generated before they must manage it on-site or send it to an appropriate facility. If you generate more than 2,200 lbs per month, you can only accumulate the waste for up to 90 days.

While accumulating wastes, you must follow certain requirements:

- Establish and clearly mark an accumulation area. If constructed after September 30, 1986, it must have a containment system able to hold spills and leaks.
- Place the waste in an appropriate container and mark it with the words “Hazardous Waste”, the waste’s major risk (such as “Ignitable”), and the date you first put waste in the container.

STEP 6 PLAN FOR EMERGENCIES

There must be an emergency coordinator on the premises or on call at all times who is familiar with the operations and activities at the site and has the authority to commit the resources necessary to deal with a hazardous waste emergency. In a small shop, this will probably be the owner or manager. Make sure you train your employees to know how to react to different types of emergencies in your shop.

STEP 7 USE PROPER CONTAINERS

Many hazardous waste incidents and work related injuries are linked to improper or unsafe container management. To avoid such accidents:

- Accumulate your wastes in containers which are sturdy, leak-proof, properly labeled, and kept closed unless waste is being added or removed. Use your empty product containers as convenient waste accumulation containers.
- Don't accumulate incompatible wastes in the same containers or areas.
- Store reactive and ignitable wastes according to the uniform fire code.
- Maintain a minimum aisle space of 30 inches between container rows.
- Inspect containers at least once a week, keeping a log of inspections.

STEP 8 ENSURE PROPER TRANSPORTATION AND DISPOSAL

Regulated Generators must hire a transporter that has a RCRA ID number and ensure that wastes are handled at a permitted hazardous waste facility or a facility that legitimately recycles and reclaims hazardous waste. Small Quantity Generators can transport their own wastes or make sure they are sent to a permitted facility, a legitimate recycler, or the sanitary sewer (with written authorization only).

STEP 9 MANIFEST SHIPMENTS OF HAZARDOUS WASTE

To ship hazardous wastes off site, Regulated Generators must prepare a Uniform Hazardous Waste Manifest Form which identifies the contents of the shipment, the transport company used and the facility receiving the wastes. This form accompanies the waste from the site where it is generated to its ultimate resting place and then back to you for your records. If you are a Regulated Generator, your waste hauler needs to use a manifest and not just issue a bill of lading or receipt.

STEP 10 DON'T SPECULATIVELY ACCUMULATE

If you are a Regulated Generator and you accumulate used fixer for more than 180 days, you need to document that you are not speculatively accumulating this material. Speculative accumulation means collecting something without value with the hope that it may one day have value. You would need to keep records showing the volume of these materials stored at the beginning of the year, the amount of these materials generated or received during the calendar year, the amount of materials remaining at the end of the calendar year, and be able to show that you recycled, or transported elsewhere for recycling, 75 percent of that year's used fixer.

STEP 11 KEEP RECORDS

There are a number of records that Regulated Generators must prepare and keep on the premises for at least five years, including annual reports and manifest forms. Keep copies of notification reports (Form 2), inspection records, results from waste analyses or tests, and on-site recycling records for as long as you are in business. Small Quantity Generators should also keep records of their hazardous waste management activities.

IMPORTANT TOPICS

TESTING

Businesses discharging reclaimed used fixer are responsible for knowing if they meet hazardous waste and sewer discharge limits. Sending a sample of a waste to a laboratory for analysis is the most accurate way to determine if the waste is hazardous or meets sewer discharge limits — and it's relatively inexpensive.

For analyzing concentrations of metals, a total metals test is used to determine compliance with local sewer discharge limits. This test checks for total amount of a metal in a waste. For used fixer, a total metals test can be used for determining sewer discharge and hazardous waste levels. Other wastes, such as waste inks and cleanup sludges, may need different tests (such as ignitability). Talk to testing labs about which tests are best for your wastes. If you're using CRCs, regular testing over the life span of a canister may indicate if your maintenance schedule may be extended, saving you the cost of an additional unit. Once you have established a track record of consistent compliance, you can use those test results and changeover schedules as an indicator of future compliance with regulatory levels. For example, if you test your used fixer over time and find that it meets hazardous waste and sewer discharge limits, you may use this information for future disposal of reclaimed used fixer.

MATERIAL DATA SAFETY SHEETS (MSDSs)

A material safety data sheet (MSDS) should come with each of the chemical products you purchase from a manufacturer or vendor. As a business, you are required to keep MSDSs for all products available to employees. This is a WISHA requirement. MSDSs have a reputation for being long, too technical and difficult to read. Although this may be true, the ability to scan through an MSDS and pick out the following information is important. MSDSs are valuable because they describe:

- physical and chemical properties of the hazardous substances contained in the product,
- spill cleanup instructions,
- health hazards and appropriate first aid,
- fire and explosion hazards, and
- proper management and disposal practices.

Not all MSDSs are formatted the same, but they are all required to contain certain information. If you want additional information about a chemical product, contact the manufacturer using the phone number provided on the MSDS.

pH

pH is the measure of how acidic or alkaline a solution is, with neutral solutions rating a 7, acidic solutions less than 7, and alkaline solutions greater than 7. Lithographic printers who choose to use electrolytic recovery units to recover silver from used fixer solutions may wish to adjust the pH of these solutions to between 7.5 and 8.0 before use in electrolytic recovery units. If CRCs are used following an electrolytic recovery unit, pH can be adjusted back down to 5.5. Sodium hydroxide is commonly used to adjust solutions upward, while glacial acetic acid is used to adjust solutions downward. Both of these chemicals are hazardous themselves, so employers should carefully weigh the risks to the responsibilities of employees handling such chemicals with the benefits derived from pH adjustment. Check with your service company, vendor, product manufacturer or analytical lab for help in making pH adjustments.

"F-LISTED" CHEMICALS

If your cleaning solvents contain, before use, 10% or more of any one or combination of the chemicals shown below, they are hazardous when disposed. These F-listed wastes are hazardous because of their high flammability, persistence or toxicity. (The "F" comes from the federal waste code that describes such wastes.) Look at your MSDSs to find these chemicals and work with your vendors to find safer alternatives.

acetone	cresols and cresylic acid
benzene	n-butyl alcohol
carbon tetrachloride	2-nitropropane
carbon disulphide	ortho-dichlorobenzene
chlorinated fluorocarbons	pyridine
chlorobenzene	etrochloroethylene
cyclohexanone	toluene
2-ethoxyethanol	trichloroethylene
ethyl ether	1,1,1-trichloroethane
isobutanol	1,1,2-trichloroethane
methanol	1,1,2-trichloro-1,2,2-trifluoroethane
metylene chloride	trichlorofluoromethane
methyl ethyl ketone (MEK)	xylene
methyl isobutyl ketone (MIBK)	ethyl acetate
ethyl benzene	nitrobenzene

FOR MORE INFORMATION

ARE YOU CONNECTED TO THE INTERNET ?

You can find information about businesses that can help you properly manage your wastes on the Internet at <http://www.ecy.wa.gov/apps/hwtr/hwsd/default.htm>, the Hazardous Waste Services Directory.

The first screen lists the services available to hazardous waste generators. Select which type of waste management service is needed, then click on the "Search" button. This generates a listing of all the companies that offer this service. Select a firm, then click on "Details" to get more information. Although the directory is updated routinely to keep the information current and useful, these listings do not constitute a recommendation, and the Department of Ecology does not assume any liability for the accuracy or completeness of the information in the directory.

DO YOU PREFER PAPER COPIES OF THIS INFORMATION?

If so, or if you have any questions or comments about the on-line Hazardous Waste Services Directory, e-mail Dave Zink at dzin461@ecy.wa.gov or call (360) 407-6752.

PLAY IT SAFE!

Before you agree to let a company handle your waste, ask for, and check, the company's references. The following questions might be useful in assessing the management practices of a business you are considering:

- ✓ How do you manage the waste you collect or analyze?
- ✓ Do you reduce or recycle waste before disposal? Do you contract out for such services, and if so, to whom?
- ✓ How do you train your employees? Do they have a basic understanding of regulations/liabilities pertaining to my waste stream?
- ✓ Are you insured? In some cases it may be appropriate to ask for an RCRA identification number?
- ✓ Do you or your affiliate companies have any current, recent (3-5 years) or pending enforcement actions or fines with state, federal or local authorities? (Call your nearest Ecology regional office to verify.)

As part of the Department of Ecology's "Snap Shots" campaign, environmental education efforts are being geared toward photo processors, screen printers, lithographic printers and the medical/dental community.

The immediate goals of this effort are 1) to encourage pollution prevention as the first step toward better environmental management on the shop level and 2) to educate the printing and film developing industry on applicable federal, state and local government environmental requirements and options available to meet those requirements.

Long term goals include evaluating our success at improving overall environmental compliance and pollution prevention habits of the industry.

If overall regulatory compliance is not improved significantly during this educational phase, Ecology may take additional actions to encourage compliance, including developing a general state sewer discharge permit for the film developing industry.

While this booklet summarizes some of Ecology's hazardous waste, solid waste, water quality and air quality requirements, it does not replace the regulations themselves. Always refer directly to the regulations for more detail or ask to speak to a hazardous waste, solid waste, water quality or air quality specialist at your nearest Ecology regional office.

Ecology is an Equal Opportunity and Affirmative Action Employer. If you have special accommodation needs, please contact the Hazardous Waste and Toxics Reduction Program at (360) 407-6743 (Voice) or (360) 407-6006 (TDD).

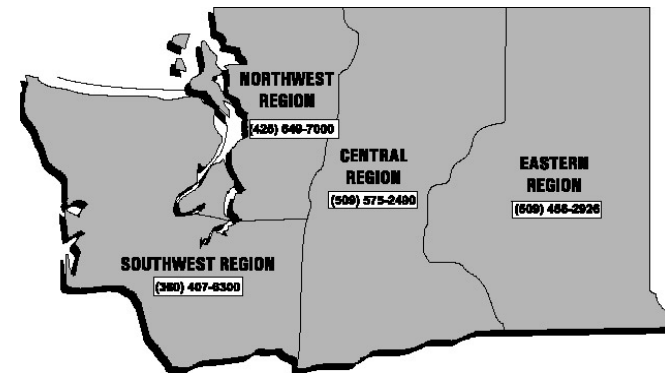
Department of Ecology Regional Offices

● ● ● ● ● ●
Eastern Regional Office
North 4601 Monroe, Suite 202
Spokane, WA 99205-1295

Central Regional Office
106 South Sixth Avenue
Yakima, WA 98902-3387

Southwest Regional Office
5751 Sixth Avenue SE
Post Office Box 47775
Olympia, WA 98504-4775

Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008



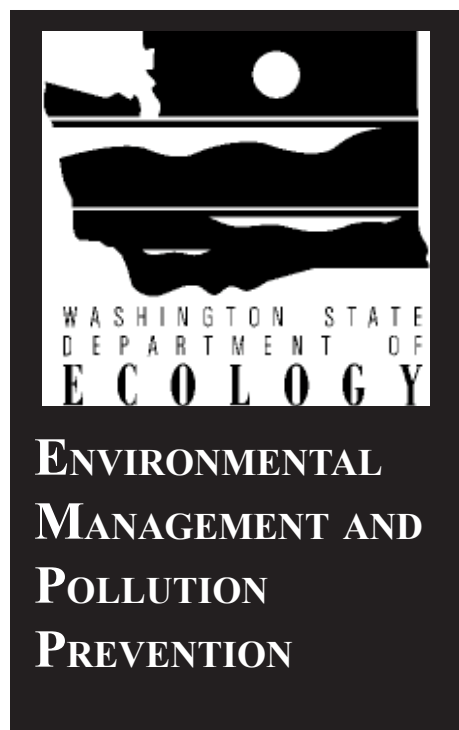
For questions relating to pollution prevention, you can call 1-800-RECYCLE. General information is available on equipment, service and process changes that can help you reduce and recycle your wastes.

You can also get help for specific pollution prevention problems in your facility by calling your nearest Ecology regional office and asking for a toxics reduction specialist.

For additional information and assistance on regulatory concerns from hazardous wastes, solid waste, water quality or air quality, contact the nearest Ecology regional office and ask for the appropriate program specialist.

The first printing of this booklet was printed on 100% post-consumer recycled paper, on a waterless and alcohol free press, using 100% vegetable-based inks. The booklet size is most efficient for minimizing paper waste during cutting.

Subsequent reproductions of this booklet have been photocopied on recycled paper, using electronic originals for continued conservation of natural resources.



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Appendix F.

A Guide for Photo Processors



January 2005
Publication 94-138R

DEPARTMENT OF ECOLOGY REGIONAL OFFICES

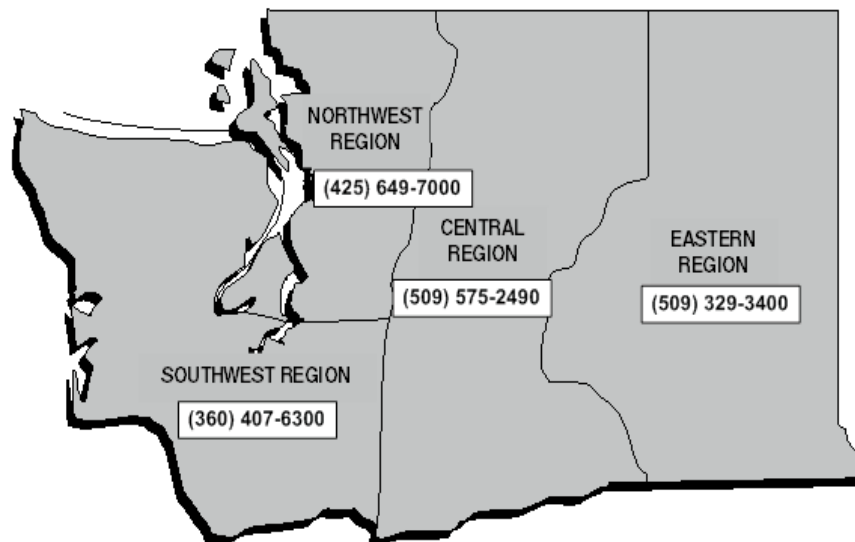


Eastern Regional Office
North 4601 Monroe
Spokane, WA 99205-1295

Central Regional Office
15 Yakima Ave #200
Yakima, WA 98902-3452

Southwest Regional Office
300 Desmond Drive
Post Office Box 47775
Olympia, WA 98504-4775

Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452



For questions relating to pollution prevention or additional information and assistance on regulatory concerns from hazardous wastes, solid waste, water quality or air quality, contact the nearest Ecology regional office.

If you need this information in an alternate format, please call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. If you are a person with a speech or hearing impairment, call 711, or 800-833-6388 for TTY.

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WHY SHOULD PHOTO PROCESSORS PAY ATTENTION TO THEIR WASTES?



If you're a photo processor looking for practical environmental management and pollution prevention information, this booklet is for you.

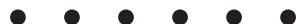
Photo processors across the state regularly generate wastes that are of concern to the environment. Silver found in used fixer, bleach-fixers, washless stabilizer and C-41RA bleach poses dangerous waste and water quality concerns.

Silver has a very high aquatic toxicity and accumulates in the tissue of aquatic organisms. Used photo processing solutions containing more than five parts per million (ppm) silver are a state and federal dangerous waste. Many local sewer authorities have even more stringent silver limits. With thousands of businesses in Washington State generating silver-bearing wastes, it's important that each one do their part to manage these wastes correctly and keep them out of the soils and waters of the state.

So you play an important role. Silver-bearing and other dangerous wastes don't belong on the ground, untreated down the drain, or in the dumpster. Good waste management practices can help you:

- save money through less waste.
- ensure that you stay in compliance with environmental regulations and avoid penalties and litigation.
- provide a safer, healthier workplace for your employees.
- Contribute to a cleaner, healthier environment.
- gain customers who know they have made a wise choice in selecting a business that helps protect the environment.

YOUR BUSINESS AND ECOLOGY REGULATIONS



The Department of Ecology (Ecology) is divided into various programs, each with a different environmental emphasis. Ecology is trying to link the requirements of all the programs together in a more meaningful way helping businesses such as photo processors understand their overall responsibility in meeting Ecology's requirements. This is commonly called a "multimedia" approach. Below is a brief description of how key Ecology programs affect photo processors.

HAZARDOUS WASTE AND TOXICS REDUCTION PROGRAM

Photo processors concern Ecology's Hazardous Waste and Toxics Reduction Program because fixers, bleach-fixers, and washless stabilizers accumulate silver during use and become dangerous wastes. Some developers, if they contain more than one percent hydroquinone as an ingredient and are discarded before used, may also be a dangerous waste. Minilab system cleaners may contain hazardous levels of chromium or fail pH limits. Businesses that generate more than 220 pounds of such dangerous wastes per month (or ever accumulate more than 2,200 pounds on-site) are regulated generators and need to get a RCRA ID number from the state (see page 28). Shops that generate less than 220 pounds are Small Quantity Generators and fall under the jurisdiction of local government (city or county) moderate risk waste programs and need to comply with fewer dangerous waste regulations.

SOLID WASTE AND FINANCIAL ASSISTANCE PROGRAM

Ecology's Solid Waste and Financial Assistance Program provides statewide guidance and technical assistance to local governments developing and implementing moderate risk waste management programs for Small Quantity Generators.

WATER QUALITY PROGRAM

Photo processors are a concern for Ecology's Water Quality Program because improper disposal of photo processing chemicals can have adverse impacts on the state's groundwater, surface waters and sediments. Such chemicals can also affect the proper operation of municipal sewage treatment plants and contaminate biosolids.

Ecology's Water Quality Program hopes that through education about proper waste management, businesses will minimize the amount of wastes sent to the sanitary sewer and discharge any unavoidable wastes in accordance with local sewer limits. Centralized treatment and recovery of silver-bearing waste is one way to do this.

AIR QUALITY PROGRAM

Photo processors usually have few air pollution problems. However, odors and emissions, when located close to the public and other businesses (like in a mall or office building with common walls), can bring complaints to the local air authority, and an inspector to your door. So be a good neighbor. It makes good business and environmental sense.

POLLUTION PREVENTION: REDUCE AND RECYCLE YOUR WASTES



Environmental management is a growing concern for businesses. Whether it's about disposal costs, filling up our landfills, resource depletion, air pollution, or your business image, environmental management issues are receiving more and more attention. That's where pollution prevention fits in.

In the world of waste, the greatest economic and environmental benefits usually come from avoiding the generation of waste in the first place. This is known as waste reduction and it's the number one waste management priority in Washington State. Examples of simple waste reduction techniques include using both sides of paper, using durable products instead of disposable ones, or simply not purchasing a product unless it's really needed.

It may not be as hard as you think! A good place to start is to walk through your shop and review all the processes which use chemicals or generate solid, liquid or air wastes. Look for ways to reduce waste.

When you begin to look at the wastes generated by your business, you may feel overwhelmed by how much there is to do. Begin by making small changes. Start in areas where waste reduction and recycling are easy, and build up to the more complicated items. Even small changes can make a big difference. As each process is considered, try to think of ways to reduce or eliminate waste or the toxicity.

Identifying materials that your business can reuse or recycle is another great way to reduce the amount of disposable waste in your business. Recycling takes materials that might have been thrown away and makes them available to be reused. For example, silver recovery systems bind up silver that would have been sent to the sewer and allows the silver to be recycled.

Recycling material is much better than disposing materials, but it is less beneficial than waste reduction because it requires a lot of energy to collect and remanufacture the materials into new products. In addition, for recycling to be successful, products made with recycled material must be purchased by consumers.

The chart below includes most of the wastes that may be generated in your photo processing business.

Photo Processing Waste Streams of Concern		
Waste Streams of Concern	Program of Concern	Environmental Concern
Developer	Hazardous Waste Water Quality	Hydroquinone
Fixer, Bleach fixer	Hazardous Waste Water Quality	High silver content
Washless Stabilizer	Hazardous Waste Water Quality	High silver content
System Cleaners	Hazardous Waste Water Quality	High chromium or pH
Plastic Film Containers	Solid Waste	Non-hazardous, reusable or recyclable
Scrap Film and Paper	Solid Waste	Non-hazardous, recyclable
Steel Film Magazines	Solid Waste	Non-hazardous, recyclable
Wash Water	Water Quality	Silver

To find out more specific information about regulatory compliance, recycling options and alternative chemical products, see *Practical Do's and Don'ts* on page 10.

PRACTICAL DO'S AND DON'TS



Below are some common wastes generated by photo processors, along with some do's and don'ts for implementing better pollution prevention and staying in compliance with Ecology regulations.

Some of these do's and don'ts are simple suggestions that may help save you money and lead you to regulatory compliance. Others are federal or state regulatory requirements (*printed in Italics to distinguish them*). Businesses should always check with their local government agencies (city or county) to see if there are additional or more stringent regulatory requirements as well.

BLEACH SOLUTION

The bleach bath converts metallic silver on film back to a silver halide through an oxidation reaction. An iron solution is commonly used to accomplish this. Used C-41 RA bleach may contain up to three parts per million (ppm) silver.

Do's

- ✓ If you only use chemical recovery cartridges (CRCs) for on-site silver recovery, consider mixing used C-41 RA bleach and washless stabilizer with the used fixer prior to recovery.
- ✓ Ensure you have sewer service if you are considering on-site treatment.
- ✓ Consider regenerating your used bleach solutions. Ask your chemical supplier.

Don'ts

- ✗ *Don't ever put bleach, treated or not, into a septic system, storm drain, dry well, or onto the ground.*

Do's

- ✓ If you send silver-bearing chemicals off-site for recovery, ask your service company if they accept C-41 RA for pick up.
- ✓ Make sure your employees know that used C-41 RA bleach may be a local sewer discharge concern.

DEVELOPER

Most developers for black and white film contain a small percentage of hydroquinone. These developers, if disposed as an **unused** product will be dangerous due to hydroquinone levels. However, hydroquinone does not show up in **used** developer in concentrations that are considered dangerous waste because it is consumed during use.

Do's

- ✓ Consider using low replenishment developers for film and paper. They can substantially reduce replenishment rates.
- ✓ If possible, purchase developer solutions that contain less than one percent hydroquinone—check with your supplier or look on your Material Safety Data Sheet.
- ✓ Check with your local sewer provider to make sure it will accept used developer in the sanitary sewer.
- ✓ Make sure your employees know that unused developer may be a hazardous waste.

Don'ts

- ✗ *Don't ever put used or unused developer into a septic system, storm drain, dry well, or onto the ground.*
- ✗ *Don't dispose of unused or past shelf life developer to the sanitary sewer.*
- ✗ *Don't put developer into silver-bearing wastes when using CRCs. Developer can plug the cartridges causing a dangerous pressure buildup.*

FIXER AND BLEACH-FIXER SOLUTION

Fixer allows silver to dissolve out of the film and paper into the solution. As a result, used fixer and bleach-fixers contain high concentrations of silver, usually between 3,000 and 8,000 ppm. Because of these high silver levels, used fixer is a dangerous waste.

Large processors typically generate high enough volumes of silver-bearing waste to make on-site recovery a realistic option. However, photo processors should investigate the pro's and con's of both off-site and on-site management. For most small photo processors, Ecology recommends off-site management. See the discussion of off-site versus on-site management beginning on page 19.

Do's

- ✓ Investigate whether on-site recovery or off-site management is the best option for you.
- ✓ Consider using low replenishment bleach-fixers. It can substantially reduce replenishment rates.
- ✓ If you're recovering silver on-site, assure compliance with dangerous waste and sewer discharge limits by routinely testing your effluent through a lab accredited for silver analysis (see Testing, page 31).
- ✓ If you're recovering silver on-site, get approval from your local sewer authority to discharge the remaining effluent.
- ✓ If you're recovering silver on-site, properly operate and maintain your equipment.

Don'ts

- ✗ *Don't put used fixer into the sanitary sewer unless it meets dangerous waste regulations and sewer discharge limits.*
- ✗ *Don't ever put used fixer into a septic system, storm drain, the ground, surface water or any other drain not connected to a sanitary sewer.*
- ✗ If your used fixer or bleach-fixers is hard-piped to an on-site treatment system, don't count it towards your monthly dangerous waste total.

Do's

- ✓ Make sure your employees know that used fixer and bleach-fixers are dangerous wastes.
- ✓ Count the amount of used fixer and bleach-fixers generated during the month toward your dangerous waste total if accumulated or stored prior to recycling.
- ✓ Attach labels to silver-bearing waste containers, identifying them as dangerous waste.

PAPER CORES

Kodak, Konica, and Agfa will take fiber cores from rolls of photographic paper and color paper plastic core plugs. Each manufacturer will accept these only from their own brands of paper.

Do's

- ✓ Use available paper core recycling programs and encourage other film manufacturers to begin their own recycling program.

Don'ts

- ✗ Don't consider paper cores a dangerous waste. If a recycling option is not available, they can be put in the garbage.

PHOTOGRAPHIC SOLUTION FILTERS

Film and paper developing machines contain filters that remove particulates from processing solutions. These are made out of spun cotton similar to cotton swabs. Fixer and washless stabilizer filters probably leach enough silver to be considered dangerous, so these filters should not be put in the garbage unless a business can show that they don't fail the leachability test for silver (Testing, page 31).

Do's

- ✓ Drain excess fluid from filters into the appropriate photo chemical waste container.

Don'ts

- ✗ *Don't put filters containing silver-bearing wastes into the garbage.*

Do's

- ✓ Collect drained filters and ask your silver waste hauler to take them for refining.

PLASTIC FILM CONTAINERS

Photo processors often have a surplus of these containers. Most plastic film containers are made of two different kinds of plastic and both are recyclable. Kodak and Agfa accept containers of all brands through their solid waste recycling program. You'll be responsible for shipping costs, but this can be weighed against the cost of throwing them away.

Do's

- ✓ Use Kodak's or Agfa's plastic container recycling programs.
- ✓ Encourage other film manufacturers to begin a recycling program.
- ✓ Offer the containers to customers for home use, such as sewing kits or fishing tackle.

Don'ts

- ✗ Don't consider plastic film containers dangerous waste. If you cannot find a way to recycle them, they can be put in the garbage.

SCRAP FILM AND PAPER

In color photo finishing, all of the silver is removed from the film or paper during the photo finishing process. Because of this, processed scrap film and paper do not designate as a dangerous waste and can be treated as solid waste. Unprocessed film or paper will have some silver on it, but data indicate that silver in this form will not leach out of a landfill over time. However, soaking film ends in fixer to remove silver will leave a coating of leachable fixer that may make the film ends dangerous waste.

Do's

- ✓ Look for a recycling company that will collect your unprocessed film ends.
- ✓ If you recover silver on-site, ask your silver recovery equipment supplier if they will take your scrap film.

Don'ts

- ✗ Don't soak film ends in used fixer to remove silver; it will leave a coating of leachable fixer that may make the film ends a dangerous waste.

SINGLE USE CAMERAS

Most single use cameras can be returned to the manufacturer for recycling and in some cases for reuse. Fuji, Konica, and Kodak will reimburse photo labs for shipment plus \$.05 per camera. Most often there is a minimum number of cameras required to receive reimbursements. Agfa will accept all brands—no presorting is required, however, no reimbursement is offered.

Do's

- ✓ Use existing camera recycling programs.

Don'ts

- ✗ Except for Agfa, don't send brand name cameras to anyone other than the original manufacturer.
- ✗ Don't throw cameras away after film has been extracted for processing.

STABILIZER

Washless stabilizer solutions are used in the last step of the photo finishing process. Stabilizers enhance image stability and stop the reaction started by the developing solution. Washless stabilizers typically contain silver in the range of 100 to 300 ppm, making them a dangerous waste and exceeding local sewer discharge limits.

Do's

- ✓ Check with your local sewer utility to make sure it is okay to discharge treated stabilizer to the sanitary sewer.
- ✓ If you recover silver on-site, mix used washless stabilizer with your used fixer and bleach-fixers prior to recovery.
- ✓ If you send silver-bearing chemicals off-site for recovery, ask your service if they will accept washless stabilizer for pick up.
- ✓ Make sure your employees know that washless stabilizer is a dangerous waste.

Don'ts

- ✗ *Don't ever put stabilizer into a septic system, storm drain, dry well or onto the ground.*
- ✗ *Don't put untreated washless stabilizer into the sanitary sewer—you will be in violation of dangerous waste and sewer discharge limits.*
- ✗ *Don't count the amount of washless stabilizer during the month toward your dangerous waste total if recycled on-site without first being accumulated or stored (e.g., hard-piped).*

STEEL FILM MAGAZINES

Steel film magazines have many parts including the magazine, spool, felt tip, and end caps. Kodak, Konica, Fuji and Agfa will accept and recycle all brands of steel film magazines through their solid waste recycling program. Although you will be responsible for shipping costs, you won't be paying to throw them away.

Do's

- ✓ Use steel film magazine recycling programs.
- ✓ Encourage other film manufacturers to begin their own steel film magazine recycling program.

Don'ts

- ✗ Don't consider steel film magazines to be dangerous waste. If a recycling option is not chosen, they can be put in the garbage.

OTHER WASTES

Some color and specialty photo processing shops may use system cleaners and bleaches that result in dangerous wastes due to chromium, cyanide, other heavy metals, or pH.

Do's

- ✓ If you are currently using a system cleaner that contains a dichromate compound, investigate switching to a system cleaner that does not contain dichromate.
- ✓ Make sure that system cleaners and other chemicals you are using do not cause you to exceed your local sewer discharge limit for pH.

Don'ts

- ✗ *Don't ever put system cleaners or cyanide-containing wastes, treated or not, into a septic system, storm drain, dry well or onto the ground.*

WASH WATERS

Wash waters used in the film developing process may contain small amounts of film developing chemicals, including used fixer. Typically, these chemicals are found in such small amounts that wash waters aren't a dangerous waste. However, in areas with very low sewer discharge limits for silver, even wash waters can present a concern.

Do's

- ✓ Routinely test the silver levels in your wash water to ensure compliance with silver discharge limits.
- ✓ Maintain your photo processing equipment and regularly check to ensure bleach, developer, and fixer are not being lost by being carried over into the wash water which is not treated. Test results may identify problems before they are visible through inspection. Test strips are appropriate for this purpose.

Don'ts

- ✗ Don't dispose of wash water to the sanitary sewer until you find out what your local silver discharge limit is.

MANAGING SILVER-BEARING WASTES



Photo processors generate developer, used fixer, bleach-fixers, washless stabilizers and C-41 RA bleach as a normal part of doing business. Used fixer and bleach-fixers solutions from photo processors contain up to 8,000 ppm silver. This number greatly exceeds state dangerous and federal hazardous waste limits for silver (set at 5 ppm) and various local water quality discharge limits. Used washless stabilizer contains 100-300 ppm silver and used C-41 RA bleach may contain up to 3 ppm silver. None of these silver-bearing wastes should be discharged to the sanitary sewer without proper silver recovery, either at your place of business or through off-site management. And they should never be put into storm drains, septic systems or dry wells.

ON-SITE OR OFF-SITE MANAGEMENT?

For most small facilities, Ecology recommends off-site waste management. However, managing silver-bearing wastes is unique because silver has value. Whether you choose on-site treatment, off-site treatment or a combination of both for your waste streams, the choice is yours — and it's an important one. While a business generating large volumes of used fixer may recover the costs of their on-site recovery system in a matter of months, smaller volume producers like grocery store minilabs may not see a similar payoff. It is important to remember that whichever strategy you choose, your business must meet dangerous waste and local sewer discharge limits for silver-bearing wastes.

Many photo processors use on-site systems to reclaim silver from their used silver-bearing wastes. However, on-site silver recovery has focused on economics rather than meeting dangerous waste and sewer discharge limits. On-site silver recovery designed to meet such limits is not as simple as plugging in a machine and walking away — it takes a lot of time, effort and trial and error to

do it right, and even then may not meet some of the more stringent local water quality discharge limits. This booklet contains guidance to help you do a better job if you choose to use on-site recovery.

Off-site Management Options

Off-site management of silver-bearing wastes has certain advantages over on-site recovery. Capital, operation and maintenance expenses for equipment are non-existent. Administrative costs, such as analytical monitoring, are not incurred. If a business has space limitations, the off-site option may help ease crowding. Most importantly, having your silver-bearing wastes managed off-site ensures your facility will not violate the dangerous waste and local silver discharge limits. Some companies also give customers credit for the silver recovered from their waste. Be sure to ask about this.

A potential downside to off-site management may be in using a third party. Choose your waste management company carefully — you remain responsible for the proper management of your wastes.

WASTE MANAGEMENT COMPANIES

Consider using a waste management company to pick up your used silver-bearing wastes, or ask your chemical supplier if they have or will start a program that will supply you with new chemicals as they pick up and reclaim your old silver-bearing solutions.

The pick up fees charged by many silver recovery and waste management facilities range from \$50-\$100 per service visit. While some will only pick up silver-bearing wastes, others will manage other waste streams as well, so shop around. Many facilities will allow spent silver-bearing wastes to be dropped off free of charge but prior arrangements should be made. Other facilities will accept shipments of used fixer through common carriers, such as UPS. **(Do not send fixer through the U.S. mail.)** Shipping small amounts of silver-bearing wastes is allowed under Department of Ecology and Department of Transportation rules. The cost of shipping a five gallon carboy from Seattle to Spokane ranges from \$12-\$63. These prices include pick up at your business. The carriers should be contacted directly for the most accurate pricing information.

RECLAMATION AT ANOTHER BUSINESS

If you generate less than 220 pounds of total dangerous waste per month (approximately 26 gallons including used silver-bearing wastes), you have the option of taking silver-bearing wastes to another business that is willing and properly set up to do on-site silver recovery. Neither the Department of Ecology or the Department of Transportation regulates the transport of such Small Quantity Generator (SQG) volumes of silver-bearing waste. This may be an attractive option for businesses with small volumes of silver-bearing waste that do not wish to do on-site recovery themselves. Check with your local government Moderate Risk Waste Program for similar reclamation services.

Businesses using this option should request a receipt for wastes accepted. Businesses receiving silver-bearing wastes from Small Quantity Generators need to ensure that these wastes are legitimately recycled or treated and that dangerous waste and local water quality discharge limits are being met. Businesses receiving silver-bearing wastes from other businesses do not need to count these wastes toward their own monthly hazardous waste total.

On-Site Recovery Options

There are several different types of equipment that fall under the broad heading of silver recovery units. The most common units found in photo processing shops are electrolytic recovery units and metallic replacement or chemical recovery cartridges. While other technologies are mentioned, most of the discussion will center around these commonly used technologies.

METALLIC REPLACEMENT OR CHEMICAL RECOVERY CARTRIDGES

Chemical recovery cartridges (CRCs) are hollow canisters that contain steel fibers or fiberglass impregnated with iron filings. Fixer, bleach-fixers, C-41 RA bleach and washless stabilizer are filtered through the cartridge. When the solution containing dissolved silver contacts the iron, the iron is dissolved and the silver comes out of the solution.

Using two CRCs in series, in conjunction with other recommended management practices, can reduce silver concentrations to about one ppm — but this takes time and effort and may be

achievable only under ideal circumstances. Even with proper care, two CRCs may not be able to meet the sewer discharge limits adopted by many municipalities. Costs for photo processors setting up two CRCs in series range from \$200 to \$1,700. Operating, changeover, and silver testing costs on a three to six month changeover schedule range from \$150 to \$300 annually.

If you are currently using CRCs or a combination of electrolytic recovery and CRCs for on-site reclamation, the following management practices will help bring you closer to meeting dangerous waste and sewer discharge limits. These recommendations are not guaranteed to automatically bring a business into compliance — each business will need to monitor its progress to see if dangerous waste and sewer discharge limits are being met.

MAINTAINING AND OPERATING CRCs

- Businesses using CRCs for on-site reclamation need to use two CRCs in series, at a minimum, to meet state and local BMPs (unless they can document through routine testing that they consistently meet dangerous waste and local water quality discharge limits with only one CRC). Using just one canister, even if it is high quality, will show diminishing effectiveness after being used a few times and will eventually stop working. An electrolytic recovery unit alone will not meet dangerous waste or sewer discharge limits. If you use an electrolytic recovery unit, you still need to use two CRCs.
- Have a sample valve installed between canisters. Use this valve to take samples of the effluent from the first CRC canister. Using silver test papers, check the sample to see when the first canister is spent. Silver test paper can detect silver at levels between 200 and 500 ppm. When your first canister reaches this level, it is time to rotate it out, putting your second canister first in line and adding a new, second canister. In addition, if your tubing between canisters is clear plastic, you can visually inspect the solution flowing through — if it is brown or has debris in it, it's a good sign that the working ability of the first canister is spent.

- Monitor the flow of used solutions into the canisters. If the flow is too fast, the proper reaction won't happen inside the canister and you won't meet silver discharge limits. If it is too slow, it may deteriorate the canister too soon. Use a metered pump system or a restricted gravity feed system and keep flow rates at manufacturer's recommendation, usually between one and three gallons per hour.
- Test your out flow. If you are doing on-site silver recovery, take periodic samples of recovered silver-bearing waste over the life span of a canister and have the waste analyzed for silver to see if it meets the 5.0 ppm dangerous waste threshold or lower local sewer discharge limits. Keep a file with all test data in it — you'll have a starting point from which to make refinements to your on-site process. See the Testing section on page 31.
- Combine your silver-bearing wastes before treatment. Add washless stabilizers and C-41 RA bleach into spent fixer and run them through CRCs as a single batch. Used washless stabilizers have enough silver in them to make them a dangerous waste, and used C-41 RA bleach may have enough silver to exceed some water quality discharge levels.
- Keep a maintenance/changeover log. Perform regular maintenance as recommended in the manufacturer's instruction manual. Work closely with your supplier for help in developing a changeover schedule based on your volumes of silver-bearing solutions. Ask your supplier if they provide a full service waste management option.
- If you're using electrolytic recovery before CRCs, monitor/adjust the pH of the silver-bearing waste before it enters the CRCs. Using simple pH testing papers as an indicator, keep the pH of silver-bearing wastes entering CRCs between 5.5 and 6.5, which is the optimum range for pulling out the most silver and lengthening the life of the canisters. Look for units that have a sample valve in the tubing entering the canisters where a small sample can be periodically taken. Record pH monitoring levels and occurrences in your maintenance/changeover log.

- Fill CRCs with water before initially putting them into service. This will extend the life of canisters by preventing the steel wool from dissolving as the canisters fill with fixer.

ELECTROLYTIC RECOVERY UNITS

An electrolytic recovery unit works by attracting positively-charged silver ions to a negatively-charged cathode that is immersed in used silver-bearing waste. Electrolytic recovery units remove the majority of easily recoverable silver in a nearly pure metallic state. This purity translates into lower refining and shipping costs than other silver recovery methods. An advantage of a properly functioning electrolytic recovery unit is that the solutions processed can be reused in the photo finishing process, given proper attention to pH levels. A disadvantage is that it can only reduce silver concentrations down to a range of 100 to 300 ppm. Without further reclamation, your effluent will not meet hazardous waste or sewer discharge limits. An average unit costs around \$2500.

For optimum silver recovery efficiency, solutions entering an electrolytic recovery unit should have a pH between 7.5 - 8.0. Since the normal pH of silver-bearing solutions ranges from about 5.5 to around 7, pH adjustment is generally necessary. Do not put bleach into electrolytic units.

CHEMICAL PRECIPITATION

Chemicals can be added to silver-bearing solutions that cause silver to settle to the bottom of the container. Once the clear liquid is removed, the silver sludge is filtered and sent off-site for refining. Although the oldest and cheapest method of silver recovery, this procedure has not been commonly used by photo processors. However, manual systems are available (and automated systems are under development) that can reclaim silver and bring down silver levels of the remaining waste to 3-4 ppm. An automated batch system that reclaims 15 to 20 gallons of silver-bearing waste will cost approximately \$3500.

ION EXCHANGE

Ion exchange uses a resin that attracts negatively charged silver thiosulfate complex to positively charged sites on the ion exchange resin. When all the positively charged sites are filled, breakthrough occurs and the resin is regenerated and the silver recovered. Ion exchange is only used to recover silver from wash waters. Cost, space required, and technical requirements typically make ion exchange suitable only for larger photographic facilities.

REVERSE OSMOSIS

In reverse osmosis, effluent is forced through a thin membrane that has microscopic holes. Water molecules pass through the membrane while larger molecules, such as those containing silver and other contaminants remain. A reverse osmosis unit usually produces purified water, which can be reused as wash water, other process water, or discharged to the sewer, as well as a concentrated effluent stream which is high in silver and other photoprocessing chemicals. The silver must then be removed from this concentrated stream by one of the other silver recovery techniques. The sludges or solids that remain are typically hazardous because of the silver they contain. If ammonia is present in the waste stream, as in the case of fixers and bleach-fix, the ammonia must be removed prior to evaporation/distillation. This can be done using activated carbon. Your local air authority should be consulted if you use an evaporator that discharges directly to the air.

EVAPORATION/DISTILLATION

Evaporation and distillation units are used to reduce the volume of liquid waste that has been produced. Evaporators must comply with "Treatment By Generator" requirements and used only on inorganic wastes for the purpose of removing/reducing water content while distillation units condense the vapors and the resulting liquids are either discharged to the sewer or reused. The sludges or solids that remain are typically hazardous because of the silver they contain. If ammonia is present in the waste stream, as in the case of fixers and bleach-fix, the ammonia must be removed prior to evaporation/distillation. This can be done using activated carbon. Your local air authority should be consulted if you use an evaporator that discharges into the air.

Water Quality Requirements

LOCAL SEWER DISCHARGE LIMITS

As the chart below shows, some sewer districts in the state have set their own local silver discharge limits for businesses in order to help the sewage treatment plant meet its own discharge levels for silver. In many locations, sewer discharge levels are so low that businesses using on-site silver recovery technologies such as electrolytic recovery and CRCs will have difficulty meeting these levels. Similar low limits are continuing to be developed in other areas of the state. Businesses located in areas with strict current or future local sewer limits may have no choice but to explore off-site options unless the sewer authority will accept compliance with best management practices in lieu of a numeric limit. All businesses conducting on-site silver reclamation should contact their local sewer utility for more information about local limits.

Municipality	Silver Limit (ppm)	Delegated?
Aberdeen	0.2	No
Chehalis	0.2	No
Clark County	0.1	No
Everett	0.69	Yes
Federal Way	0.5	No
Kalama	0.1	No
King County (Metro)	3.0	Yes
Lynnwood	0.5	Yes
Olympia (LOTT)	0.2	Yes
Pasco	0.2	No
Pierce County	0.2	Yes
Pullman	0.2	No
Richland	0.2	Yes
Spokane	0.43	Yes
Tacoma	0.2	Yes
Vancouver	0.1	Yes
Walla Walla	0.37	No
Yakima	5.02	Yes

DELEGATED AND NON-DELEGATED SEWER

Some sewer utilities, as noted in the right hand column of the above table, are delegated the power to function as the pretreatment control authority. These utilities may control or condition all discharges to their sanitary sewer collection system in the manner described in their approved program or as needed to meet the goals of the pretreatment program. As such, they routinely issue permits to significant sources of non-domestic wastewater, and often adopt best management practices for smaller flows such as when photo processing wastes are the only sources of wastewater which is not similar to domestic wastewater in character and strength. Ecology is responsible for controlling sources of non-domestic wastewater outside these delegated municipalities. Sources of non-domestic waste water in these areas should check with the Ecology regional water quality program to determine whether they need to apply for a "State Waste Discharge Permit" to discharge to the sewer. If so, once the application is reviewed and determined to be complete, Ecology's reviewer will determine if the facility requires a discharge permit or other controls and will initiate followup.

HAZARDOUS WASTE REQUIREMENTS FOR PHOTO PROCESSORS



STEP 1: IDENTIFY YOUR WASTE AND GENERATOR STATUS

Photo processors generate dangerous silver-bearing wastes from fixer, bleach-fixers, washless stabilizer and C-41 RA bleach. Developers are also dangerous if they contain more than one percent hydroquinone and are disposed of before use. Used system cleaners may be dangerous due to toxicity and pH. Most businesses need to “count” these wastes toward a monthly hazardous waste total.

You are a Small Quantity Generator if you always generate less than 220 pounds of dangerous waste per month and always dispose of the waste before you accumulate more than 2,200 pounds. Small Quantity Generators are required to comply only with Steps 1, 8 (and 3 if you already have an active RCRA ID number).

If you generate over 220 pounds but only generate silver-bearing dangerous waste (i.e., no developer, system cleaner, or other dangerous wastes) and you recycle or treat this material immediately through hard pipes, you need not count this waste. If you accumulate your waste prior to recycling, or recycle in another way you must count that waste and need to comply with Steps 2, 3, 8, 9 and 10.

If your total monthly amount of dangerous waste totals over 220 pounds (about 26 gallons) and this count includes more than just silver-bearing wastes, you are a Regulated Generator required to meet compliance Steps 2-11.

STEP 2: OBTAIN A GENERATOR ID NUMBER

If you are a regulated generator, you are required to notify Ecology of your dangerous waste activities and obtain a site-specific RCRA ID number using Ecology's Site ID Form. To get a Site ID Form, call (800) 874-2022 or (360) 407-6170, or visit Ecology's Web site at <http://www.ecy.wa.gov/programs/hwtr/waste-report/index.html>

STEP 3: REPORT ANNUALLY

If you have an active RCRA ID number, you must submit an annual report (Ecology's Annual Report Form) by March 1 of each year, even if you have not generated waste in that year. Record your dangerous waste activities for the previous calendar year on this report, including how much waste you've generated or accumulated on-site and waste you've sent off-site. Ecology conducts annual workshops for businesses seeking assistance in completing their annual reports. Annual reporting forms and instructions for paper filers and electronic reporting can be found at <http://www.ecy.wa.gov/programs/hwtr/waste-report/index.html>

STEP 4: PERFORM PREVENTIVE MAINTENANCE

Dangerous wastes must be handled in a manner that prevents leaks, spills, fires and explosions. Develop and follow a written inspection schedule for all dangerous waste storage areas, containers and tanks and include all emergency, safety and monitoring equipment on site. Keep the necessary emergency equipment (such as fire extinguishers and telephones) on hand and accessible to employees. You must regularly test and maintain all your emergency equipment. Notify police, fire departments and local hospital of the characteristics of any dangerous wastes generated at your site, as well as the facility layout and access routes.

STEP 5: PROPERLY ACCUMULATE DANGEROUS WASTE

Photo processors typically generate less than 2,200 pounds of dangerous waste per month. If so, you can accumulate your dangerous waste on-site for up to 180 days from the date it is first generated before you must manage it on-site or send it to an appropriate facility. If you generate more than 2,200 pounds per month you can only accumulate the waste for up to 90 days. While accumulating wastes, you must follow certain requirements:

1. Establish and clearly mark a dangerous waste accumulation area. If constructed after September 30, 1986, it must have a containment system able to hold spills and leaks.
2. Place the waste in an appropriate container and mark it with the words "Dangerous Waste" or "Hazardous Waste," the waste's major risk (such as "Toxic"), and the date you first put waste in the container.

STEP 6: PLAN FOR EMERGENCIES

There must be an emergency coordinator on the premises or on call at all times who is familiar with the operations and activities at the site and has the authority to commit the resources necessary to deal with a hazardous waste emergency. In a small shop, this will probably be the owner or manager. Make sure you train your employees to know how to react to different types of emergencies in your shop.

STEP 7: USE PROPER CONTAINERS

Many dangerous waste incidents and work related injuries are linked to improper or unsafe container management. To avoid such accidents:

- Accumulate your wastes in containers which are sturdy, leakproof, properly labeled, and kept closed unless waste is being added or removed. Use your empty product containers as convenient waste accumulation containers.
- Don't accumulate incompatible wastes in the same containers or areas.
- Store reactive and ignitable wastes according to the International Fire Code.
- Maintain a minimum aisle space of 30 inches between container rows.
- Inspect containers at least once a week, keeping a log of inspections.

STEP 8: ENSURE PROPER TRANSPORTATION AND DISPOSAL

Regulated generators must hire a transporter that has a RCRA ID number and insure that wastes are handled at a permitted dangerous waste facility or a facility that legitimately recycles and reclaims dangerous waste. Small Quantity Generators can transport their own wastes or make sure they are sent to a permitted facility, a legitimate recycler, or the sanitary sewer (with written authorization only).in your shop.

STEP 9: MANIFEST SHIPMENTS OF DANGEROUS WASTE

To ship dangerous wastes off-site, regulated generators must prepare a Federal Uniform Hazardous Waste Manifest Form which identifies the contents of the shipment, the transport company used and the facility receiving the wastes. This form accompanies the waste from the site where it is generated to its ultimate resting place and then is sent to you for your records. If you are a regulated generator, your waste hauler needs to use a manifest and may not just issue a bill of lading or receipt.

STEP 10: DON'T SPECULATIVELY ACCUMULATE

If you are a regulated generator and you accumulate silver-bearing wastes for more than 180 days, you need to document that you are not speculatively accumulating this material. Speculative accumulation means collecting a waste with the hope that it may one day have value. You need to keep records showing the volume of these materials stored at the beginning of the year, the amount of these materials generated or received during the calendar year, and the amount of materials remaining at the end of the calendar year. You must also be able to show that at least 75 percent of that year's silver-bearing wastes were recycled, or transported elsewhere for recycling.

STEP 11: KEEP RECORDS

There are a number of records that regulated generators must prepare and keep on the premises for at least five years, including annual reports and manifest forms. Keep copies of notification reports (Site ID Form), inspection records, results from waste analyses or tests, and on-site recycling records for as long as you are in business. Small Quantity Generators should also keep records of their dangerous waste management activities.

IMPORTANT TOPICS



TESTING

Businesses discharging reclaimed silver-bearing wastes are responsible for knowing if they meet dangerous waste and sewer discharge limits. Sending a sample of a waste to a laboratory for analysis is the most accurate way to determine if the waste is dangerous or meets sewer discharge limits — and it's relatively inexpensive.

For analyzing concentrations of metals, a total metals test is used to determine compliance with local sewer discharge limits while a TCLP (Toxicity Characteristic Leaching Procedure) test is used to determine whether a waste is dangerous. A total metals test checks for the total amount of a metal in a waste while a TCLP checks for the amount that could leach into the ground in a landfill. For used fixer, a total metals test can be used for determining sewer discharge and dangerous waste levels. If you're using CRCs, regular testing over the life span of a canister can indicate if your maintenance schedule could be extended, saving you the cost of an additional unit. Test strips may be used for this purpose as well and this option is considerably economical and faster.

Once you have established a track record of consistent compliance (e.g., testing your silver-bearing waste stream over time and continuing to meet dangerous waste and sewer discharge limits), you can use those test results and changeover schedules as an indicator of future compliance with regulatory levels. See page 28 for a list of testing services available.

MATERIAL DATA SAFETY SHEETS (MSDS)

A material data safety sheet (MSDS) is required to come with each of the chemical products you purchase from a manufacturer or

vendor. As a business, you are required to keep MSDSs for all products available to employees. This is a Washington Industry Safety and Health Act requirement. MSDSs have a reputation for being long, overly technical and difficult to read. While this may be true, the ability to scan through an MSDS and pick out the following information is important. MSDSs are valuable because they describe:

- physical and chemical properties of the hazardous substances contained in the product,
- spill cleanup instructions,
- health hazards and appropriate first aid,
- fire and explosion hazards, and
- proper management and disposal practices.

Not all MSDSs are formatted the same way, but they are all required to contain certain information. If you want additional information about a chemical product, contact the manufacturer using the phone number provided on the MSDS.

FOR MORE INFORMATION

You can find more information about properly managing your wastes as well as this and other publications on Ecology's Web site at <http://www.ecy.wa.gov>



For information about businesses that can help you manage your wastes go to the Hazardous Waste Services Directory at <http://www.ecy.wa.gov/apps/hwtr/hwsd/default.htm>

The first screen lists the services available to hazardous waste generators. Select which type of waste management service is needed, click "Search" and a listing of all the companies that offer that service will appear. Select a firm and click on "Details" to get more information.

Although the directory is updated routinely to keep the information current and useful, these listings do not constitute a recommendation, and the Department of Ecology does not assume any liability for the accuracy or completeness of the information in the directory. If you have questions or comments about the on-line directory, e-mail Dave Zink at dzin461@ecy.wa.gov



PLAY IT SAFE!

Before you agree to let a company handle your waste, ask for, and check, the company's references. The following questions might be useful in assessing the management practices of a business you are considering:

- How do you manage the waste you collect or analyze?
- Do you reduce or recycle waste before disposal? Do you contract out for such services, and if so, to whom?
- How do you train your employees?
- Do they have a basic understanding of regulations/liabilities pertaining to your waste stream?
- Are you insured? In some cases it may be appropriate to ask for a RCRA Identification number.
- Do you or your affiliate companies have any current, recent (3-5 years) or pending enforcement actions or fines with state, federal or local authorities? (Call your nearest Ecology regional office to verify.)

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