

FACT SHEET FOR NPDES PERMIT WA- 000320-4

SOUND REFINING, INC.

DATE OF THIS FACT SHEET – January 30, 2007

DATE OF EXPIRING PERMIT - 7/1/2004

SUMMARY

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see [Appendix A--Public Involvement](#) of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix E--Response to Comments.

GENERAL INFORMATION	
Applicant	Sound Refining, Inc.
Facility Name and Address	2628 Marine View Drive Tacoma, WA 98422
Type of Facility:	Petroleum refinery
SIC Code	2911 NAICS Code: 32411
Discharge Location	Waterbody name: Hylebos Waterway Outfall 002 Latitude: 47° 16' 40" N Longitude: 122° 23' 0" W. Outfall 003 Latitude: 47° 16' 40" N Longitude: 122° 23' 0" W. Outfall 004 Latitude: 47° 16' 40" N Longitude: 122° 23' 0" W.
Water Body ID Number	WA-10-0020

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BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

In May 2004 the assets of Sound Refining, Inc. came under new ownership. Sound Refining, Inc. is located on the Hylebos waterway on the northwest edge of the Tacoma tide flats. The site has about 20 acres with industrial activity and another 10 acres not in industrial use. Sound was started in 1967 as a crude oil refinery.

INDUSTRIAL PROCESS

The refinery facilities consist of distillation units, a tank farm, a marine transfer facility, and a wastewater treatment facility. In the past it produced distillate oil and asphaltic residue from heavy Venezuelan crude to supply the Pacific Northwest. Sound Refining presently operates as a terminal for petroleum products. The volume of tankage within the facility is 29 million gallons or 690,000 barrels (bbls).

The production capability at the facility is approximately 8000 barrels per day. During the term of the previous water quality permit (1999 - 2004) production was on an occasional basis.

YEAR	TOTAL PRODUCTION BBLs/YEAR
Jul & Sep 1999	115,298
2000	0
2001	0
Mar & Apr 2002	79,063
2003	0
2004	0
2005	0
2006	0

The majority of product is transferred through the marine facility. The remainder is transferred at the truck loading facilities.

WASTEWATER FACILITY

The first wastewater treatment facility was constructed and began discharging in 1967. It consisted of three oil/water separators and a holding pond. The system was rebuilt in 1976 to include an API separator, a surge pond, a Pielkenroad corrugated plate interceptor (CPI), an equalization tank, an aeration basin, a rotating biological contactor (RBC), a clarifier, and an excelsior filter. In May of 1991 an induced air filtration unit (IAF) was installed to prevent total suspended solids exceedances. The API and CPI separators are used to

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recover oil that is then recycled through the refining process. The IAF unit removes additional solids and gross oil. Biological treatment follows and consists of an aeration basin and an RBC unit. The wastewater is then clarified and discharged. Prior to December 16, 1995 Sound's treated process wastewater was discharged to the Hylebos waterway. Sound completed construction of a pump station that began discharging treated process wastewater into the City of Tacoma's wastewater collection system. The discharge piping was removed in mid-January of 1996. The City of Tacoma has issued a pretreatment permit to regulate the discharge into their wastewater collection system. It was last reissued February 1, 2006.

STORMWATER BASINS AND DISCHARGE OUTFALLS

Sound Refining, Inc. submitted a stormwater study in September of 1992 that described the stormwater drainage basins. The property can be divided into three stormwater drainage basins that are shown in **Appendix D**. The stormwater discharges are designated 002 through 004. Discharge 001 was the main process wastewater outfall and has been disconnected. Outfalls 002 - 004 drain the refinery property and may have industrial impact. The discharge pipes of outfalls 002 - 004 were fabricated with corrugated pipe.

The process area drains to the oily water sewer, which discharges to the wastewater treatment facility. The treatment facility discharges to the City of Tacoma wastewater system. This area is not identified as a basin.

Basin A drains the easternmost portion of the east tank farm to Outfall **002**. The total area drained is 116,400 ft². This basin includes Tanks 26, 27, 28 and 161 and 162. The tank farm area drains to a concrete sump. Oil can be trapped in this area. The sump drains to a weir located at the discharge box, which contains oil adsorbing filtration fabric and sorbent pads. This discharge is valved and is left in the closed position. The operator must therefore make a decision to drain this area. A short length of pipe exits the box and discharges to the Hylebos. The pipe is several feet over the surface of the water depending on the tidal height.

Basin B drains the rest of the eastern tank farm (Tanks 1-5, and 22), a portion of the truck rack, and the area outside the laboratory building. Basin B, covering 112,600 ft², discharges to Outfall **003**. The diked area containing the tanks drains to a concrete lined drainage ditch and collection basin. The collection basin has a weir and is valved. This is drained to a valve box outside of the diked area. The truck racks and the area outside of the lab building drain to a discharge channel which also contains a continuously flowing spring that runs through the refinery facility. This flows through a valve box that was placed upstream of the discharge pipe in order to temporarily stop flow should a spill occur. Because of the spring's continuous flow the amount of time available to contain a spill in this area would be minimal. This valve box discharges to a weir box containing an oil adsorbing filtration fabric and sorbent pads. The diked area is also connected to this weir box. The box discharges into the Hylebos through a short length of pipe designated as Outfall 003. The discharge pipe is suspended several feet over the Hylebos dependant on tidal level.

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Basin C drains the western tank farm, a portion of the truck rack, and the bermed smaller tank areas that lie within the process area. Tanks 7-9, 11-21, 25, 29, 151, 152, and 155 - 157 are located in this area which is approximately 246,000 ft². The larger westernmost tank farm drains to a sump at the southeast corner of the earthen containment basin. This sump is valved to the weir box at Outfall **004**. The smaller tank farm is valved through another line to the same weir box. It goes through a series of sumps and weirs prior to ending up at the final weir box. There is another discharge point from the westernmost tank farm consisting of a sump that is located in the northwest corner of the tank farm. The sump is valved and discharges to Outfall 006. Sound does not use this discharge to drain the tank farm however. The final weir box contains oil adsorbing filtration fabric and sorbent pads. A short length of discharge pipe, designated as Outfall 004, exits the weir box which discharges stormwater several feet above the surface of the Hylebos dependent on tidal level.

POTENTIAL COMBINING OF OUTFALLS 002 AND 003

Basin A discharges stormwater through Outfall 002. In Basin B there is always a discharge at Outfall 003, whether there is stormwater or not, due to a spring located there. Sound Refining is looking into combining the discharges of both basins. Basin A would be diverted to Outfall 003. The permit would go through modification procedures to capture this change. Outfalls 002 through 004 are located on the bulkhead and normally discharge above the water line to the Hylebos.

EXISTING STORMWATER MANAGEMENT PRACTICES

The weir boxes are checked several times daily for signs of oil and grease. The weir boxes are cleaned on a monthly basis at which time the oil adsorbing filtration fabric and sorbent pads are replaced.

The majority of potential pollutant sources such as tank valves and pumps, within the stormwater drainage basins, are contained in some manner. Pumps have curbed containment slabs with sumps which either discharge directly to the process wastewater system or are periodically pumped out to the wastewater system. These containment areas were upgraded or installed in the last permit term. Concrete containment areas were expanded, added, or modified as necessary to maximize containment. Containment under valves generally consists of a drip bucket or box. Maintenance personnel are required to report and cleanup spills as they occur. Sound's record on these activities has vastly improved under the new management.

Fertilizers, pesticides and soil conditioners are not used on site. Herbicides are used in a limited fashion in the tank farms. Petroleum products stored on site include diesel and fuel oil. Other types of products and waste products stored on-site include salts, caustics, paints, and solvents. The facility is manned 24 hours a day.

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PERMIT STATUS

The previous permit for this facility was issued on May 21, 1999. The previous permit placed effluent limitations on the stormwater discharges as tabulated below.

STORMWATER DISCHARGES 002, 003, 004		
PARAMETERS	MONTHLY AVERAGE	DAILY MAXIMUM
Oil & Grease (O&G)	10 mg/L	15 mg/L
pH	Within the range of 6.0 to 9.0	

Stormwater outfalls 002, 003, and 004 also were monitored monthly for total suspended solids, biochemical oxygen demand and chemical oxygen demand. There were no permit limits set for these parameters. These outfalls were required to be visually monitored on a daily basis for the presence of oil and grease.

An application for permit renewal was submitted to the Department on June 29, 2004 and accepted by the Department on October 14, 2005.

SUMMARY OF COMPLIANCE WITH THE PERMIT ISSUED MAY 21, 1999

Sound Refining, Inc. receives a compliance inspection with sampling every two years and a compliance inspection without sampling in the intervening years. The last two sampling inspections were conducted on April 11, 2006 and May 19, 2004. A compliance inspection without sampling was conducted on February 25, 2005. Sound Refining was in compliance during all of these inspections.

During the history of the May 21, 1999 permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

However, Sound Refining failed to collect four storm water samples for priority pollutant metals from two of the facility outfalls as required by permit Condition S2.A. They also failed to collect four Human Health Criteria Monitoring samples from two outfalls as required by condition S4. Sound Refining submitted no stormwater pollution prevention plan required under condition S5 of this permit. Finally they did not submit an application for permit renewal prior to January 2, 2004 as required by permit condition G7.

On May 1, 2004, Sound Refining had a change in ownership. In June a penalty was issued for the above listed deficiencies. The new owners appealed and a settlement agreement was negotiated and signed in December 2004, to ensure that all timelines for compliance are met. The new settlement required an environmental audit by an outside contractor and then a procedure put in place to track all NPDES permit requirements. In addition Sound Refining paid a penalty of \$3,720.00 on January 22, 2005. The audit has been completed and procedures set in place. In July 2006, a second audit was done to confirm that the procedures in place are working

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well. The amount of \$3,211.81 remaining after payment to the outside contractor was remitted to Ecology on October 2, 2006.

Refer to the Special and General Conditions of this permit for additional submittal requirements.

REPORT/PLAN	Due Date	Submittal Date
S2.F Spill Reporting & Notification Reporting System	10/01/1999	Not submitted
S4 Human Health Criteria Report	01/02/2004	Not submitted
S5.A.1 Pollution Prevention Plan (P2 Plan)	07/01/2001	Not submitted
S5.G P2 Plan Annual Progress Reports	07/01/2002	Not submitted
G7 Application for permit renewal	01/02/2004	06/29/2004

WASTEWATER CHARACTERIZATION

Stormwater from Outfalls 003 –004 was characterized by Sound Refining, Inc. on May 26, 2004 for outfall 003 and December 16, 2003 for outfall 004 for the regulated parameters shown in Table 1. Grab samples taken on May 26 and May 27 were analyzed for human health criteria and priority pollutants. Only those parameters that were detected are listed.

Table 1: Stormwater Characterization

	DISCHARGE 003 May 26, 2004		DISCHARGE 004 December 16, 2003	
Flow gpd (calculated)	2247		2472	
Regulated Parameters	Conc. mg/l	Mass in lbs/day	Conc. mg/l	Mass in lbs/day
Biochemical Oxygen Demand (5day BOD)	2.57	0.05	9.80	0.20
Chemical Oxygen Demand (COD)	33.80	0.63	30.80	0.63
Total Suspended Solids (TSS)	84.00	1.57	6.25	0.13
Oil & Grease	< 2.0	<0.02	3.75	0.08
Human Health Parameters May 27, 2004	mg/l		mg/l	
Chloroform	0.001		<0.001	
Toluene	0.003		0.003	
Priority Pollutant Parameters May 26, 2004	mg/l		mg/l	
Zinc	0.013		0.024	

The chloroform and toluene values were the only parameters in their application for human health that were detectable. Both are well below the human health criteria for marine waters. Human Health Criteria for chloroform is 0.47 mg/L and for toluene is 200 mg/L.

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Zinc was the only priority pollutant metal that was above detection level on the sampling dates noted above. Water Quality Criteria for marine waters for zinc are 0.090 mg/L for acute, and 0.081 mg/L for chronic.

Appendix C includes data collected by Sound Refining, Inc. during first flush sampling and by Ecology during wastewater inspections. Sound Refining conducted nine monitoring events of first flush stormwater discharges after dry periods, during the term of the permit.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

PETROLEUM REFINING POINT SOURCES

Guidelines for petroleum refining point sources were published August 12, 1985 under 40 CFR Part 419 by the Environmental Protection Agency (EPA) for the topping subcategory of petroleum refining. These limitations are based on terms of a settlement agreement dated April 17, 1984, between EPA and the Natural Resources Defense Council resolving litigation about the EPA guidelines. The August 12, 1985 guidelines establish Best Available Technology (BAT) and Best Conventional Technology (BCT) as equal to Best Practicable Technology (BPT) for all parameters except phenols and chromium. Phenols and chromium are regulated by whichever

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guideline is more stringent. All known, available, and reasonable methods to control toxicants in the applicant's wastewater shall be used.

Sound's process wastewaters are currently regulated by the City of Tacoma's pretreatment program. Discharge standards are based on 40 CFR Part 437 Subpart B, "Oils Treatment and Recovery".

The discharges from Outfalls 002, 003 and 004 are not commingled or treated with process wastewater. Discharges 002, 003 and 004 however could potentially consist of contaminated runoff and are limited as discussed in the following. Effluent limitations for contaminated runoff are included in 40 CFR Part 419. If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) and 15 mg/l oil and grease (O&G) based upon an analysis of any single grab or composite sample. If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l O&G or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants shall not exceed the effluent limitations as tabulated below. The following tabulates those effluent limitations.

	DAILY MAXIMUM		MONTHLY AVERAGE	
	pounds per 1000 gal	mg/l	pounds per 1000 gal	mg/l
Biochemical Oxygen Demand (5day BOD)	0.40	48	0.22	26
Total Suspended Solids (TSS)	0.28	33	0.18	21
Chemical Oxygen Demand (COD)	3	360	1.5	180
Oil & Grease	0.13	15	0.067	8
Phenolic Compounds	0.0029	0.35	0.0014	0.17
Total chromium	0.0050	0.60	0.0018	0.21
Hexavalent Chromium	0.00052	0.062	0.00023	0.028
pH	within the range of 6.0 to 9.0			

The results of the stormwater study conducted by Sound Refining, as a result of conditions in the existing permit, indicate that the discharge is within the above listed effluent limitations. The wastewater inspection data confirms this information. The available data, as shown in **Appendix C**, also indicate that the stormwater discharges do not exceed 15 mg/l O&G or 110 mg/l TOC and therefore may be discharged without including effluent limitations as established by federal effluent guidelines.

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Ecology's guidance for petroleum handling facilities indicates that oil/water separators should be considered to be AKART. The technology-based limits for oil/water separators are 10 mg/l as a monthly average and 15 mg/l as a daily maximum. Sound Refining has weir-boxes in place for these stormwater outfalls, however, and the data indicates that they can meet these limits with the current best management practices in place. The proposed permit requires Sound to periodically monitor stormwater to ensure that the discharge remains within these limitations. If the facility has difficulty meeting limits, consideration will be given to requiring an engineering analysis to come into compliance.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

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ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

This permit authorizes an acute and a chronic mixing zone around the point of discharge as allowed by Chapter 173-201A WAC, *Water Quality Standards for Surface Waters of the State of Washington*. The Water Quality Standards stipulate some criteria be met before a mixing zone is allowed. The requirements and Ecology's actions are summarized as follows:

1. The allowable size and location be established in a permit.

This permit specifies the size and location of the allowed mixing zone.

2. Fully apply "all known available and reasonable methods of treatment" (AKART).

The technology-based limitations determined to be AKART are discussed in an earlier Section of this fact sheet (see Technology-based Limitations).

3. Consider critical discharge condition.

The critical discharge condition is often pollutant-specific or water body-specific and is discussed above.

4. Supporting information clearly indicates the mixing zone would not have a reasonable potential to cause the loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses, result in damage to the ecosystem or adversely affect public health.

The Department of Ecology has reviewed the information on the characteristics of the discharge, receiving water characteristics and the discharge location. Based on this information, Ecology believes this discharge does not have a reasonable potential to cause the loss of sensitive or important habitat, substantially interfere with existing or characteristics uses, result in damage to the ecosystem or adversely affect public health.

5. Water quality criteria shall not be violated (exceeded) outside the boundary of a mixing zone.

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A reasonable potential analysis, using procedures established by USEPA and the Department of Ecology, was conducted for each pollutant to assure there will be no violations of the water quality criteria outside the boundary of a mixing zone.

6. The size of the mixing zone and the concentrations of the pollutants shall be minimized.

The size of the mixing zone (in the form of the dilution factor) has been minimized by the use of design criteria with low probability of occurrence. For example, the reasonable potential analysis used the expected 95th percentile pollutant concentration, the 90th percentile background concentration, the centerline dilution factor and the lowest flow occurring once in every 10 years.

7. Maximum size of mixing zone

The authorized mixing zone does not exceed the maximum size restriction.

8. Acute Mixing Zone

A. Acute criteria met as near to the point of discharge as practicably attainable.

The acute criteria have been determined to be met at 10% of the distance of the chronic mixing zone at the ten year low flow.

B. The concentration of, and duration and frequency of exposure to the discharge, will not create a barrier to migration or translocation of indigenous organisms to a degree that has the potential to cause damage to the ecosystem.

The toxicity of pollutants is dependent upon the exposure which in turn is dependent upon the concentration and the time the organism is exposed to that concentration. For example EPA gives the acute criteria for copper as “freshwater aquatic organisms and their uses should not be affected unacceptably if the 1- hour average concentration (in µg/l) does not exceed the numerical value given by $(0.960)(e^{(0.9422[\ln(\text{hardness})] - 1.464)})$ more than once every three years on the average.” The limited acute mixing zone authorized for this discharge will assure that it will not create a barrier to migration. The effluent from this discharge will rise as it enters the receiving water assuring that it will not cause translocation of indigenous organism near the point of discharge.

C. Comply with size restrictions

The mixing zone authorized for this discharge meets the size restrictions of WAC 173-201A.

9. Overlap of Mixing Zones

This mixing zone does not overlap another mixing zone

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

A mixing zone has been established for each stormwater discharge (Outfalls 002, 003, and 004) in the NPDES permit. Each mixing zone shall extend from the discharge port in a horizontal direction of no greater than 200 feet plus the depth of water at the discharge port as measured during mean lower low water but shall not occupy greater than 25% of the width of the water body as measured during mean lower low water.

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Continued monitoring of toxics will provide a database to evaluate and determine if a mixing study should be required to determine the actual mixing available.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to marine water in the Hylebos waterway in Commencement Bay, which is designated as a Class B receiving water in the vicinity of the outfall. The area is heavily industrialized. Other nearby point source outfalls include several log sort yards, General Metals, a woodworking facility, City of Tacoma stormwater outfalls, and a marina. Water quality of this class shall meet or exceed the requirements for most uses. Characteristic uses include the following: water supply (industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning, and harvesting; wildlife habitat; secondary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class must meet or exceed the requirements for most uses.

The Hylebos waterway is included on the 2002/2004 EPA 303(d) list for arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, and temperature in water and chlorinated pesticides, DDT, PAHs and total PCBs in tissue. In 2005 an agreement was reached by EPA and responsible parties to dredge and cap the most contaminated areas in the Hylebos waterway. This will remove or confine these pollutants. As a part of the cleanup of the Hylebos, Sound Refining replaced its bulkheads. The area around these bulkheads is being left to natural remediation of the pollutants.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100 colonies/100 ml maximum geometric mean
Dissolved Oxygen	Greater than 5 mg/L minimum
Temperature	19 degrees Celsius maximum
pH	7.0 to 8.5 standard units
Turbidity	less than 10 NTU above background
Toxics	No toxics in toxic amounts

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the degree of dilution and the quality of the

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stormwater discharge, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

Stormwater Benchmarks

Ecology has established action values in the general industrial stormwater permit which are higher than the stormwater permit benchmarks. Monitoring results above the permit action values, particularly monitoring results which frequently measure above the action values, indicate that water quality standards are likely being violated. In addition, monitoring results above action values indicate a need for additional source and operational controls and the possible need for stormwater treatment.

Benchmarks and action levels are not effluent limitations, and monitoring results which are above these values are not permit violations. Benchmarks and the new action levels are indicator values. Values measured at or below benchmarks are considered unlikely to cause a water quality violation. As stormwater monitoring values increase in magnitude above benchmarks they indicate an increasing probability that water quality standards are being violated.

The benchmarks for these metals are from the EPA Industrial Stormwater General Permit. The EPA proposed these benchmarks as generally protective of water quality standards. To derive the action levels, the benchmarks were assumed to be long term averages (LTA) protective of water quality. The objective of the permit is to assure these levels are generally being met on a long-term basis. Ecology used the general industrial stormwater permit as guidance in drafting this individual permit.

For ease of implementation Ecology uses only the benchmark values in this individual permit. Monitoring results above the benchmarks values will trigger mandatory responses by the Permittee. The Permittee's failure to perform the required actions triggered by the monitoring results constitutes a permit violation.

Action Levels	
Parameter	Benchmark Value
COD	60 mg/L
BOD	60 mg/L
TSS	25 mg/L
Total Zinc	117 µg/L
pH	6-9 SU
Total Copper	63.6 µg/L
Total Lead	81.6 µg/L

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WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected to be present in Sound Refining's stormwater discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in the stormwater.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health, does not contain chemicals of concern based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

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COMPARISON OF EFFLUENT LIMITS WITH THE PERMIT ISSUED ON MAY 21, 1999

Parameter	1999 Permit Limits	Proposed Limits
Oil & Grease	10 mg/L average monthly 15 mg/L maximum daily	10 mg/L average monthly 15 mg/L maximum daily
pH	Within the range of 6.0 to 9.0	Within the range of 6.0 to 9.0

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for metal and some conventional parameters is being required to further characterize the effluent and to ensure stormwater benchmark values are being met. The monitoring and testing schedule is detailed in the proposed permit under Condition S1. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC,

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S2. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via a stormwater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

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SPILL NOTIFICATION

To ensure proper notification in the event of a spill a requirement is included in the proposed permit for the Permittee to prepare and submit a description of the reporting system. The Permittee will be required to report spills according to the submitted reporting system.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE HANDLING

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee handles and disposes of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

STORMWATER POLLUTION PREVENTION PLAN

In previous NPDES permits and under other Ecology initiatives Sound Refining, Inc. was required to prepare a variety of spill plans and a solid waste plan. A Marine Oil Spill Contingency Plan was approved by Ecology on May 25, 2006. Ecology's Southwest Regional Office's spill group reviews and approves this plan for Sound Refining, Inc. These documents focus on specific sources of potential pollution and specific pollutant parameters. This permit includes a requirement that directs the Permittee to specifically review and evaluate facility processes and activities for source reduction and control of water pollutants.

Ecology's goals and objectives for developing and implementing pollution prevention plans are to identify, reduce, eliminate, and prevent the generation and release of pollutants to stormwater, and/or waters of the state and to prevent violations of surface water, ground water, and sediment quality standards. The identification, evaluation, and selection of pollution prevention opportunities will be documented in the plan submitted to Ecology.

The plan should comprehensively address all sources of pollutants that could potentially be released to stormwater and/or waters of the state. Previous requirements have focused on specific types of sources (e.g., solid waste handling), pathways to the environment (e.g., stormwater), or prevention/control measures (e.g., BMPs). These specific requirements are discussed in more detail in the following paragraphs. While the pollution prevention plan is not limited to these specific areas, it should address them using existing guidance. The Permittee

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will be expected to apply the methodologies from existing guidance to cover other sources, pathways, or measures not covered within the strict scope of that guidance.

The pollution prevention plan requirements include the identification and implementation of Best Management Practices (BMPs). Pursuant to RCW 90.48 and Sections 302 and 402 of the Clean Water Act, BMPs may be incorporated as permit conditions. BMPs are actions or procedures to prevent or minimize the potential for the release of pollutants or hazardous substances in significant quantities to surface water and groundwater. BMPs, though normally qualitative, are most effective when used in conjunction with numerical effluent limits in NPDES permits. General BMPs are included in the permit and must be complied with. These general BMPs must be included either verbatim or in an Ecology approved modified form in the Pollution Prevention Plan. The Ecology reviewed and approved specific facility BMPs will replace or amend the general BMPs and become an enforceable part of the NPDES permit.

The plan requirements address stormwater pollution prevention. Ecology has developed guidance for the prevention of stormwater runoff contamination, entitled *Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities* (May 2004). Where other facility plans (such as the SPCC Plan or Oil Spill Prevention Plan) already address the prevention of stormwater runoff contamination, the pollution prevention plan may incorporate the appropriate sections of those plans. These plans, however, will not be all inclusive of the BMPs necessary for prevention of stormwater pollution by more conventional pollutants -- in particular, total suspended solids. They will also not address "clean" areas of the facility, that is those areas where petroleum products or hazardous materials are not stored or used. These "clean" areas contribute conventional pollutants to the facility's stormwater.

The pollution prevention plan requires a review of solid waste handling and disposal procedures to prevent solid waste and solid waste leachate from causing pollution of state waters. In addition, the plan will include a description of measures already taken to prevent the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

Periodic updates of the plan will be required by the NPDES permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

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The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five (5) years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information

(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

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APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department published a Public Notice of Draft (PNOD) on **January 31, 2007** in Tacoma's *The News Tribune*. The Notice informs the public where to read a draft of the permit and fact sheet—at the Tacoma Main Public Library, at Ecology's Industrial Section (addresses below), or on the Internet. Ecology invites public examination of, and comments on the legal adequacy of the proposed wastewater discharge permit

Ecology posted copies of the draft NPDES permit and fact sheet on our Industrial Section web pages for reading and printing: <http://apps.ecy.wa.gov/industrial/proposed.asp>. These documents and related materials are also available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. workdays, by appointment (phone 360/407-6916).

Written comments should be mailed to:

Department of Ecology
Arlene Army, Industrial Section
P. O. Box 47706
Olympia, WA 98504-7600

Deliver written comments to:

Department of Ecology HQ
Arlene Army, Industrial Section
300 Desmond Drive – Bay 3B
Lacey, WA 98503

Anyone may comment on the draft permit or may request a public hearing on it, within the thirty (30) days comment period. A request for a hearing must describe the requester's interest and must explain why a hearing would serve the public interest. Ecology will conduct a hearing if we find significant public interest in the draft permit (WAC 173-220-090). Public notice about the time, place, and topic of any hearing will be published at least thirty (30) days in advance of the hearing. Ecology staff will mail an individual Notice of Hearing to each person who expressed an interest in this permit (WAC 173-220-100).

Comments should reference a specific section of text, followed by the commentator's concern, and a proposed modification when possible. Comments may address technical issues, accuracy and completeness of information in the permit, or the scope of the facility's proposed pollution release; the comments should assess the adequacy of environmental protection, certain permit conditions, or any other concern that would result from issuance of this permit as proposed.

The Department will consider all comments received within thirty (30) days from the date of Public Notice of draft (or within thirty days of publishing the Notice of Hearing) in formulating a final determination to issue, revise, or deny the permit draft. The Department's response to all significant comments is available upon request and will be mailed directly to people who expressed an interest in this permit.

Further information may be obtained from the Department by telephone, **360/407-6930**, or by writing to the address listed above.

This permit and fact sheet were written by **Arlene Army**.

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APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for “all known, available, and reasonable methods of treatment”.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--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: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

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Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--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, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over a short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

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Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- 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 the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--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 storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

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Upset--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, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

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APPENDIX C— STORMWATER DATA

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APPENDIX D— STORMWATER BASIN MAP

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APPENDIX E—RESPONSE TO COMMENTS