



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-3452 • (206) 649-7000

June 30, 1994

CERTIFIED MAIL

P 311 404 566

Mr. William Brougher
Acting Managing Director
Airport Division
Port of Seattle
PO Box 1209
Seattle, WA 98111

RE: NPDES Permit Issuance
NPDES Permit No. WA-002465-1
Expiration Date: June 30, 1999

Under the provisions of Chapter 90.48 RCW Water Pollution Control Laws as amended and the Federal Water Pollution Control Act (The Clean Water Act) Title 33 United States Code, Section 1251 et seq., the enclosed NPDES Permit No. WA-003465-1 is hereby issued to the Port of Seattle - SeaTac International Airport, Seattle, Washington (King County).

The permit authorizes the Permittee to discharge industrial wastewater, non-contact cooling water and storm water to waters subject to the terms and conditions of the permit.

Pursuant to RCW 90.48.465, a permit fee will be assessed. Semi-annual notices for payment will be mailed to you from our office in Olympia.

Any person feeling aggrieved by this NPDES permit may obtain review thereof by application, within 30 days of receipt of this permit, to the Washington Pollution Control Hearings Board, Post Office Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the application must be sent to the Department of Ecology, Post Office Box 47600, Olympia, WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

AR 028290

800
A recycling symbol consisting of three chasing arrows forming a triangle.

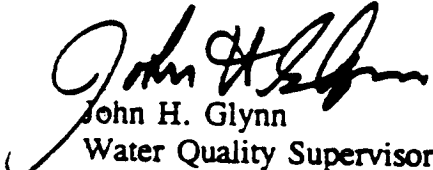
Mr. William Brougher
Port of Seattle
June 30, 1994
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Any appeal must contain the following in accordance with the rules of the hearings board:

- a) The appellant's name and address;
- b) The date and number of the permit appealed;
- c) A description of the substance of the permit, that is the subject of the appeal;
- d) A clear, separate, and concise statement of every error alleged to have been committed;
- e) A clear and concise statement of facts which the requester relies to sustain his or her statements of error; and
- f) A statement setting forth the relief sought.

An application for permit renewal must be made at least 180 days prior to the expiration date of this permit. If at any time during the term of this permit a question should arise regarding the permit or discharge, or if there is a significant change in the discharge or operation, please contact Debbie North at (206) 649-7146.

Sincerely,


John H. Glynn
Water Quality Supervisor
Northwest Regional Office

JHG:CJS:cs
Enclosures

cc: Permit Fee Unit
EPA-WOO, Olympia
Debbie North, Permit Manager
Chris Smith, WPLCS
Central Files

AR 028291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-8711

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.

Port of Seattle
Sea-Tac International Airport
P.O. Box 1209
Seattle, Washington 98111

Facility Location:

Sea-Tac International Airport
Seattle, Washington

Industry Type:

Airport

Water Body I.D. No.:

(i) WA-PS-0270

(ii) WA-09-2000

(iii) WA-09-2005

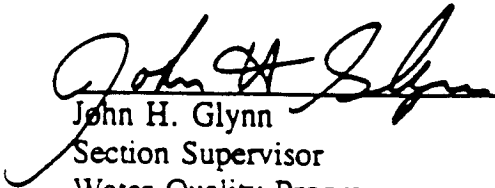
Receiving Water:

(i) Puget Sound (Process Wastewater)

(ii) Des Moines Creek (Non-Contact
Cooling Water and Storm Water)

(iii) Miller Creek (Storm Water)

is authorized to discharge in accordance with
the special and general conditions which follow.


John H. Glynn

Section Supervisor
Water Quality Program
Northwest Regional Office

AR 028292

Discharge Location:

(i) Puget Sound

Outfall 001 Latitude: 47° 24' 12" N
 Longitude: 122° 20' 12" W

(ii) Des Moines Creek

Outfall 002 Latitude: 47° 25' 00" N
(SDE4) Longitude: 122° 17' 57" W

Outfall 003 Latitude: 47° 25' 00" N
(SDS1) Longitude: 122° 18' 00" W

Outfall 004 Latitude: 47° 25' 45" N
(SDS2) Longitude: 122° 18' 55" W

Outfall 005 Latitude: 47° 25' 45" N
(SDS3) Longitude: 122° 18' 45" W

Outfall 009 Latitude: 47° 25' 33" N
(SDS4) Longitude: 122° 18' 20" W

Outfall 010 Latitude: 47° 26' 15" N
(SDW3) Longitude: 122° 19' 00" W

(iii) Miller Creek

Outfall 006 Latitude: 47° 28' 00" N
(SDN1) Longitude: 122° 18' 04" W

Outfall 007 Latitude: 47° 27' 50" N
(SDN2) Longitude: 122° 18' 30" W

Outfall 008 Latitude: 47° 27' 50" N
(SDN3) Longitude: 122° 18' 35" W

(iv) Des Moines Creek and Miller Creek via City of SeaTac storm sewers (Storm Water)

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SUMMARY OF SUBMITTALS

<u>Permit Section</u>	<u>Submittal</u>	<u>Frequency</u>	<u>First Submittal Date</u>
S3.C.1	De-icing Report	Annually	May 1, 1995
S4.A	Discharge Monitoring Report	Monthly	August 15, 1994
S5.A	IWS Engineering Report	Once/permit cycle	On or before December 30, 1995
S5.B	TSS Treatability Engineering Report	Once/permit cycle	January 15, 1995
S5.C	Treatment System Operating Plan	Once/permit cycle	180 days prior to start-up of new IWS
S5.F	Vehicle Washwater Study	Once/permit cycle	On or before December 30, 1994
S5.G	Non-contact Cooling Water Study	Once/permit cycle	On or before June 30, 1997
S6.	Effluent Mixing Study	Once/permit cycle	On or before December 30, 1995
S7.	Sediment Monitoring Plan (Marine)	Once/permit cycle	August 1, 1994
S8.	Receiving Water Monitoring Study	Once/permit cycle	On or before March 30, 1995
	Receiving Water Final Report	Once/permit cycle	On or before June 30, 1997
S9.	Annual Storm Water Monitoring Summary Report	Annually	August 1, 1995
S10.A	Storm Water Pollution Prevention Plan	Once/permit cycle	On or before June 30, 1995

SUMMARY OF SUBMITTALS
(continued)

S12.	Spill Control Plan	Once/permit cycle	On or before June 30, 1995
S14.	Pond Sludge Waste Characterization Study	Once/permit cycle	On or before December 30, 1994
G4.	Noncompliance Notification	As needed	
G17.	Duty to Reapply	Once/permit cycle	December 30, 1996

DEFINITIONS

1. "Best Management Practices" (BMPs) 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: 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.
2. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
3. "Capital Improvements" means the following improvements which will require capital expenditures:
 - A. Treatment BMPs, including but not limited to: biofiltration systems including constructed wetlands; settling basins, oil separation equipment, and detention and retention basins.
 - B. Manufacturing modifications, including process changes for source reduction, if capital expenditures for such modifications are incurred.
 - C. Concrete pads and dikes and appropriate pumping for collection of storm water and transfer to control systems, from manufacturing areas such as loading, unloading, outside processing, fueling and storage of chemicals and equipment and wastes.
 - D. Roofs and appropriate covers for manufacturing areas.
4. "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, 97-117; USC 1251 et seq.
5. "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, or industrial buildings, and demolition activity.
6. "Critical Condition" means 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.

DEFINITIONS

(continued)

7. "Daily Maximum Discharge Limitation" means the greatest allowable value for any calendar day.
8. "Department" means the Washington State Department of Ecology.
9. "Domestic Wastewater" means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments or other places, together with such groundwater infiltration or surface water as may be present.
10. "Engineering Report" means 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.
11. "Erosion" means the wearing away of the land surface by running water, wind ice, or other geological agents, including such processes as gravitational creep.
12. "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. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.
13. "Final Stabilization" means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) which will prevent erosion.
14. "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.
15. "GPM" means gallons per minute.
16. A "Grab" sample is a single sample or measurement taken at a specific time or over as short period of time as is feasible.

DEFINITIONS

(continued)

17. "Industrial Wastewater" means 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.
18. "Industrial Wastewater Facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim or dispose of industrial wastewater.
19. "Leachate" means water or other liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from the waste.
20. "MGD" means million gallons per day.
21. "MG/L" means milligrams per liter.
22. "Monthly Average Discharge Limitation" means the average of the measured values obtained over a calendar month's time.
23. "Operational 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.
24. "Plans and Specifications" means the detailed drawings and specifications used in the construction or modification of domestic or industrial wastewater facilities. Except as otherwise allowed, plans and specifications are preceded by an approved engineering report. For some industrial facilities, final conceptual drawings for all or parts of the system may be substituted for plans and specifications with the permission of the department.
25. "Severe Property Damage" means substantial physical damage to property, damage to the treatment facilities which cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of bypass. Severe property damage does not mean economic loss caused by delays in production.
26. "Site" means the land or water area where any "facility or activity" is physically located or conducted.

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DEFINITIONS

(continued)

27. "Solid Waste" means all putrescible and nonputrescible solid and semisolid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities. This includes all liquid, solid and semisolid materials which are not the product of private, public industrial, commercial mining and agricultural operations. Solid waste includes but is not limited to sludge from wastewater treatment plants and septage, from septic tanks, woodwaste, dangerous waste and problem wastes.
28. "Source Control BMPs" means physical or mechanical devices or facilities that are intended to prevent pollutants from entering storm water. A few examples of source control BMPs are erosion control practices, maintenance of storm water facilities, constructing roofs over storage and working areas, and directing washwater and similar discharges to the sanitary sewer or a dead end sump.
29. "Spill" means an unauthorized, unanticipated discharge of oil, hazardous substance, or wastewater into waters of the state which is not continuous or repeated over time.
30. "Storm Water" 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 storm water drainage system into a defined surface water body, or a constructed infiltration facility.
31. "Treatment BMPs" means BMPs that are intended to remove pollutants from storm water. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.
32. "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, lack of preventative maintenance, or careless or improper operation.
33. "Vehicle" means a device, such as a motor vehicle or a piece of mechanized equipment, for transporting passengers, goods, or apparatus. For the purposes of this permit, "vehicle" does not include aircraft.
34. "Waters of the State" means 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.

SPECIAL CONDITIONS

S1. INTERIM EFFLUENT LIMITATIONS

A. Industrial Wastewater

Beginning on the effective date of this permit and lasting through the date of completion of construction and start up of the Permittee's approved treatment system, as required under Special Condition S5, the Permittee is authorized to discharge treated industrial wastewater to Puget Sound subject to meeting the following limitations:

OUTFALL No. 001 EFFLUENT LIMITATIONS

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Flow		2500 gpm ^a
pH	Within the range of 6.0 to 9.0 Std. Units	
Oil and Grease	8 mg/L	15 mg/L
Total Suspended Solids (TSS)	21 mg/L ^b	33 mg/L

^a The effluent flow rate shall not exceed the Permittee's allocation from the Midway Sewer District of Outfall 001's capacity. If the Permittee's allocation is changed through an agreement with the Midway Sewer District, this limit shall be set at the new allocation. The Permittee shall notify the Department if the agreed allocation changes.

^b The TSS limit will be effective February 1, 1995, unless the Department determines a more appropriate TSS effluent limitation upon approval of the TSS Treatability Study required in Special Condition S5.B.

S2. FINAL EFFLUENT LIMITATIONS

A. Industrial Wastewater

Beginning on the date of completion of construction and start up of the Permittee's approved treatment system as required under Special Condition S5 and lasting through the expiration date, the Permittee is authorized to discharge treated industrial wastewater to Puget Sound subject to meeting the following limitations:

OUTFALL No. 001 EFFLUENT LIMITATIONS

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Flow		2500 gpm ^a
pH	Within the range of 6.0 to 9.0 Std. Units	
Oil and Grease	TBD ^b	TBD ^b
Total Suspended Solids (TSS)	TBD ^b	TBD ^b
Biochemical Oxygen Demand (BOD ₅)	TBD ^b	TBD ^b
Total Ammonia (as N)	TBD ^b	TBD ^b
Polynuclear Aromatic Hydrocarbons (PAHs) ^c	TBD ^b	TBD ^b
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	TBD ^b	TBD ^b
Total Recoverable Phenolics	TBD ^b	TBD ^b
Priority Pollutant Metals	TBD ^b	TBD ^b

^a The effluent flow rate shall not exceed the Permittee's allocation from the Midway Sewer District of Outfall 001's capacity. If the Permittee's allocation is changed through an agreement with the Midway Sewer District, this limit shall be set at the new allocation. The Permittee shall notify the Department if the agreed allocation changes.

S2. FINAL EFFLUENT LIMITATIONS: (continued)

^b Effluent limitations shall be determined by the Department upon completion of the Engineering Report required in Special Condition S5.A. and the Effluent Mixing Study required in Special Condition S6. The effluent limitations shall be set at the most stringent of the following three values:

1. Limitations based on the determination of All Known, Available, and Reasonable Methods of Treatment (AKART).
2. Limitations based on compliance with the Water Quality Standards (Chapter 173-201A WAC).
3. Limitations based on compliance with the Sediment Quality Standards established in the Sediment Management Standards (Chapter 173-204 WAC).

^c PAHs shall mean the sum of following compounds: naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h) anthracene, and benzo(g,h,i)perylene.

B. Non-Contact Cooling Water

Beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to discharge non-contact cooling water to Des Moines Creek subject to meeting the following limitations:

OUTFALL No. 002 EFFLUENT LIMITATIONS

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Flow		28,800 gpd
Temperature	The discharge shall not increase the temperature of Des Moines Creek above 16.0°C. When background conditions exceed 16.0°C, the discharge shall not raise the receiving water temperature by greater than 0.3°C.	

AR 028305

S2. FINAL EFFLUENT LIMITATIONS: (continued)

C. Vehicle Washwater

Beginning on the effective date of this permit, no discharge of vehicle washwater is allowed to enter the storm drain. Vehicle washwater may be discharged to the IWS or to the sanitary sewer.

D. Mixing Zone Description - Outfall 001

The boundaries of the mixing zone for Outfall 001 shall be defined by the Department based upon the findings of the Engineering Report required in Special Condition S5.A and the effluent mixing study required in Special Condition S6. The Permittee shall be required to fully apply all known, available, and reasonable methods of prevention, control and treatment (AKART) prior to the authorization of a mixing zone. The size of the mixing zone and the concentrations of pollutants present in the mixing zone shall be minimized.

S3. TESTING SCHEDULE

A. Industrial Wastewater

The Permittee shall monitor the effluent from the Industrial Wastewater Treatment System (IWS) prior to mixing with the Midway Wastewater Treatment Plant Effluent according to the following schedule:

<u>Test</u>	<u>Sampling Frequency</u>	<u>Sample Type</u>	<u>Test Method^a</u>
Flow	Daily	Continuous	N/A
pH	Weekly	grab	150.1
Oil and Grease	Weekly	grab	413.1
TSS	Weekly	composite ^b	160.2
BOD ₅	Monthly	composite ^b	405.1
Total Ammonia	Monthly	composite ^b	350.2
Total Glycols	Monthly ^c	composite ^b	--- d

S3. TESTING SCHEDULE: (continued)

<u>Test</u>	<u>Sampling Frequency</u>	<u>Sample Type</u>	<u>Test Method^a</u>
BTEX	Monthly	composite ^b	624
Total Petroleum Hydrocarbon (TPH)	Monthly	grab	418.1 mod. ^e
Total Phenolics	Monthly	grab	420.2
Priority Pollutant Scan ^f	Annually	composite ^{b,g}	625 624 608 200 4500-CN I ⁶
Fecal Coliform	Annually	grab	9221 E ^h

^a Method listed refers to "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, EPA-600/4-79-020, March, 1979. See 40 CFR 136.3 (Table IB) for equivalent methods.

^b Composite samples shall be a combination of at least four representative grab samples of a fixed volume collected at equal time intervals throughout the normal working day. Automatically timed composited samples are preferred over manually collected samples.

^c The IWS effluent shall be monitored for both ethylene and propylene glycol once per month immediately following a de-icing event (in any month de-icing occurs).

^d The Permittee shall submit for Department review and approval the laboratory method that will be used to analyze glycol concentrations. The detection limit for the chosen method shall be no greater than 5 mg/L, unless otherwise approved by the Department.

^e Washington Department of Ecology Method WTPH-418.1 Modified.

^f A priority pollutant scan includes: semivolatiles (organic acid extractables and organic base-neutral extractables), volatile organic analysis, pesticides, polychlorinated biphenyls, metals, and cyanide. For a complete list of priority pollutants, see Appendix A. Metals analysis shall be for total recoverable using AA furnace, unless the metal can be quantified using ICP (except Cold Vapor for mercury).

S3. TESTING SCHEDULE: (continued)

^g Volatile organic analysis shall be a grab sample.

^h Method listed refers to the 18th Ed. Standard Methods for the Examination of Water and Wastewater, or as revised.

B. Non-Contact Cooling Water

The Permittee shall monitor the non-contact cooling water discharge according to the following schedule:

<u>Test</u>	<u>Sampling Frequency</u>	<u>Sample Type</u>	<u>Test Method^a</u>	<u>Sampling Location</u>
Flow	monthly	Estimate	N/A	Manhole # SDE4-29
Temperature	monthly	Grab	170.1	Des Moines Creek ^b
Background Temperature	monthly	Grab	170.1	Bow Lake ^c
Copper, dissolved	semi-annually	Grab	220.2	Manhole # SDE4-28
Lead, dissolved	semi-annually	Grab	239.2	Manhole # SDE4-28

^a Method listed refers to "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, EPA-600/4-79-020, March, 1979. See 40 CFR 136.3 (Table IB) for equivalent methods.

^b The sampling location for temperature shall be in the open creek bed of Des Moines Creek where it daylights just west of 24th Ave. S. (down-gradient of where the non-contact cooling water flow joins the creek) at approximately mid-stream depth.

^c The sampling location for background temperature shall be in Bow Lake, just up-gradient to where it flows into the pipe which becomes Des Moines Creek.

S3. TESTING SCHEDULE: (continued)

C. Storm Water

The Permittee shall monitor storm water discharges according to the following monitoring schedule. No monitoring is necessary for reporting periods in which there is no discharge.

All samples shall be collected from the discharge resulting from a storm event greater than 0.25 inches and at least 48 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Exceptions to these requirements may be made with approval of the Department for those periods in which no suitable storm event occurs. The Permittee shall submit the following data for the storm event used: date, duration, the number of dry hours preceding the storm event, total rainfall during the storm event (inches), maximum flow rate during the rain event (gallons per minute), and the total flow from the rain event (gallons).

For pH, oil and grease, total petroleum hydrocarbons, and fecal coliform, a grab sample shall be used (analysis of a flow-weighted composite is not required for these parameters). For all other parameters, a flow-weighted composite sample shall be analyzed.

The flow-weighted composite shall be taken for the entire storm event if it is less than 3 hours or for the first three hours of the event. The flow-weighted composite sample may be taken with a continuous sampler that proportions the amount of sample collected with the flow rate or as a combination of a minimum of three sample aliquots taken each hour of discharge, with each aliquot being at least 100 milliliters and collected with a minimum period of fifteen minutes between aliquot collections. The composite must be flow proportional: either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

S3. TESTING SCHEDULE: (continued)

1. The Permittee shall monitor the storm water discharges at Outfalls 002, 003, 005, 006, 007, 008, and 009 according to the following schedule:

<u>Test</u>	<u>Sampling Frequency</u>	<u>Test Method^a</u>
Flow ^b	daily	N/A
Deicing Events ^c	daily	N/A
pH	quarterly	150.1
Oil and Grease	quarterly	413.1
TSS	quarterly	160.2
Turbidity	quarterly	180.1
Fecal Coliform	quarterly	9221 E ^d
BOD ₅	quarterly	405.1
Total Ammonia	quarterly	350.2S
Total Glycols	quarterly ^e	--- f
Priority Pollutant Metals ^g	quarterly	200
Surfactants	quarterly	425.1
TPH	quarterly	418.1 mod. ^h

^a Method listed refers to "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, EPA-600/4-79-020, March, 1979. See 40 CFR 136.3 (Table IB) for equivalent methods.

^b Daily flow shall be estimated based on daily precipitation measurements and drainage basin surface area. Daily flow shall be reported in gallons per day.

^c All de-icing and anti-icing events of either aircraft or runways shall be reported no later than May 1 of each year, and include the following information: the volumes of each type of de-icing and anti-icing material used each day by the Port and each airline.

3. TESTING SCHEDULE: (continued)

^d Method listed refers to the 18th Ed. Standard Methods for the Examination of Water and Wastewater, or as revised.

^e Glycols shall be measured at least once per quarter at each outfall in every quarter during which de-icing or anti-icing activities have occurred and sampling shall coincide with a de-icing or anti-icing event.

^f The Permittee shall submit for Department review and approval the laboratory method that will be used to analyze glycol concentrations. The detection limit for the chosen method shall be no greater than 5 mg/L, unless otherwise approved by the Department.

^g Metals analysis shall be for total recoverable using AA furnace, unless the metal can be quantified using ICP. Mercury shall be analyzed using Cold Vapor.

^h Washington Department of Ecology Method WTPH-418.1 Modified.

2. The Permittee shall monitor the storm water discharges at Outfalls 004 and 010 according to the following schedule:

<u>Test</u>	<u>Sampling Frequency</u>	<u>Test Method^a</u>
Flow ^b	daily	N/A
pH	annually	150.1
Oil and Grease	annually	413.1
TPH	annually	418.1 mod. ^c
TSS	annually	160.2
Turbidity	annually	180.1
Fecal Coliform	annually	9221 E ^d
BOD ₅	annually	405.1

^a Method listed refers to "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, EPA-600/4-79-020, March, 1979. See 40 CFR 136.3 (Table IB) for equivalent methods.

S3. TESTING SCHEDULE: (continued)

^b Daily flow shall be estimated based on daily precipitation measurements and drainage basin surface area. Daily flow shall be reported in gallons per day.

^c Washington Department of Ecology Method WTPH-418.1 Modified.

^d Method listed refers to the 18th Ed. Standard Methods for the Examination of Water and Wastewater, or as revised.

3. The Permittee shall monitor the storm water discharges to the City of SeaTac storm sewer from the Doug Fox Travel Service Area, the Port Engineering Yard, and the Taxi Yard according to the following schedule:

<u>Test</u>	<u>Sampling Frequency</u>	<u>Test Method^a</u>
pH	quarterly ^b	150.1
Oil and Grease	quarterly ^b	413.1
TSS	quarterly ^b	160.2
Surfactants	quarterly ^b	425.1

^a Method listed refers to "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, EPA-600/4-79-020, March, 1979. See 40 CFR 136.3 (Table IB) for equivalent methods.

^b After reporting a minimum of four sampling events, the Permittee may request that this monitoring requirement be removed from the testing schedule. On approval of the Department, this requirement will be removed from the testing schedule.

S4. MONITORING AND REPORTING

The Permittee shall monitor the parameters as specified in Condition S3 of this permit.

A. Reporting

Discharge Monitoring Reports (DMRs) shall be submitted monthly. Monitoring results obtained during the previous month shall be summarized and reported on a form provided, or otherwise approved, by the Department, to be submitted no later than the 15th day of the month following the completed reporting period. Priority pollutant analysis and biomonitoring data may be submitted 30 days following the completed reporting period if requested by the Permittee and approved by the Department. The report(s) shall be sent to the Department of Ecology, Northwest Regional Office, 3190 160th Ave. S.E., Bellevue, Washington 98008-5452.

The Permittee shall submit three copies of each report required by this permit to the Department, with the exception of DMRs.

B. Records Retention

The Permittee shall retain for a minimum of three (3) years all records of monitoring activities and results, including all reports of recordings from continuous monitoring instrumentation. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by the Director.

C. Recording of Results

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place and time of sampling; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Representative Sampling

Samples and measurements taken to meet the requirements of this condition shall be representative of the volume and nature of the monitored discharge, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets and maintenance-related conditions affecting effluent quality.

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S4. MONITORING AND REPORTING: (continued)

E. Test Procedures

All sampling and analytical methods used to meet the monitoring requirements specified in this permit shall, unless approved otherwise in writing by the Department, conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants, contained in 40 CFR Part 136.

F. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations or at a minimum frequency of at least one calibration per year.

G. Laboratory Accreditation

All monitoring data, except flow, temperature, and internal process control parameters, shall be prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC. Soils and hazardous waste data are exempted from this requirement pending certification of laboratories for analysis of these media by the Department.

H. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit (S3) the monitoring should be done using acceptable test procedures and the results of this monitoring shall be included in the Permittee's self-monitoring reports.

I. Signatory Requirements

All applications, reports, or information submitted to the Department shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer of at least the level of vice president of a corporation, a general partner of a partnership, or the proprietor of a sole proprietorship. For the Port of Seattle, the Managing Director of the Airport Division is hereby designated an appropriate person for signing permit applications.

S4. MONITORING AND REPORTING: (continued)

2. All reports required by this permit and other information requested by the Department 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:
 - a. The authorization is made in writing by a person described above and submitted to the Department, and
 - b. 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. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
3. Changes to authorization. If an authorization under paragraph I.2.b 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 I.2.b must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. 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 willful violations."

J. Reporting - Shellfish Protection

Unauthorized discharges such as collection system overflows or plant bypasses shall be reported immediately to the Department of Ecology and the Department of Health, Shellfish Program. The Department's 24-hour number is 206-649-7000 and the Department of Health Shellfish 24-hour number is 206-753-5992.

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S4. MONITORING AND REPORTING: (continued)

K. Reporting - Sediment Quality Data

Sediment quality data shall be reported according to the format given in Puget Sound Ambient Monitoring Program Data Transfer Formats, Version 2, or modifications thereof.

S5. COMPLIANCE SCHEDULE

A. Industrial Wastewater Treatment

The Permittee shall comply with the following schedule:

No later than eighteen (18) months after the effective date of this permit, the Permittee shall submit to the Department an engineering report for review and approval describing plant modifications and/or additional wastewater treatment necessary for the Department to determine AKART. Any conditions of approval identified in the engineering report, including a modified monitoring program, shall become an enforceable part of this permit.

The engineering report shall be consistent with all the requirements of Chapter 173-240 WAC. The engineering report shall review all possible treatment technologies, shall quantify the expected concentration of pollutants from each identified treatment, shall detail the cost of each identified treatment, and shall list all other environmental factors associated with each treatment method. Fire control foam disposal shall be considered in the analysis. The engineering report shall also include a schedule for project design, construction, and startup. Upon approval, this schedule shall become an enforceable part of this permit.

If the Permittee believes they cannot afford the selected alternative then a plant-level economic achievability test shall be conducted. Within thirty (30) days of the Department's approval of the engineering report, the Permittee shall submit the cost, earnings, and revenue data needed to perform the economic achievability test.

B. TSS Treatability Engineering Report

The Permittee shall submit to the Department an engineering report which determines the relationship between the Dissolved Air Flotation (DAF) hydraulic loading rate, other DAF operating parameters, and effluent TSS on or before January 15, 1995. The results from this report will be used by the Department to determine the appropriate TSS interim effluent limitation required in Special Condition S1.A.

S5. COMPLIANCE SCHEDULE: (continued)

C. Treatment System Operating Plan

Wastewater treatment systems shall be operated according to procedures and criteria described in an approved operating plan. The operating plan for the improved industrial wastewater treatment facility shall be submitted to the Department for review and approval at least 180 days prior to start up of the facility.

The plan shall include, but is not limited to, the following:

A baseline operating condition which describes the operating parameters and procedures used to meet effluent limitations.

In the event of production levels which are below the baseline levels used to establish these limitations, the plan shall describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting shall be described in the plan.

A description of any regularly scheduled maintenance or repair activities at the permitted facility which would affect the volume or character of the wastes discharged; a list including quantities or chemical compositions of any maintenance-related substances (such as cleaners, degreasers, solvents, etc.) that will be discharged, and a plan for monitoring and treating/controlling the discharge of maintenance-related materials.

D. Whole Effluent Toxicity - Industrial Wastewater Discharge

Industrial wastewater treatment system effluent characterization for whole effluent toxicity, as required by the Whole Effluent Toxicity Testing and Limits Rule (Chapter 173-205 WAC), shall be implemented upon completion of startup of the new industrial wastewater treatment facility required in Special Condition S.5.A. The requirements for compliance with Chapter 173-205 WAC are located in Appendix B.

E. Whole Effluent Toxicity - Storm Water Discharge

Storm water characterization for whole effluent toxicity, as required by the Whole Effluent Toxicity Testing and Limits Rule (Chapter 173-205 WAC), shall be implemented upon the completion of the implementation of the Storm Water Pollution Prevention Plan required in Special Condition S.10. The requirements for compliance with Chapter 173-205 WAC are located in Appendix B.

S5. COMPLIANCE SCHEDULE: (continued)

F. Vehicle Washwater

Within six (6) months of the issuance date of this permit, the Permittee shall submit a report to the Department investigating the feasibility of converting all vehicle washwater discharges to closed-loop, no discharge systems.

G. Non-Contact Cooling Water

Prior to the expiration date of this permit, the Permittee shall submit a report to the Department investigating the feasibility of converting all non-contact cooling water discharge to a closed-loop, no discharge system.

S6. EFFLUENT MIXING STUDY

A. Requirements

Within eighteen (18) months of permit issuance, the Permittee shall determine the degree of industrial wastewater treatment system effluent, Midway Sewer District effluent and receiving water mixing which occurs in the vicinity of the Midway Sewer District outfall. The degree of mixing shall be determined during critical receiving water conditions or as close to predicted critical conditions as reasonably possible and approved by the Department. The critical period for an estuarine discharge is either the period of maximum stratification or period of minimum stratification and low tidal flux. The critical period for estuaries is determined by methods given in Technical Support Document for Water Quality-based Toxics Control EPA/505/2-90-001. The dilution ratio shall be measured in the field with dye or other tracers using study protocols specified in this section or others approved by the Department. The use of models is an acceptable alternative or adjunct to a tracer study if the following conditions are met:

1. The diffuser is visually inspected for integrity or the diffuser has been recently tested for performance by the use of tracers.
2. The critical ambient conditions necessary for model input are known or will be established with field studies.
3. The recommended models are UM, RSB, and CORMIX.

S6. EFFLUENT MIXING STUDY: (continued)

The use of mixing zone models is also required if it is not feasible to conduct tracer studies during periods of critical ambient and effluent conditions and conditions a., b., and c. above are met. It is expected that computer modeling will be necessary to define the mixing within the zone of acute compliance, if one has been authorized. The mixing data will be applied to the industrial wastewater treatment system effluent data supplied in the Engineering Report required by Special Condition S5 to determine the need for and size of the dilution zone defined in Special Condition S2.D.

B. Reporting Requirements

If the Permittee has information on the background physical conditions or background concentration of chemical substances (for which there are criteria in WAC 173-201A) in the receiving water, this information shall be submitted to the Department as part of the Effluent Mixing Report. If the results of the effluent mixing study, toxicity tests, and chemical analysis indicate that the concentration of any pollutant(s) exceeds or has a reasonable potential to exceed the State Water Quality Standards, Chapter 173-201A WAC, the Department may issue a regulatory order to require a reduction of pollutants to meet water quality standards.

The Permittee shall use some method of fixing and reporting the location of the outfall (i.e., triangulation off the shore, microwave navigation system, or using Loran or Global Positioning System (GPS) coordinates). The method of fixing station location and the actual station locations shall be identified in the report.

The Permittee shall notify the Department of Ecology at least 24 hours prior to conducting dye tests.

C. Protocols

The Permittee shall determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by the Department:

- Akar, P.J. and Jirka, G.H. 1990. *Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges*. USEPA Environmental Research Laboratory, Athens, GA. Draft, July 1990.

S8. **STORM WATER RECEIVING ENVIRONMENT MONITORING PLAN**

Within nine (9) months of the permit issuance date, the Permittee shall submit to the Department for review and approval a Storm Water Receiving Environment Monitoring Plan. The purpose of the plan shall be to determine the impact of the storm water discharges on Miller and Des Moines Creeks. The Permittee shall submit a report on the monitoring results prior to the expiration date of this permit.

A. Receiving Water Environment Issues

The Monitoring Plan shall address at minimum the following issues:

1. **Instream Toxicity**

The Permittee shall conduct whole effluent toxicity (WET) testing in Miller and Des Moines Creeks, upstream and downstream of the storm water discharges, at least two times per year when there is a storm event and discharge is occurring, for each year of the permit.

2. **Sediments**

The Plan shall include a study to determine the impacts of the storm water discharges on the sediment quality of Miller and Des Moines Creeks.

3. **Identify other Sources of Pollutants**

The Plan shall identify other sources of pollutants entering the creeks in the vicinity of the Permittee's storm water outfalls that could be adversely affecting the receiving water.

4. **Metals Speciation**

The Plan shall include a study to determine the amount of cadmium, copper, lead, nickel, silver, and zinc in the storm water discharge that are released as dissolved metal in the ambient waters.

Those metals which are not present in the receiving water at detectable levels, using ultra-clean sampling methods and the most sensitive analytical method available, may be excluded from the speciation study.

S6. EFFLUENT MIXING STUDY: (continued)

- Baumgartner, D.J., W.E. Frick, P.J., W. Roberts, and C.A. Bodeen, 1993. *Dilution Models for Effluent Discharges*. USEPA. Pacific Ecosystems Branch, Newport, OR.
- Doneker, R.L. and Jirka, G.H. 1990. *Cormix1: An expert system for Hydrodynamic mixing zone analysis of Conventional and Toxic Submerged Single Port Discharges*. USEPA, Environmental Research Laboratory, Athens, GA. EPA/600-3-90/012.
- Kilpatrick, F.A. and E.D. Cobb. 1985. Measurement of Discharge Using Tracers. Chapter A16. *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics*. USGS, U.S. Department of the Interior. Reston, VA.
- Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick. 1986. Fluorometric Procedures for Dye Tracing. Chapter A12. *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics*. USGS, U.S. Department of the Interior. Reston, VA.
- Yearsley, J. 1991. *Diffusion in near-shore and riverine environments*. USEPA Region 10. EPA 910/9-87-168.

S7. SEDIMENT MONITORING (MARINE)

The Permittee shall submit to the Department for review and approval a comprehensive, site-specific Sediment Baseline Sampling and Analysis Plan for Outfall 001 by January 1, 1995. The Permittee may either cooperate with the Midway Sewer District to perform this baseline study or conduct its own study. Following Department approval of the plan, sampling and analysis for sediment chemistry shall be conducted, as needed, during March or April of 1995.

The comprehensive site-specific baseline sampling and analysis plan shall address the requirements specified for the chemical and biological studies in Chapter 173-204 WAC, even though only the chemical studies may be required. If the sampling and analysis for chemical concentrations exceed the applicable sediment quality criteria of Chapter 173-204 WAC, then the Permittee shall conduct biological testing. The chemical and biological studies may be conducted simultaneously. A written report of the results of the chemical analysis and any biological testing conducted shall be submitted to Ecology by September 1, 1996. An additional copy of the report shall be sent to the Department of Natural Resources, Division of Aquatic Lands, P.O. Box 47027, Olympia, WA 98504-7027.

**S8. STORM WATER RECEIVING ENVIRONMENT MONITORING PLAN:
(continued)**

2. Preparation for Each Sampling Event

The Plan shall discuss the preparation for each type of sampling event, including the following:

- a. Pre-sampling activities.
- b. Sample identification.
- c. Sample documentation.
- d. Calibration of field equipment.
- e. Decontamination of sampling equipment.
- f. Sample containers.

3. Sample Collection Procedures

The Plan shall discuss the sampling procedure, including:

- a. Field parameters.
- b. Sample filtration and preservation.
- c. Special handling requirements.

4. Sample Management Procedures

The Plan shall discuss sample handling procedures, including:

- a. Chain of custody requirements.
- b. Sample holding times.
- c. Shipping/transportation requirements.

S8. STORM WATER RECEIVING ENVIRONMENT MONITORING PLAN
(Continued)

5. Vegetation Management

The Plan shall address vegetation management and the relationship between vegetation on the banks and TSS and temperature effects along the stretches of both creeks which receive storm water runoff from the airport.

6. Streambank Erosion

The Plan shall address the effects of the storm water discharges on streambank erosion.

B. General Requirements

The Receiving Environment Monitoring Study shall contain the following elements:

1. Sample Locations, Parameters, and Quality Assurance

- a. Sample locations shall be indicated on a figure which shows the locations of the sampling points and the locations of the storm water outfalls. Background (upstream) and downstream sample locations in both Miller and Des Moines Creeks shall be included.
- b. The parameters to be analyzed, the analytical method number and the frequency of analyses shall be indicated. All analytical methods used to meet the monitoring requirements specified in this permit shall, unless approved otherwise by the Department, conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants, contained in 40 Code of Federal Regulations, Part 136.
- c. Quality assurance samples such as field duplicates, trip blanks, laboratory QA aliquots, and equipment blanks shall be included.

S10. STORM WATER POLLUTION PREVENTION PLAN: (continued)

are inadequate, the SWPPP shall be modified, as appropriate, within two (2) weeks of such determination. The proposed modifications to the SWPPP shall be submitted to the Department at least 30 days in advance of implementing the proposed changes in the plan unless the Department approves immediate implementation. The Permittee shall provide for implementation of any modifications to the SWPPP in a timely manner.

3. The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into the SWPPP become enforceable requirements of this permit.
4. The SWPPP shall contain the following elements:
 - a. An assessment and description of existing and potential pollutant sources, including:
 1. A site map showing the storm water conveyance and discharge structures, an outline of the storm water drainage areas for each storm water discharge point (including discharges to ground water), paved areas and buildings, areas of pollutant contact (actual or potential), surface water locations, areas of existing and potential soil erosion, areas of solid waste storage, and vehicle service areas, and areas of pesticide/herbicide use.
 2. A list of pollutants that have a reasonable potential to be present in storm water discharges and a determination, or an estimate, of the annual quantities of these pollutants in the storm water discharges, including pesticides and/or herbicides used.
 - b. A description of operational BMPs,
 - c. A description of selected source-control BMPs,
 - d. A description of erosion and sediment control BMPs,
 - e. A description of selected treatment BMPs, and
 - f. An implementation schedule.

S9. ANNUAL STORM WATER MONITORING SUMMARY REPORT

On or before August 1 of each year of this permit cycle, the Permittee shall submit a report to the Department summarizing the storm water monitoring results obtained during the preceding twelve (12) month period from July 1 through June 30.

The report shall present the analytical data, the Port's conclusions as to what is being learned from the data, and any new initiatives to be undertaken as part of the Storm Water Pollution Prevention Plan required in condition S10.

S10. STORM WATER POLLUTION PREVENTION PLAN

A. Plan Development Deadlines

The Permittee shall develop, implement, and comply with a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the following schedule:

1. Within twelve (12) months of the issuance date of this permit, submit a SWPPP to the Department for review and approval.
2. Within twenty four (24) months of the issuance date of this permit, complete the implementation of operational BMPs and applicable source control BMPs, as required under this Special Condition, which do not require capital improvements.
3. Prior to the expiration date of this permit, complete the implementation of BMPs requiring capital improvements.

B. General Requirements

1. Submission, Retention and Availability:

The Permittee shall submit a copy of the SWPPP to the Department for review and approval within twelve (12) months of the issuance date of this permit. The Permittee shall also submit that portion of the SWPPP which addresses the discharge to the City of SeaTac storm water system to the City of SeaTac. The SWPPP and all of its modifications shall be signed in accordance with Special Condition S4.I. The SWPPP shall be retained on-site or within reasonable access to the site.

2. Modifications:

The Permittee shall modify the SWPPP whenever there is an alteration of airfield facilities or their design, construction, operation or maintenance which causes the SWPPP to be less effective in controlling pollutants. Whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the SWPPP

S10. STORM WATER POLLUTION PREVENTION PLAN: (continued)

C. Implementation

The Permittee shall conduct two inspections per year: one during the wet season (October 1 - April 30) and the other during the dry season (May 1 - September 30).

1. The wet season inspection shall be conducted during a rainfall event by personnel named in the SWPPP. The objectives of the wet season inspection shall be to verify that:
 - the description of potential pollutant sources required under this permit is accurate,
 - the site map as required in the SWPPP has been updated or otherwise modified to reflect current conditions, and
 - the controls to reduce pollutants in storm water discharges associated with industrial activity identified in the SWPPP are being implemented and are adequate.

The wet-weather inspection shall include observations of the presence of floating materials, suspended solids, oil sheen, discolorations, turbidity, or odor in the storm water discharges.

2. The dry season inspection shall be conducted by personnel named in the SWPPP. The dry season inspection shall determine the presence of unpermitted non-storm water discharges such as domestic wastewater, non-contact cooling water or process wastewater to the storm water drainage system. If an unpermitted, non-storm water discharge is discovered, the Permittee shall immediately notify the Department.

S11. CONSTRUCTION EROSION AND SEDIMENT CONTROL

The Permittee shall develop and implement a Construction Erosion and Sediment Control Plan prior to the commencement of any construction activity which disturbs five (5) or more acres of total land area (or other minimum land area to be determined by federal regulation). Construction activities included in this requirement include clearing, grading, filling and excavation activities except operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale.

S11. CONSTRUCTION EROSION AND SEDIMENT CONTROL (Continued)

A. General Requirements

1. The Permittee shall be responsible for the implementation of a Construction Erosion and Sediment Control Plan (CESCP). The CESCP shall be prepared sufficiently in advance of construction to allow the contractor sufficient time to plan the implementation of the CESCP.

The Permittee shall be responsible for the implementation of a CESCP at construction sites for which a lease, easement, or other use agreement has been obtained from the Permittee.

2. The Permittee shall designate a contact person who will be available twenty-four hours a day to respond to emergencies and to inquiries or directives from the Department. The contact person shall have authority over the CESCP implementation.
3. The Permittee shall retain the CESCP on-site or within reasonable access to the site and make it available upon request to the Department and local governmental agencies with jurisdiction. If storm water is discharged to a municipal storm sewer system, the CESCP shall be available to the municipality upon request.
4. The Permittee shall retain the CESCP, inspection reports and all other reports required by this Special Condition for at least three years after the date of final stabilization of the construction site. The Permittee shall make these documents available upon request to the Department and to local governmental agencies with jurisdiction.

B. CESCP Plan Contents and Requirements

The Construction Erosion and Sediment Control Plan (CESCP) shall describe stabilization and structural practices, both of which shall be implemented to minimize erosion and the transport of sediments.

1. Stabilization Practices

The CESCP shall include a description of stabilization Best Management Practices (BMPs), including site-specific scheduling of the implementation of the practices. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the plan.

S11. CONSTRUCTION EROSION AND SEDIMENT CONTROL (Continued)

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased. The plan shall ensure that the following requirements are satisfied:

- a. All exposed and unworked soils shall be stabilized by suitable and timely application of BMPs.
- b. Existing vegetation should be preserved where attainable. In the field, mark areas which are not to be disturbed, including setbacks, sensitive/critical areas and their buffers, trees, and drainage courses.
- c. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes shall be stabilized in accordance with requirement 1. above.
- d. Stabilization adequate to prevent erosion of outlets and adjacent stream banks shall be provided at the outlets of all conveyance systems.
- e. All storm drain inlets made operable during construction shall be properly maintained.
- f. Wherever construction vehicle access routes intersect paved roads, provisions must be made to minimize the transport of sediment (mud) onto the paved road. If sediment is transported onto a road surface, the roads adjacent to the construction site shall be cleaned on a regular basis. Street washing shall be allowed only after other methods to prevent the transport or to remove the sediments are unsuccessful.

2. Structural Practices

In addition to stabilization practices, the CЕССР shall include a description of structural BMPs to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and sediment basins.

S11. CONSTRUCTION EROSION AND SEDIMENT CONTROL (Continued)

Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the Federal Clean Water Act. The plan shall ensure that the following requirements are satisfied:

- a. Prior to leaving the site, storm water runoff shall pass through a sediment pond, sediment trap, or other appropriate BMPs.
- b. Properties adjacent to the project site shall be protected from sediment deposition.
- c. Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site shall be constructed as a first step in grading. These BMPs shall be functional before land disturbing activities take place. Earthen structures used for sediment control such as dams, dikes, and diversions shall be stabilized as soon as possible.
- d. Properties and water ways downstream from the construction site shall be protected from erosion due to increase in storm water runoff from the site.
- e. 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. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal shall be permanently stabilized.

3. Selection of Stabilization and Structural BMPs

The Permittee shall select from BMPs described in Volume II of the Department's Stormwater Management Manual for the Puget Sound Basin (SWMM) or other equivalent and appropriate BMPs to comply with the requirements listed in subsections 1. and 2. above.

4. Format

The CЕСP shall consist of two parts: a narrative and a set of site plans. The Permittee may refer to Chapter II-4 of the Department's SWMM for guidance on the content and format.

S11. CONSTRUCTION EROSION AND SEDIMENT CONTROL (Continued)

C. Inspection and Maintenance

All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. All on-site erosion and sediment control measures shall be inspected at least once every seven days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24 hour period. An inspection report file shall be maintained.

D. Control of Pollutants Other than Sediment on Construction Sites

All pollutants other than sediment that occur on-site during construction shall be handled and disposed of in a manner that does not cause contamination of storm water. All industrial wastewater shall be disposed of in the industrial wastewater treatment system.

E. Coordination with Local Requirements

This permit does not relieve the Permittee of compliance with any more stringent requirements of any local government which may have duly authorized jurisdiction over the Port of Seattle. As required by the Puget Sound Water Quality Management Plan, local governments within the Puget Sound Basin are required to adopt minimum requirements for construction which are at least equivalent to the 15 minimum requirements listed in Chapter I-2 of the Department's SWMM. Where the Department has determined such local requirements to be equivalent, compliance with the local requirements meets the requirements of this permit.

S12. SPILL PLAN

Within twelve (12) months after the issuance date of the permit, the Permittee shall submit to the Department a spill control plan for the prevention, containment, and control of spills or unplanned discharges of: 1) oil and petroleum products, 2) materials, which when spilled, or otherwise released into the environment, are designated Dangerous (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070, or 3) other materials which may become pollutants or cause pollution upon reaching state's waters.

The spill control plan shall include the following:

- A. A description of the reporting system which will be used to alert responsible managers and legal authorities in the event of a spill.

S12. SPILL PLAN: (continued)

- B. A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
- C. A list of all oil and chemicals used, processed, or stored at the facility which may be spilled into waters of the state.

For purposes of meeting this requirement, plans and manuals required by 40 CFR Part 112 or contingency plans required by Chapter 173-303 WAC may be submitted.

The spill plan shall be updated as needed. The plan and any supplements shall be followed throughout the term of the permit.

S13. SOLID WASTE DISPOSAL

A. Residual Solids Handling

The Permittee shall handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

B. Leachate

The Permittee shall not permit leachate from their solid waste material to enter state ground or surface waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause any adverse effect on state ground or surface waters. The Permittee shall apply for a permit or permit modification as may be required for such discharges.

S14. POND SLUDGE WASTE CHARACTERIZATION AND TREATMENT/DISPOSAL PLAN

No later than six (6) months after the effective date of this permit, the Permittee shall provide to the Department a storm water pond sludge waste characterization and treatment/disposal plan for review and approval. This plan shall include a schedule for sludge treatment and/or disposal. Upon approval, this schedule shall become an enforceable part of this permit.

S15. STORM WATER BYPASS PROHIBITED

The intentional bypass of storm water from all or any portion of a storm water treatment system whenever the design capacity of the treatment system is not exceeded, is prohibited unless the following conditions are met:

S15. STORM WATER BYPASS PROHIBITED: (continued)

- A. Bypass is: 1) unavoidable to prevent loss of life, personal injury, or severe property damage; or 2) necessary to perform construction or maintenance-related activities essential to meet the requirements of the Clean Water Act and authorized by administrative order; and
- B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated storm water, maintenance during normal periods of equipment down time, or temporary reduction or termination of production.

GENERAL CONDITIONS

G1. Discharge Violations:

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a concentration in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

G2. Proper Operation and Maintenance:

The Permittee shall at all times properly operate and maintain all facilities and systems of collection, treatment, and control (and related appurtenances) which are installed or used by the Permittee for pollution control.

G3. Reduced Production for Compliance:

The Permittee, in order to maintain compliance with its permit, shall control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G4. Non-compliance Notification:

If for any reason, the Permittee does not comply with, or will be unable to comply with, any of the discharge limitations or other conditions specified in the permit, the Permittee shall, at a minimum, provide the Department with the following information:

- A. A description of the nature and cause of non-compliance, including the quantity and quality of any unauthorized waste discharges;
- B. The period of non-compliance, including exact dates and times and/or the anticipated time when the Permittee will return to compliance; and
- C. The steps taken, or to be taken, to reduce, eliminate, and prevent recurrence of the non-compliance.

In addition, the Permittee shall take immediate action to stop, contain, and clean up any unauthorized discharges and take all reasonable steps to minimize any adverse impacts to waters of the state and correct the problem. The Permittee shall notify the Department by telephone so that an investigation can be made to evaluate any resulting impacts and the corrective actions taken to determine if additional action should be taken.

G4. Non-compliance Notification: (continued)

In the case of any discharge subject to any applicable toxic pollutant effluent standard under Section 307(a) of the Clean Water Act, or which could constitute a threat to human health, welfare, or the environment, 40 CFR Part 122 requires that the information specified in Sections G4.A., G4.B., and G4.C., above, shall be provided not later than 24 hours from the time the Permittee becomes aware of the circumstances. If this information is provided orally, a written submission covering these points shall be provided within five days of the time the Permittee becomes aware of the circumstances, unless the Department waives or extends this requirement on a case-by-case basis.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the conditions of this permit or the resulting liability for failure to comply.

G5. Bypass Prohibited:

The intentional bypass of wastes from all or any portion of a treatment works is prohibited unless the following four conditions are met:

- A. Bypass is: (1) unavoidable to prevent loss of life, personal injury, or severe property damage; or (2) necessary to perform construction or maintenance-related activities essential to meet the requirements of the Clean Water Act and authorized by administrative order;
- B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment down time, or temporary reduction or termination of production;
- C. The Permittee submits notice of an unanticipated bypass to the Department in accordance with Condition G4. Where the Permittee knows or should have known in advance of the need for a bypass, this prior notification shall be submitted for approval to the Department, if possible, at least 30 days before the date of bypass (or longer if specified in the special conditions);
- D. The bypass is allowed under conditions determined to be necessary by the Department to minimize any adverse effects. The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible.

G5. Bypass Prohibited: (continued)

"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. After consideration of the factors above and the adverse effects of the proposed bypass, the Department will approve or deny the request. Approval of a request to bypass will be by administrative order under RCW 90.48.120.

G6. Right of Entry:

The Permittee shall allow an authorized representative of the Department, 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 must be kept under the terms and conditions of this permit;
- B. To have access to and copy at reasonable times any records that must be kept under the terms of the permit;
- C. To inspect at reasonable times any monitoring equipment or method of monitoring required in the permit;
- D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and
- E. To sample at reasonable times any discharge of pollutants.

G7. Permit Modifications:

The Permittee shall submit a new application or supplement to the previous application where facility expansions, production increases, or process modifications will (1) result in new or substantially increased discharges of pollutants or a change in the nature of the discharge of pollutants, or (2) violate the terms and conditions of this permit.

G8. Permit Modified or Revoked:

After notice and opportunity for public hearing, this permit may be modified, terminated, or revoked during its term for cause as follows:

G8. Permit Modified or Revoked: (continued)

- A. Violation of any terms or conditions of the permit;
- B. Failure of the Permittee to disclose fully all relevant facts or misrepresentations of any relevant facts by the Permittee during the permit issuance process;
- C. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit;
- D. Information indicating that the permitted discharge poses a threat to human health or welfare;
- E. A change in ownership or control of the source; or
- F. Other causes listed in 40 CFR 122.62 and 122.63.

Permit modification, revocation and reissuance, or termination may be initiated by the Department or requested by any interested person.

G9. Reporting a Cause for Modification:

A Permittee who knows or has reason to believe that any activity has occurred or will occur which would constitute cause for modification or revocation and reissuance under Condition G8 or 40 CFR 122.62 must report such plans, or such information, to the Department so that a decision can be made on whether action to modify or revoke and reissue a permit will be required. The Department may then require submission of a new application. Submission of such application does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G10. Toxic Pollutants:

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation upon such pollutant in the permit, the Department shall institute proceedings to modify or revoke and reissue the permit to conform to the new toxic effluent standard or prohibition.

G11. Plan Review Required:

Prior to constructing or modifying any wastewater control facilities, detailed plans shall be submitted to the Department for approval in accordance with Chapter 173-240 WAC. Facilities shall be constructed and operated in accordance with the approved plan.

G12. Other Requirements of 40 CFR:

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G13. Compliance With Other Laws and Statutes:

Nothing in the permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G14. Additional Monitoring:

The Department may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G15. Revocation for Non-Payment of Fees:

The Department may revoke this permit if the permit fees established under Chapter 173-224 WAC are not paid.

G16. Removed Substances:

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to waters of the state.

G17. Duty to Reapply:

The Permittee must reapply, for permit renewal, at least 180 days prior to the specified expiration date of this permit.

APPENDIX A - PRIORITY POLLUTANTS

Volatile Compounds

Acrolein	Vinyl Chloride
Benzene	Acrylonitrile
Carbon Tetrachloride	Bromoform
Chlorodibromomethane	Chlorobenzene
2-Chloroethylvinyl Ether	Chloroethane
Dichlorobromomethane	Chloroform
1,2-Dichloroethane	1,1-Dichloroethane
1,2-Dichloropropane	1,1-Dichloroethylene
Ethylbenzene	1,3-Dichloropropylene
Methyl Chloride	Methyl Bromide
1,1,2,2-Tetrachloroethane	Methylene Chloride
Toluene	Tetrachloroethylene
1,1,1-Trichloroethane	1,2-Trans-Dichloroethylene
Trichloroethylene	1,1,2-Trichloroethane

Acid Compounds

Chlorophenol	2,4-Dichlorophenol
2,4-Dimethylphenol	4,6-Dinitro-O-Cresol
2,4-Dinitrophenol	2-Nitrophenol
4-Nitrophenol	P-Chloro-M-Cresol
Pentachlorophenol	Phenol
2,4,6-Trichlorophenol	

Base/Neutral Compounds

Acenaphthene	Acenaphthylene
Anthracene	Benzidine
Benzo(a)Anthracene	Benzo(a)pyrene
Benzo(b)Fluoranthene	Benzo(ghi)Perylene
Benzo(k)Fluoranthene	Bis(2-Chloroethoxy)Methane
Bis(2-Chloroethyl)Ether	Bis(2-Chloroisopropyl)Ether
Bis(Chloromethyl)Ether	4-Bromophenyl Phenyl Ether
Bis(2-Ethylhexyl)Phthalate	2-Chloronaphthalene
Butyl Benzyl Phthalate	Chrysene
4-Chlorophenyl Phenyl Ether	1,2-Dichlorobenzene
Dibenzo(a,h)Anthracene	1,4-Dichlorobenzene
1,3-Dichlorobenzene	Diethyl Phthalate
3,3-Dichlorobenzidine	Di-N-Butyl Phthalate
Dimethyl Phthalate	2,6-Dinitrotoluene
2,4-Dinitrotoluene	1,2-Diphenylhydrazine (as Azobenzene)

Base/Neutral Compounds

Di-N-Octyl-Phthalate	Hexachlorobenzene
Fluoranthene	Hexachlorocyclopentadiene
Fluorene	Indeno(1,2,3-cd)Pyrene
Hexachlorobutadiene	Naphthalene
Hexachloroethane	N-Nitrosodimethylamine
Isophorone	N-Nitrosodiphenylamine
Nitrobenzene	Pyrene
N-Nitrosodi-N-Propylamine	1,2,4-Trichlorobenzene
Phenanthrene	

Pesticides and PCBs

Aldrin	Gamma-BHC
Alpha-BHC	Delta-BHC
Beta-BHC	Chlordane
4,4'-DDT	4,4'-DDE
4,4'-DDD	Dieldrin
Alpha-Endosulfan	Beta-Endosulfan
Endosulfan Sulfate	Endrin
Endrin Aldehyde	Heptachlor
Heptachlor Epoxide	PCB-1242
PCB-1254	PCB-1221
PCB-1232	PCB-1248
PCB-1260	PCB-1016
Toxaphene	

Metals and Cyanide

Antimony	Arsenic
Beryllium	Cadmium
Chromium	Copper
Lead	Mercury
Nickel	Selenium
Silver	Thallium
Zinc	Cyanide

Miscellaneous

2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)
Asbestos

APPENDIX B - WHOLE EFFLUENT TOXICITY REQUIREMENTS

I. ACUTE TOXICITY

The Permittee shall conduct all testing and reporting required in subsection A Effluent Characterization and then shall make the determination required in subsection B Effluent Limit for Acute Toxicity.

If subsection B requires an effluent limit for acute toxicity then subsection C Compliance Monitoring, subsection D Response to Noncompliance, and subsection E Toxicity Identification/Reduction Evaluations are also requirements of this permit and the Permittee shall conduct all applicable compliance monitoring activities and toxicity reduction activities in those subsections.

If subsection B does not require an effluent limit for acute toxicity then subsections C, D, and E are not requirements of this permit. However, subsection F Monitoring When There Is No Permit Limit for Acute Toxicity is a requirement of this permit and the Permittee shall conduct all activities in this subsection.

Subsection G Sampling and Reporting Requirements applies to all testing in this Section.

A. Effluent Characterization

The Permittee shall conduct acute toxicity testing on the final effluent to determine the presence and amount of acute (lethal) toxicity. All of the acute toxicity tests listed below shall be conducted on each sample taken for effluent characterization.

Effluent characterization for acute toxicity shall be conducted quarterly for one year. Acute toxicity testing shall follow protocols, monitoring requirements, and quality assurance/quality control procedures specified in this Section. A dilution series consisting of a minimum of five concentrations and a control shall be used to estimate the concentration lethal to 50% of the organisms (LC₅₀). The percent survival in 100% effluent shall also be reported.

Testing shall begin within 60 days of the startup of the new or improved industrial wastewater treatment system. A written report shall be submitted to the Department within 60 days after each of the test results are final. A final effluent characterization summary report shall be submitted to the Department within 90 days after the last monitoring test results are final. This summary report shall include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

Acute toxicity tests shall be conducted with the following species and protocols:

- 1) Fathead minnow, *Pimephales promelas* (96 hour static-renewal test, method: EPA/600/4-93/027F)
- 2) Daphnid, *Ceriodaphnia dubia*, *Daphnia pulex*, or *Daphnia magna* (48 hour static test, method: EPA/600/4-93/027F). The Permittee shall choose one of the three species and use it consistently throughout effluent characterization.

The Department will accept acute whole effluent toxicity data produced in the last five years as full or partial compliance with this section if the data provides equivalent information and meets the quality control requirements of this permit.

The Permittee shall conduct the rapid screening test listed in subsection F on each sample during effluent characterization. The rapid screening test result shall be reported with the results of the acute toxicity tests conducted on that sample to provide a correlation.

B. Effluent Limit for Acute Toxicity

After completing effluent characterization, the Permittee has an effluent limit for acute toxicity if (1) and/or (2) below applies to the acute toxicity test results and shall complete all applicable requirements in subsections C, D, E and G. If neither (1) nor (2) applies, the Permittee has no effluent limit for acute toxicity and only subsections F and G apply.

- (1) The median survival of any species in 100% effluent is below 80%
- (2) Any one test of any species exhibits less than 65% survival in 100% effluent.

The effluent limit for acute toxicity is no statistically significant difference in survival between the control and the test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the zone of acute criteria exceedance assigned pursuant to WAC 173-201A-100. The ACEC will be determined as a component of Special Condition S6. EFFLUENT MIXING of this permit.

If after one year of effluent characterization the Permittee has an effluent limit for acute toxicity and the ACEC is not known, then effluent characterization for acute toxicity shall continue until the time an ACEC is known.

Toxicity testing conducted during an effluent characterization extended past one year until an ACEC has been determined shall be performed using each one of the tests listed in subsection A on a rotating basis. When an ACEC has been determined, the Permittee shall immediately complete all applicable requirements in subsections C, D, E and G.

If no effluent limit is required by subsection B at the end of effluent characterization, then the Permittee shall stop effluent characterization and begin to conduct the activities in subsection F even if the ACEC is unknown.

C. Compliance Monitoring

Monitoring to determine compliance with the effluent limit shall be conducted quarterly for the remainder of the permit term using each of the species listed in subsection A above on a rotating basis and performed using 100% effluent, the ACEC, and a control. The Permittee shall schedule the toxicity tests in the order listed in the permit unless the Department notifies the Permittee in writing of another species rotation schedule. The percent survival in 100% effluent shall be reported for all compliance monitoring.

The Permittee shall immediately implement subsection D if any acute toxicity test conducted for compliance monitoring determines a statistically significant difference in response between the control and the ACEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001).

D. Response To Noncompliance

If a toxicity test conducted for compliance monitoring under subsection C determines a statistically significant difference in response between the ACEC and the control, the Permittee shall begin additional compliance monitoring within one week from the time of receiving the test results. This additional monitoring shall be conducted weekly for four consecutive weeks using the same test and species as the failed compliance test. Testing shall determine the LC₅₀ and effluent limit compliance. The discharger shall return to the original monitoring frequency from subsection C after completion of the additional compliance monitoring.

If all of the additional compliance monitoring conducted in accordance with this subsection complies with the permit limit, the Permittee shall search all pertinent and recent facility records (operating records, monitoring results, inspection records, spill reports, weather records, production records, raw material purchases, pretreatment records, etc.) and submit a report to the Department on possible causes and preventive measures for the transient toxicity event which triggered the additional compliance monitoring.

If the Permittee believes that a test indicating noncompliance will be identified by the Department as an anomalous test result, the Permittee may notify the Department that the compliance test result might be anomalous and that the Permittee intends to take only one additional sample for toxicity testing and wait for notification from the Department before completing the additional monitoring required in this subsection. The notification to the Department shall accompany the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous. The Permittee shall complete all of the additional monitoring required by this subsection as soon as possible after notification by the Department that the compliance test result was not anomalous. If the first additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee shall proceed without delay to complete all of the additional monitoring required by this subsection. The first additional test result shall replace the compliance test result upon determination by the Department that the compliance test result was anomalous.

E. Toxicity Identification/Reduction Evaluations

If toxicity occurs during the additional compliance monitoring, the Permittee shall submit a TI/RE plan to the Department within 60 days after test results are final. The TI/RE plan shall be based on WAC 173-205-100(2) and EPA TI/RE guidance documents (EPA/600/6-91/003, EPA/600/R-92/080, EPA/600/R-92/081, EPA/600/6-91/005F, EPA/600/2-88/070, EPA/600/2-88/062, or current editions). The Permittee shall submit a revised TI/RE plan, in accordance with Department comments, within 30 days after receipt of the Department's comments. The Department will issue an administrative order to require implementation of the TI/RE in accordance with WAC 173-205-100(3).

F. Monitoring When There Is No Permit Limit For Acute Toxicity

In consideration of the Permittee's potential to have toxicity appear and cause receiving water impacts the following monitoring is required. The Permittee shall conduct 24 hour acute rapid screening tests using:

A minimum of 40 organisms shall be used in both the control and 100% effluent. Tests shall be conducted quarterly and have a maximum acceptable mortality rate of 0.20 in 100% effluent. The mortality rate is determined by WAC 173-205-120(2)(c).

When a rapid screening test results in a mortality rate greater than 0.20, the Permittee shall retest with all species and durations used in the acute effluent characterization in subsection A and actively investigate the source of toxicity. The toxicity test and investigation results shall be reported to the Department within 30 days of the rapid screening test failure.

G. Sampling and Reporting Requirements

1. All reports for effluent characterization, compliance monitoring, or screening monitoring shall be submitted in duplicate on the form (or in the same format as the form) provided by the Department. Reports shall contain bench sheets and reference toxicant results for test methods.
2. Testing shall be conducted on 24-hour composite effluent samples or grab samples. Samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended.
3. Permittees that potentially have ammonia and/or chlorine in the effluent shall measure total ammonia and/or chlorine from a sample collected for toxicity testing. All samples taken for toxicity testing shall have pH, total alkalinity, total hardness, dissolved oxygen, and conductivity or salinity measured prior to test initiation.
4. All toxicity tests shall meet quality assurance criteria in the EPA manual listed in subsection A, or in its update. If test results are determined invalid by the Department, testing shall be repeated with freshly collected effluent. If control performance does not meet protocol standards for acceptability, the test shall be repeated with freshly collected effluent.
5. Dilution water for toxicity testing shall be laboratory water of sufficient quality for good control performance.
6. The whole effluent toxicity test series shall be run on an unmodified sample of final effluent.
7. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A.
8. The Permittee may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC.

9. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing and do not comply with the acute statistical power standard of 29% as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

II. CHRONIC TOXICITY

The Permittee shall conduct all testing and reporting required in subsection A Effluent Characterization and then shall make the determination required in subsection B Effluent Limit for Chronic Toxicity.

If subsection B requires an effluent limit for chronic toxicity then subsection C Compliance Monitoring, subsection D Response to Noncompliance, and subsection E Toxicity Identification/Reduction Evaluations are also requirements of this permit and the Permittee shall conduct all applicable compliance monitoring activities and toxicity reduction activities in those subsections.

If subsection B does not require an effluent limit for chronic toxicity then subsections C, D, and E are not requirements of this permit. However, subsection F Monitoring When There Is No Permit Limit for Chronic Toxicity is a requirement of this permit and the Permittee shall conduct all activities in this subsection.

Subsection G Sampling and Reporting Requirements applies to all testing in this Section.

A. Effluent Characterization

The Permittee shall conduct chronic toxicity testing on the final effluent. All of the chronic toxicity tests listed below shall be conducted on each sample taken for effluent characterization.

Testing shall begin within 60 days of start-up of the new or improved industrial wastewater treatment system. A written report shall be submitted to the Department within 60 days after each of the test results are final. A final effluent characterization summary report shall be submitted to the Department within 90 days after the last monitoring test results are final. This summary report shall include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

Effluent testing for chronic toxicity shall be conducted quarterly for one year or until an acute critical effluent concentration (ACEC) is determined, if that determination takes longer than one year (see above, Effluent Limit for Acute Toxicity for a definition of the ACEC). The chronic toxicity testing shall be conducted as serial dilutions of effluent in order to determine the IC₅₀ or EC₅₀. The chronic NOEC will also be determined for comparison to the ACEC when the ACEC is known. If the ACEC is determined before the one year of characterization is over, the Permittee shall include the ACEC in the concentration series of all subsequent tests and compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001. If the ACEC is unknown at the end of one year of effluent characterization, the Permittee shall continue the effluent characterization until an ACEC has been determined. Toxicity testing conducted during an effluent characterization extended past one year until an ACEC has been determined shall be performed using each one of the tests listed in subsection A on a rotating basis.

Chronic toxicity tests shall be conducted with the following species and protocols for each discharge type:

For discharges to freshwater:

Freshwater Chronic Toxicity Test Species	Method
Fathead minnow: <i>Pimephales promelas</i>	EPA/600/4-89/001
Water flea: <i>Ceriodaphnia dubia</i>	EPA/600/4-89/001

For discharges to Puget Sound:

Saltwater Chronic Toxicity Test Species	Method
Silverside minnow: <i>Menidia beryllina</i>	EPA/600/4-87/028
Mysid shrimp: <i>Mysidopsis bahia</i>	EPA/600/4-87/028

The Department will accept chronic whole effluent toxicity data produced in the last five years as full or partial compliance with this section if the data provides equivalent information and meets the quality control requirements of this permit.

The Permittee shall conduct the rapid screening test listed in subsection F on each sample during effluent characterization. The rapid screening test result shall be reported with the results of the chronic toxicity tests conducted on that sample to provide a correlation.

Testing shall begin within 60 days of the permit effective date. A written report shall be submitted to the Department within 60 days after each of the test results are final. A final effluent characterization summary report shall be submitted to the Department within 90 days after the last monitoring test results are final. This summary report shall include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

B. Effluent Limit for Chronic Toxicity

After completion of effluent characterization, the permittee has an effluent limit for chronic toxicity if any test conducted under subsection A results in a NOEC less than the ACEC or if any test shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001). The Permittee shall complete all applicable requirements in subsections C, D, E and G upon determining that an effluent limit for chronic toxicity applies to the discharge.

If no test resulted in a NOEC less than the ACEC or if no significant difference is shown between the ACEC and the control in any of the chronic toxicity tests, the Permittee has no effluent limit for chronic toxicity and only subsections F and G apply.

The effluent limit for chronic toxicity is no statistically significant difference in survival between the control and the test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC means the maximum concentration of effluent allowable at the boundary of a mixing zone assigned pursuant to WAC 173-201A-100. The CCEC will be determined as a component of S₁. EFFLUENT MIXING of this permit.

C. Compliance Monitoring

Monitoring to determine compliance with the effluent limit shall be conducted quarterly for the remainder of the permit term using each of the species listed in subsection A above on a rotating basis and performed using the CCEC, the ACEC, and a control. The Permittee shall schedule the toxicity tests in the order listed in the permit unless the Department notifies the Permittee in writing of another species rotation schedule.

The Permittee shall immediately implement subsection D if any acute toxicity test conducted for compliance monitoring determines a statistically significant difference in response between the control and the CCEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001).

In order to establish whether the chronic toxicity limit is eligible for removal from future permits, the Permittee shall also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine if a statistically significant difference in response exists between the ACEC and the control.

D. Response To Noncompliance

If a toxicity test conducted for compliance monitoring under subsection C determines a statistically significant difference in response between the CCEC and the control, the Permittee shall begin additional compliance monitoring within one week from the time of receiving the test results. This additional monitoring shall be conducted monthly for three consecutive months using the same test and species as the failed compliance test. Testing shall determine the EC₅₀ or the IC₅₀ and determine compliance with the chronic whole effluent toxicity limit. The discharger shall return to the original monitoring frequency from subsection C after completion of the additional compliance monitoring.

If all of the additional compliance monitoring conducted in accordance with this subsection complies with the permit limit, the Permittee shall search all pertinent and recent facility records (operating records, monitoring results, inspection records, spill reports, weather records, production records, raw material purchases, pretreatment records, etc.) and submit a report to the Department on possible causes and preventive measures for the transient toxicity event which triggered the additional compliance monitoring.

If the Permittee believes that a test indicating noncompliance will be identified by the Department as an anomalous test result, the Permittee may notify the Department that the compliance test result might be anomalous and that the Permittee intends to take only one additional sample for toxicity testing and wait for notification from the Department before completing the additional monitoring required in this subsection. The notification to the Department shall accompany the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous. The Permittee shall complete all of the additional monitoring required by this subsection as soon as possible after notification by the Department that the compliance test result was not anomalous. If the first additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee shall proceed without delay to complete all of the additional monitoring required by this subsection.

The first additional test result shall replace the compliance test result upon determination by the Department that the compliance test result was anomalous.

E. Toxicity Identification/Reduction Evaluations

If toxicity occurs during the additional compliance monitoring, the Permittee shall submit a TI/RE plan to the Department within 60 days after test results are final. The TI/RE plan shall include procedures necessary for identification and control of whole effluent toxicity, but need not include Phase I of a Toxicity Identification Evaluation for West Coast species until EPA or the Department can provide guidance for this procedure. The TI/RE plan shall be based on WAC 173-205-100(2) and EPA TI/RE guidance documents (EPA/600/6-91/003, EPA/600/R-92/080, EPA/600/R-92/081, EPA/600/6-91/005F, EPA/600/2-88/070, EPA/600/2-88/062, or current editions). The Permittee shall submit a revised TI/RE plan, in accordance with Department comments, within 30 days after receipt of the Department's comments. The Department will issue an administrative order to require implementation of the TI/RE in accordance with WAC 173-205-100(3).

F. Monitoring When There Is No Permit Limit For Chronic Toxicity

The Permittee shall conduct chronic rapid screening tests using:

Rotifer life cycle test. (Snell, Terry W. 1992. A 2-d Life Cycle Test With The Rotifer *Brachionus calyciflorus*. *Environ. Toxicol. Chem.* 11:1249-1257).

Tests shall be conducted quarterly and shall be expected to have no statistically significant difference in response between the ACEC and the control using the method in Appendix H of EPA/600/4-89/001 or an equivalent method approved by the Department. Whenever a rapid screening test result has a statistically significant difference in response between the ACEC and the control, the Permittee shall retest with all species and durations used in the chronic effluent characterization in subsection A and actively investigate the source of toxicity. The chronic toxicity test and investigation results shall be reported to the Department within 30 days of the rapid screening test failure.

G. Sampling and Reporting Requirements

1. All reports for effluent characterization, compliance monitoring, or screening monitoring shall be submitted in duplicate on the form (or in the same format as the form) provided by the Department. Reports shall contain bench sheets and reference toxicant results for test methods.

2. Testing shall be conducted on 24-hour composite effluent samples or grab samples. Samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended.
3. Permittees that potentially have ammonia and/or chlorine in the effluent shall measure total ammonia and/or chlorine from a sample collected for toxicity testing. All samples taken for toxicity testing shall have pH, total alkalinity, total hardness, dissolved oxygen, and conductivity or salinity measured prior to test initiation.
4. All toxicity tests shall meet quality assurance criteria in the EPA manual listed in subsection A, or in its update. If test results are determined invalid by the Department, testing shall be repeated with freshly collected effluent. If control performance does not meet protocol standards for acceptability, the test shall be repeated with freshly collected effluent.
5. Dilution water for toxicity testing shall be laboratory water of sufficient quality for good control performance.
6. The whole effluent toxicity test series shall be run on an unmodified sample of final effluent.
7. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A.
8. The Permittee may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC.
9. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing and do not comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

FACT SHEET

This fact sheet is a companion document to the draft National Discharge Elimination System (NPDES) Permit No. WA-002465-1. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of treated industrial wastewater, non-contact cooling water and storm water to waters of the State of Washington.

This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical basis for those decisions. Public involvement information is contained in Appendix A. Definitions are included in Appendix B.

GENERAL INFORMATION

Applicant: Port of Seattle

Facility Name and Address: Sea-Tac International Airport
Seattle, Washington

Type of Facility: Major international airport serving the Pacific Northwest, providing facilities for approximately 44 tenants engaged in aircraft maintenance, fueling, servicing and repair.

Discharge Locations:

(i) **Puget Sound**

Outfall 001 (industrial wastewater)	Latitude: 47° 24' 07" N Longitude: 122° 20' 07" W
--	--

(ii) **Des Moines Creek**

Outfall 002: SDE4 (storm water and non-contact cooling water)	Latitude: 47° 25' 00" N Longitude: 122° 17' 57" W
--	--

Outfall 003: SDS1 (storm water)	Latitude: 47° 25' 00" N Longitude: 122° 18' 00" W
------------------------------------	--

Outfall 004: SDS2 (storm water)	Latitude: 47° 25' 45" N Longitude: 122° 18' 55" W
Outfall 005: SDS3 (storm water)	Latitude: 47° 25' 45" N Longitude: 122° 18' 45" W
Outfall 009: SDS4 (storm water)	Latitude: 47° 25' 33" N Longitude: 122° 18' 20" W
Outfall 010: SDW3 (storm water)	Latitude: 47° 26' 15" N Longitude: 122° 19' 00" W

(iii) **Miller Creek**

Outfall 006: SDN1 (storm water)	Latitude: 47° 28' 00" N Longitude: 122° 18' 04" W
Outfall 007: SDN2 (storm water)	Latitude: 47° 27' 50" N Longitude: 122° 18' 30" W
Outfall 008: SDN3 (storm water)	Latitude: 47° 27' 50" N Longitude: 122° 18' 35" W

(iv) **Des Moines Creek and Miller Creek via City of Sea-Tac storm sewers (storm water)**

**Water Body
ID Number:**

Puget Sound:	WA-PS-0270
Des Moines Creek:	WA-09-2000
Miller Creek:	WA-09-2005

Prepared by:

Lisa Zinner, P.E. and Deborah North, Permit Managers
Northwest Regional Office

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BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

Sea-Tac International Airport is a major international airport which serves the Pacific Northwest. The airport was built in 1944 and is owned and operated by the Port of Seattle. The Port provides facilities for approximately 44 tenants engaged in passenger and cargo air transportation. In addition to the main terminal, which has four concourses, there are two satellite terminals providing a total of 73 loading gates. Industrial activities at the airport include aircraft and ground vehicle maintenance, fueling, washing, and de-icing. This NPDES permit addresses storm water and industrial wastewater discharges from airport operations.

DISCHARGE

Industrial Wastewater

The Industrial Wastewater System (IWS) collects industrial wastewater from 214 acres, including the aircraft gate areas at the main terminal and north and south satellites, the parking garage, airline hangar buildings, maintenance and air cargo buildings, fire department buildings, and the fire fighting practice pit. Shop drains from the airline maintenance hangars are connected to the IWS collection system. The industrial wastewater primarily consists of plane washwater and storm water contaminated with fuel, oil, fire foam, cleaning agents and de-icing/anti-icing agents. The cross-hatched area in Figure 1: Drainage Basins show the IWS service area.

The IWS conveyance system collects and transports the industrial wastewater to the IWS treatment plant. The conveyance system includes 21.4 miles of piping, 510 manholes and catchbasins, two below grade vaults in the parking garage, and three pump stations. Two of the pump stations are associated with the parking garage and one is used for the United Airlines fuel farm north of the garage.

The current industrial wastewater treatment plant was originally designed and constructed in the early 1960s for the purpose of removing suspended solids and oil and grease. In the last 30 years, its capacity has been enlarged and now consists of three lagoons and a dissolved air flotation (DAF) plant containing four DAF units.

The three lagoons have a combined active storage volume of 31.3 million gallons. Lagoon 1 was completed in 1965, holds approximately 2.2 million gallons, and is lined with 6 to 12 inches of clay. Lagoon 1 was designed to skim oils and floating solids from the industrial wastewater. Lagoon 2 was constructed in 1972 to expand the treatment plant capacity. Lagoon 2 has a capacity of approximately 3 million gallons and is lined with 6 to 12 inches of clay.

Lagoon 2 also has a mechanical oil skimmer (which is currently inoperative). Lagoon 3 was constructed in 1979, holds approximately 30.6 million gallons, and is unlined. An overflow outlet is located on the east edge of Lagoon 3 which discharges into a western tributary of Des Moines Creek. Overflow events from Lagoon 3 to Des Moines Creek are required to be reported to the Department.

During a rainfall event, Lagoon 1 is allowed to fill first. When the water reaches approximately 3.5 feet above the bottom of the lagoon, the water begins to back up to a pipeline which flows to Lagoon 2. Flow is diverted to Lagoon 3 when the water levels in Lagoons 1 and 2 reach 0.5 feet below their overflow height. Water from Lagoon 3 may be used to reduce odors generated by concentrated wastewater in Lagoons 1 and 2 during the summer months.

All three of the lagoons discharge into the DAF plant. The DAF plant consists of two 100-square-foot and two 250-square-foot flotation units, with room for two more 100-square-foot units. The industrial wastewater is gravity fed from Lagoons 1 and 2 and is pumped from Lagoon 3 to the distribution header for the four DAF units. The wastewater flows to a flash mix tank and is mixed with a metered amount of aluminum hydrochloride, then flows to the flocculation mixer to allow oil and grease to coagulate into floatable semi-solids. The wastewater is mixed with air as it flows from the flocculation mixer to the flotation tank where the coagulated floatable semi-solids (float) are skimmed off the top. In the same tank, the wastewater is separated from the float as it flows under a baffle and then over a weir to the discharge pipe. The DAF units are operated as needed by two full-time employees. During the winter months, the DAF units may operated 24 hours per day. During the summer months, the units are operated when the water levels in Lagoons 1 and 2 reach approximately 3 feet above the lagoon bottoms.

The treated wastewater discharges into a manhole where its pH is continuously sampled, monitored, and recorded during operation of the DAF units. Lime is added manually at the outlet of each DAF unit to bring the effluent's pH to within the NPDES permit limits.

Treated wastewater from the IWS flows through an 18-inch effluent trunk line which eventually joins the Midway Sewer District's effluent trunk line and discharges through a diffuser into Puget Sound (Outfall 001). The discharge occurs 1,400 feet from shore at a depth of 178 feet. Figure 2 shows the IWS effluent trunk and marine outfall location.

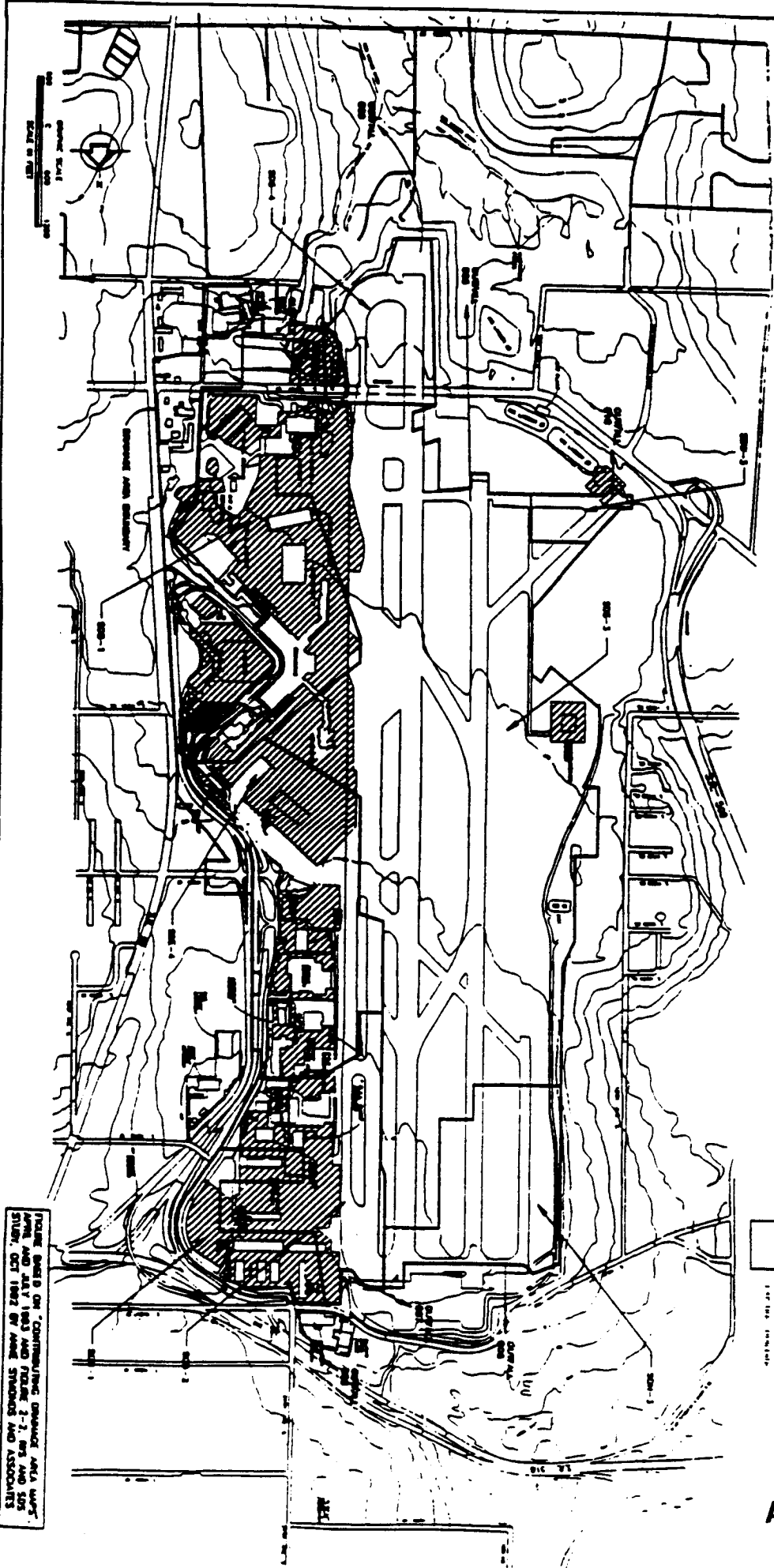
The Midway Sewer District and the Port of Seattle signed an agreement in 1963 which allocated twenty percent of the marine outfall's capacity to the airport's IWS discharges. This allocation currently allows the airport to discharge 3.6 million gallons per day (mgd). Sea-Tac's discharge flow rate, as reported to the Department, has varied between 0.02 mgd and 6.19 mgd over the last three years. The Port is currently renegotiating the discharge agreement with the Midway Sewer District.

Station	205 (Inverts)	210 (Inverts)	215 (Inverts)
205-1	10	10	10
205-2	25	25	25
205-3	125	125	125
205-4	40	40	40
205-5	440	440	440
205-6	44	44	44
205-7	10	10	10

NOTE: Modified by Post 2/3/94
All boundaries are approximate

LEGEND

- Existing Storm Sewer System (SSS) Street Area
- Existing Industrial Wastewater System (IWS) Street Area
- Storm Sewer
- Industrial Wastewater

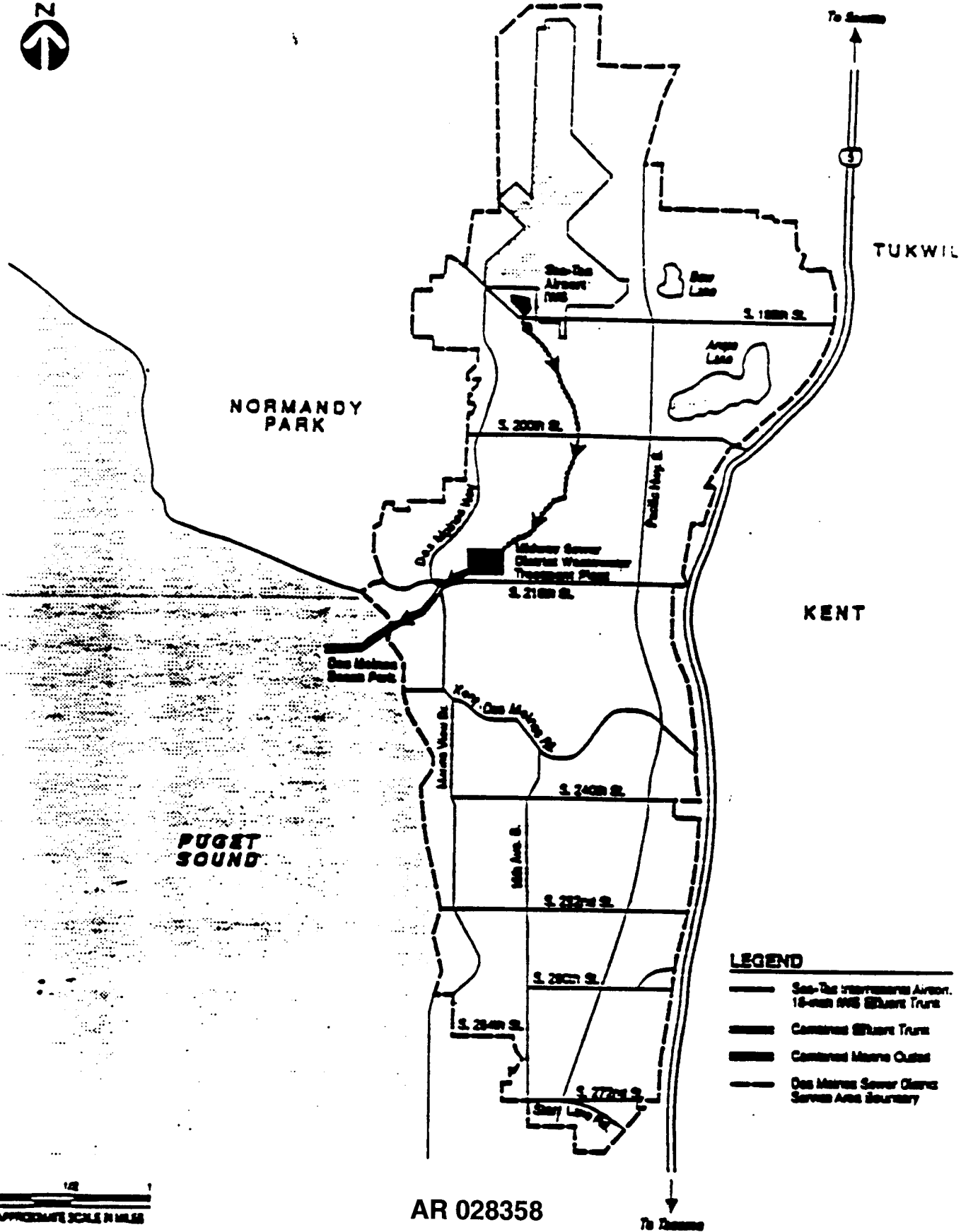


NOTE: BASED ON "CONTRIBUTING DRAINAGE AREA MAP" DATED AND MAY 1983 AND FIGURE 2-2, 85 AND 125 STUDY, OCT 1987 BY AEC STUDIOS AND ASSOCIATES

Port of Seattle
COMPREHENSIVE STORMWATER AND
INDUSTRIAL WASTEWATER PLAN

Figure 1.
DRAINAGE BASINS

KCM
1817 First Avenue
Seattle, Washington 98101



- LEGEND**
- Sea-Tac International Airport, 18-inch effluent trunk
 - Combined Effluent Trunk
 - Combined Marine Outfall
 - Des Moines Sewer District Service Area Boundary

KCM
 1917 First Avenue
 Seattle, Washington 98101

SEA-TAC INTERNATIONAL AIRPORT
 EXISTING INDUSTRIAL
 WASTEWATER SYSTEM

Figure 2
 INDUSTRIAL WASTEWATER SYSTEM
 EFFLUENT TRUNK AND MARINE OUTFALL

The IWS is unable to treat many of the pollutants discharged into the system. This permit requires the Permittee to monitor the IWS discharge and collect data that will enable the development of an engineering report for a new or improved wastewater treatment system that will be able to meet effluent limitations.

Non-Contact Cooling Water

Non-contact cooling water from the air conditioning plant is discharged through a storm drain to Des Moines Creek via a submerged outfall (Outfall 002). Potable water is used for cooling and no chemicals are added. The Permittee estimates that the maximum daily flow rate from the plant is 28,800 gallons per day (gpd). This permit requires the Permittee to monitor the flow and temperature of the discharge, as well as investigate the feasibility of converting the discharge into a closed loop, no discharge system.

Storm Water

The storm water drainage system consists of eight basins (Figure 1). The three northernmost basins (SDN-1, SDN-2 and SDN-3) drain to Lake Reba, which is a headwater of Miller Creek. The other six basins (SDE-4, SDS-1, SDS-2, SDS-3, SDS4, and SDW-3) drain to Des Moines Creek, either directly or via the City of SeaTac storm drain system. Both Miller and Des Moines creeks discharge into Puget Sound southwest of Sea-Tac Airport. Characteristics of the storm water basins and the corresponding outfalls are listed in Table 1. The cross-hatched areas shown on Figure 1 in each storm water basin drain to the IWS. The IWS and storm drain systems overlap. Runoff from some industrial activities in a storm water basin may be collected in the IWS. The permit requires the elimination of all industrial discharges to the storm drain system.

Storm water is also discharged from Port property which lies east of the airport access freeway. There are four properties within this boundary:

- **Doug Fox Travel Service:** primary function is parking of cars by air travelers. Some car washing is done.
- **United Flight Kitchen:** preparation of air flight meals. All work is done inside.
- **Port Engineering Yard:** temporary storage of surplus material and washing of Port vehicles.
- **Taxi Yard:** staging area for active taxis as they wait their turn to provide service to air travelers at the terminal. Some vehicle washing occurs.

Vehicle washwater from these areas is currently discharged to City of SeaTac storm drains. This NPDES permit prohibits the discharge of vehicle washwater to the storm drain and requires the Port to investigate the installation of closed loop vehicle washing systems. Other options for vehicle washwater include either termination of the washing activity or discharge to the IWS or sanitary sewer.

Table 1. Basin Characteristics for the Storm Water Drainage System at Sea-Tac International Airport

<u>Storm Water Drainage Basin</u>	<u>Outfall</u>	<u>Area (acres)</u>	<u>Buildings and Paved Surfaces</u>
SDE-4	002	125	Pilot Air Freight Emery Air Freight Airport Drayage Company Alaska Air Cargo United Airlines Cargo Airborne Freight Postal Facility Delta Cargo Fire Station North Satellite Terminal Parking Garage Seafirst Bank Alaska Flight Training Pacific Highway South
SDS-1	003	38	Main Terminal (Concourses A, B, D) South Satellite Terminal Northwest Airlines Hangar Delta Airlines Hangar American Airlines Hangars 1 & 2 Northwest Airlines Food Kitchen
SDS-2	004	40	Staging of Construction Materials
SDS-3	005	610	Main Terminal (Concourse C) Weyerhaeuser Hangar Runway Taxiway South 188th Street
SDN-1	006	16	Flying Tiger Air Cargo Transplex Air Cargo Marriott Food Kitchen Perimeter Road
SDN-2	007	31	Port of Seattle Maintenance United Airlines Maintenance Livestock Quarantine Taxiway
SDN-3	008	120	Runway Taxiway
SDS-4	009	80	Runway Taxiway
SDW-3	010	19	Abandoned Runway

This permit requires the Permittee to monitor the storm water outfalls on a schedule that reflects the activities in each drainage basin.

De-Icing

De-icing operations are usually conducted at the loading gates during freezing conditions. Aircraft and runway de-icing operations are quite different. Aircraft can be either de-iced or anti-iced. De-icing involves spraying either ethylene, diethylene, or propylene glycol on aircraft parked in terminals, air cargo areas and airline hangars. Anti-icing involves spraying heated propylene glycol on aircraft that is already free of snow and ice to prevent the reformation of snow and ice crystals. Anti-icing usually requires a smaller volume of glycol than de-icing. Once a plane has been de-iced or coated with an anti-icing glycol, the plane must take off within a specific amount of time or the chemicals must be reapplied. The application of aircraft de-icers is typically under the control of the individual airlines.

Ethylene, diethylene and propylene glycol are the only chemicals the Federal Aviation Authority (FAA) allows for aircraft de-icing or anti-icing at this time. In Washington, ethylene glycol is considered a hazardous waste because of its toxicity to humans and animals in a concentrated form. Propylene glycol is a compound the U.S. Food and Drug Administration has declared "Generally Recognized as Safe". Some airlines have switched to using propylene glycol for this reason. However, the acute and chronic aquatic toxicity of ethylene and propylene glycol is also relatively low. Glycols are not bioaccumulative and are highly degradable in the soil and water environment. The degradation of both types of glycols in water is so rapid and so oxygen-demanding, that dissolved oxygen can be depleted, posing a significant threat to aquatic life. For this reason, the permit emphasizes BOD (Biochemical Oxygen Demand) loading rather than strictly limiting glycol concentration.

Runway and taxiway de-icing usually involves spraying of urea on paved surfaces to melt snow and to prevent ice formation. Under extreme conditions, the Port may use potassium acetate in addition to or in lieu of urea. De-icing chemicals applied to runways and taxiways run off into the storm water drainage system. The primary water quality concern with the use of urea is the formation of ammonia upon degradation. The primary concern with the use of potassium acetate is BOD.

Wastewater from aircraft de-icing and anti-icing operations generally drain to the IWS. However, some wastewater may end up in the storm drain system. The problem of cross connections and improper drainage of industrial wastewater into the storm drain system is to be addressed by the Port of Seattle in the Storm Water Pollution Prevention Plan required in Special Condition S10.

DESCRIPTION OF THE RECEIVING WATERS

Puget Sound, Miller Creek and Des Moines Creek are designated as a Class AA receiving waters in the vicinity of Sea-Tac International Airport's industrial wastewater and storm water outfalls. Potential characteristic uses of Class AA waters include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

The United States Environmental Protection Agency (EPA) named Puget Sound an estuary of national significance in 1988. Its waters support international commerce, commercial and recreational fisheries, shellfish beds and a variety of wildlife habitat. Recreational opportunities abound. A growing population and increased urban development have impacted Puget Sound. A number of government agencies, non-profit environmental organizations and citizen groups are dedicated to protecting and cleaning up the Sound.

Miller Creek and Des Moines Creek drain the north and south sides of the airport, respectively. Both ultimately discharge into Puget Sound. Miller Creek is at the north end of the airport; it receives airport storm water from three outfalls that flow into Lake Reba, a man-made storm water detention facility. Lake Reba is one of several headwaters for Miller Creek. Des Moines Creek flows about three miles from Bow Lake on the east side of the airport, along the southern boundary of the airport and southwest toward Puget Sound. Six storm drain outfalls from the airport discharge into Des Moines Creek.

Trout Unlimited and Friends of Miller Creek are representative of community organizations working to restore the historical fish runs in the area. They aim to improve water quality and fish habitat by restoring riparian vegetation, in-stream structures and conducting in-stream inventories to measure stream width, depth and flow type. Transient pollution from homes and businesses, as well as general storm water runoff containing a variety of toxins at low concentrations are also concerns. Community education and involvement, in addition to NPDES permits for industries that discharge storm water to the creeks, is critical to the successful rehabilitation of both Miller and Des Moines Creeks.

Documentation of studies conducted on these creeks is included in the reference section of this Fact Sheet and should be referred to for more detailed information.

PREVIOUS PERMIT LIMITATIONS

The previous permit for this facility was issued on November 30, 1988. The previous permit placed the following effluent limitations on discharges from the IWS (outfall 001) and airport cooling system (outfall 002):

<u>Parameter</u>	<u>EFFLUENT LIMITATIONS</u>		<u>MONITORING REQUIREMENT</u>	
	<u>Daily Average</u>	<u>Daily Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Oil & Grease (001)	10 mg/L	15 mg/L	Weekly	Grab
pH (001)	Not outside 6.5 - 8.5		Weekly	Grab
Flow (001)	Not to exceed 5.99 mgd		Daily	Estimate
Flow (002)	28,800 gpd		Monthly	Estimate
Temperature (002)	70°F		Monthly	Grab

The previous permit did not address storm water discharges.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The last inspections at Sea-Tac Airport were in July and September, 1992. Inspection reports from those site visits document permit non-compliance in the following areas: records and reporting, flow measurement, and self-monitoring. The Department expressed concern that the IWS was receiving industrial user discharges that it was not designed to treat, such as solvents and other hazardous materials. Hazardous materials discharged into the IWS lagoons have caused sludge contamination. It was also noted that the IWS was unable to effectively treat ethylene glycol, a de-icing agent.

As a result of these inspections, in late 1992, the Port began a source control program with the tenants. The only allowable discharges to the IWS are washwater from aircraft and vehicle washing, storm water that discharges to the IWS from paved surfaces that drain to the IWS, and de-icing chemicals.

All spills are to be contained and removed from the pavement; a spill can only be washed into the IWS if an immediate safety risk exists to airline passengers. In all cases, the Fire Department is notified of the spill and monitors its containment and cleanup.

Figure 3: Reported Number of Days of IWS Operation Each Month

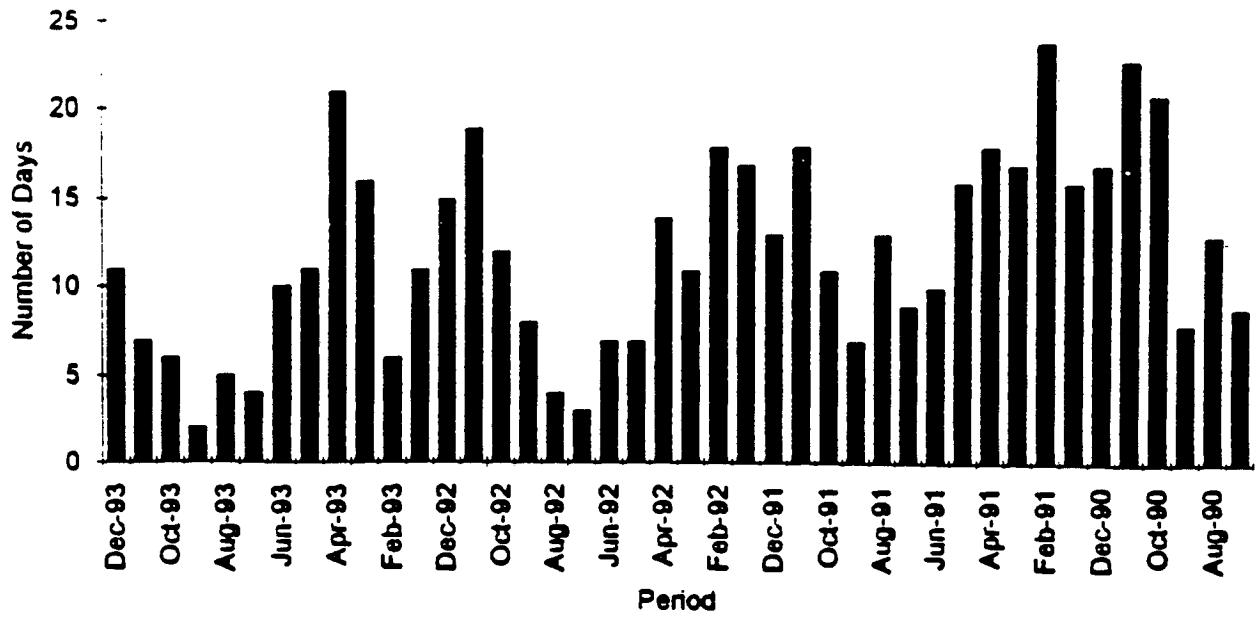


Figure 4: IWS Effluent Flow

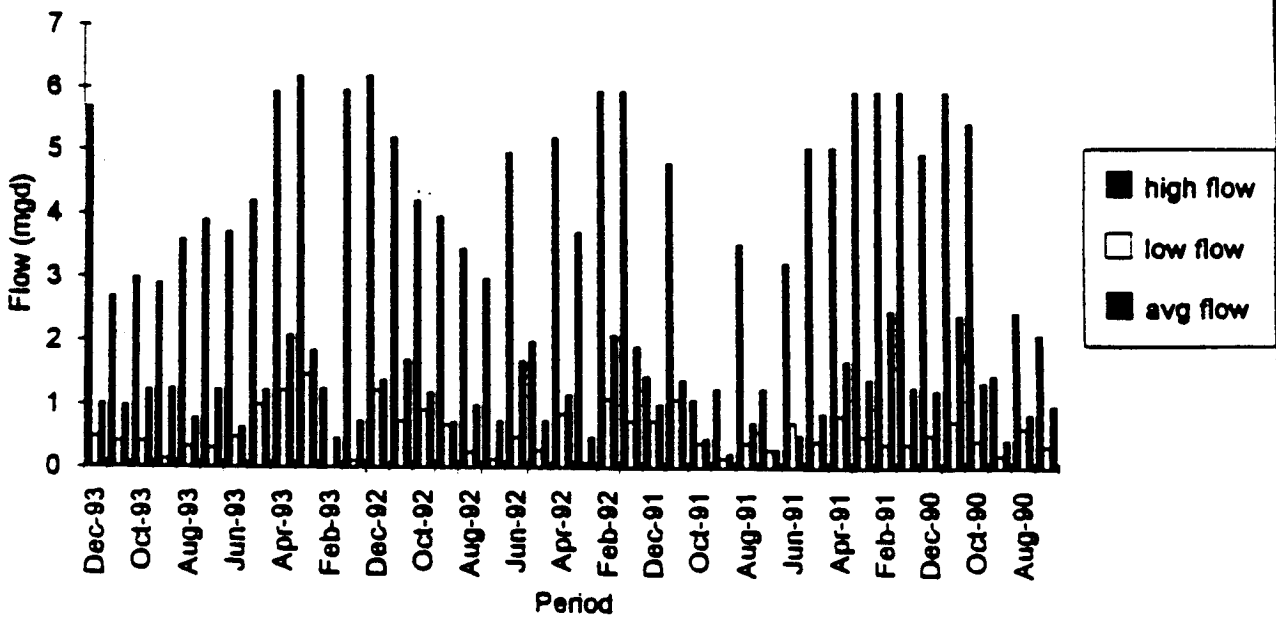


Figure 5: Maximum Reported Oil and Grease Concentrations

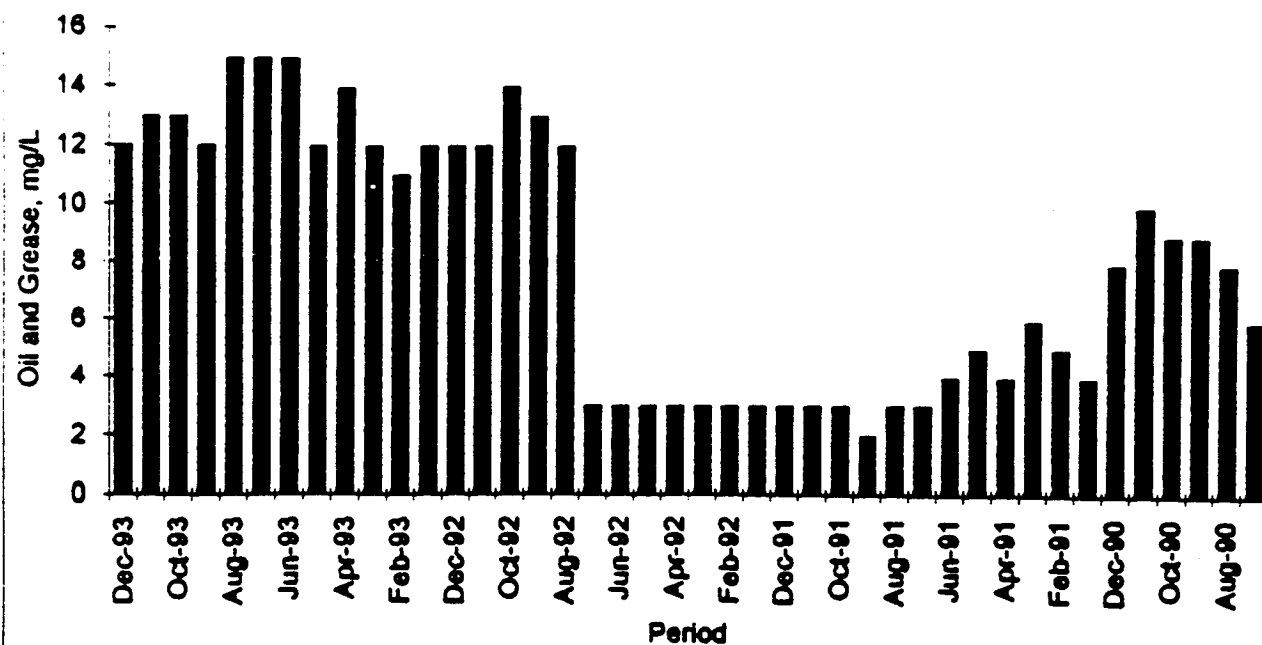
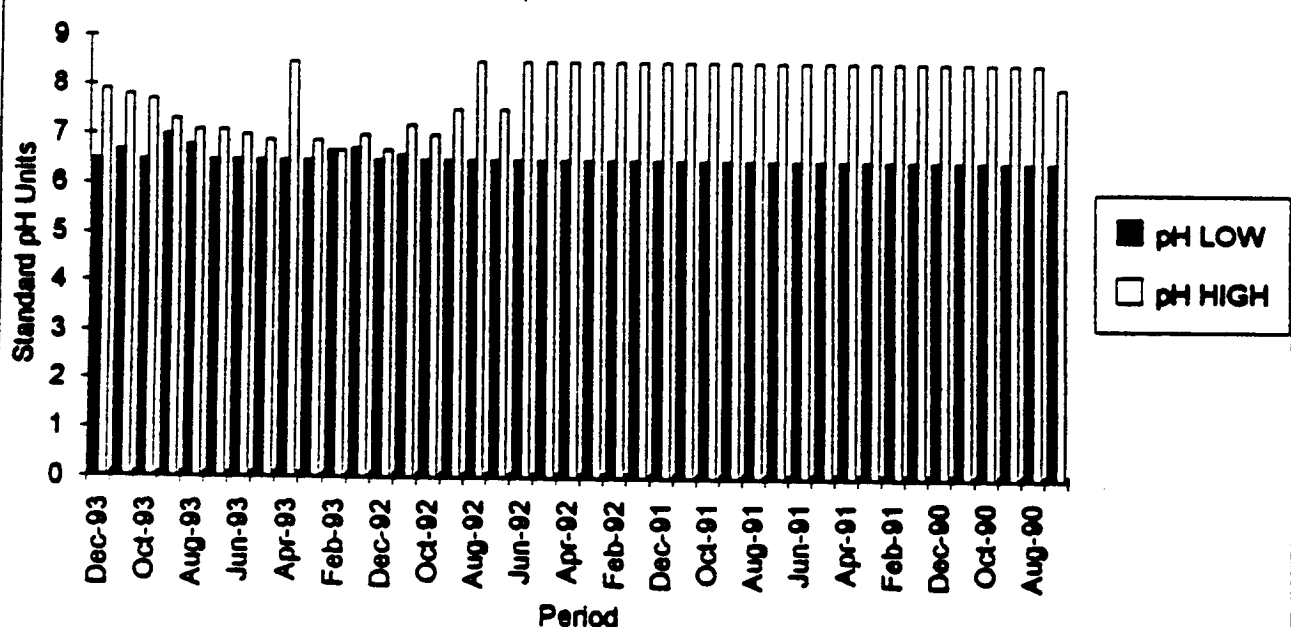


Figure 6: Minimum and Maximum Reported pH Values



Discharge monitoring reports (DMRs) were to be compiled during a six month period and then submitted to the Department within two weeks of the end of the six month reporting period. The Port of Seattle has not made timely submittals of its DMRs throughout the life of its permit.

The DMRs show that the flow of treated wastewater into the Midway Sewer District Plant Outfall exceeded the NPDES permit limit only once during the previous permit cycle. Although the Midway Sewer District and Sea-Tac Airport outfall agreement is not subject to any term or condition of the existing NPDES permit, it should be noted that the Port of Seattle has exceeded its agreed allocation of Outfall 001's capacity nearly every month.

The Port of Seattle has not conducted any monitoring for its non-contact cooling water discharge due to their inability to sample at Outfall 002, which discharges underwater into Des Moines Creek.

A summary of the DMR data submitted in the previous permit cycle is shown in Figures 3 through 6.

WASTEWATER CHARACTERIZATION

An application for permit renewal was submitted to the Department on June 16, 1993 and accepted by the Department as complete on October 22, 1993.

The proposed wastewater discharge was characterized in the permit application. Table 2 summarizes the permit application data for the industrial wastewater discharge. Non-contact cooling water was not characterized in the permit application. Table 3 summarizes characterization data for the storm water discharges obtained by Herrera Environmental Consultants (Herrera, 1993).

Table 2. Industrial Wastewater Discharge Characterization at Sea-Tac International Airport

Parameter	Effluent Data		
	Daily Maximum (mg/L)	30-Day Maximum (mg/L)	Long Term Average (mg/L)
Biological Oxygen Demand (BOD ₅)	510		
Chemical Oxygen Demand (COD)	870		
Total Organic Carbon (TOC)	240		
Total Suspended Solids (TSS)	25		
Ammonia (as N)	0.04		
Flow	5.3 mgd	33.6 mg	2 mgd
Temperature (winter)	ambient	ambient	ambient
Temperature (summer)	ambient	ambient	ambient
pH	6.5 - 8.5	6.7 - 8	
Oil and Grease	3	2	1.5
Arsenic, Total			0.003
Cadmium, Total			0.007
Chromium, Total			0.005
Copper, Total			0.094
Lead, Total			0.023
Zinc, Total			0.004
Phenols, Total			0.033
Benzene			0.005
Ethylbenzene			0.025
Methylene Chloride			0.005
Toluene			0.046
1,1,1-Trichloroethane			0.003
2,4-Dimethylphenol			0.013
Phenol			0.033
Acenaphthene			0.089
Bis(2-ethylhexyl) Phthalate			0.018
Chrysene			0.006
Di-N-Butyl Phthalate			0.014
Di-N-Octyl Phthalate			0.034
Fluoranthene			0.0007
Fluorene			0.004
Naphthalene			0.430
Phenanthrene			0.0025
Pyrene			0.0009

Table 3. Storm Water Discharge Characterization at Sea-Tac International Airport

<u>Parameter</u>	<u>Mean Value from All Outfalls</u>	
	<u>First Flush Grab Sample</u>	<u>Flow-Weighted Composite</u>
Temperature (°C)	14.3	
pH	7.26	
Dissolved Oxygen (mg/L)	8.8	
Conductivity (µmhos/cm)	117	
Hardness (mg/L CaCO ₃)	46.9	26.4
Total Suspended Solids (mg/L)	20.7	17.1
Biological Oxygen Demand (mg/L)	14.2 J	8.4
Total Phosphorus (mg/L)	0.062	0.071
Total Kjeldahl Nitrogen (mg/L)	1.0	0.6 UJ
Oil and Grease (mg/L)	5.4	
Total Petroleum Hydrocarbons (mg/L)	2.6	
Copper, Total (µg/L)	35	28
Lead, Total (µg/L)	10	12
Zinc, Total (µg/L)	153	120
4-Methylphenol (µg/L)	1 U	
Di-N-Butyl Phthalate (µg/L)	1.1	2.3
Diethyl Phthalate (µg/L)	1.4	2.7
Bis(2-ethylhexyl)phthalate (µg/L)	37	1.5
Acetone (µg/L)	5 U	
Methylene Chloride (µg/L)	2 U	
1,2-Dichlorobenzene (µg/L)		1 U

U Compound was analyzed for but not detected
 J Estimated value

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

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 wastewater. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Water Quality Standards (Chapter 173-201A WAC). 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.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulation in the Federal effluent guidelines or on a case-by-case basis using Best Professional Judgement (BPJ) when no effluent guidelines exist for an industrial category. Technology-based limits represent the best treatment a facility can install with the economic means of the industry as a whole (in the case of effluent guidelines) or of the specific industrial facility being permitted (in the case of BPJ).

This permit requires the Permittee to conduct an engineering study to determine the treatment methodologies that will allow the IWS effluent to meet water quality standards. Therefore, the Permittee will be allowed to discharge treated industrial wastewater to Puget Sound subject to interim and final effluent limitations. Interim limitations will be replaced by the final limitations when the new or improved industrial wastewater treatment system is completed.

Interim Limitations

Interim limitations have been established to regulate the Permittee's industrial wastewater discharge prior to completion of a new or improved industrial wastewater treatment system.

1. Flow

The flow limitation is set at 2500 gallons per minute (gpm). This limit is based on the Permittee's current allocation of Outfall 001's capacity as agreed to with the Midway Sewer District. If the Permittee's allocation is changed through a new agreement with the Midway Sewer District, this limit shall be set at the new allocation.

2. pH

The pH interim effluent limitation was set using Best Professional Judgement (BPJ) based on Best Conventional Pollutant Control Technology (BCT) effluent guidelines for storm water in the Petroleum Refining Point Source Category (40 CFR Part 419). Although the Petroleum Refining category does not apply to this facility, the treatment technology used for industrial wastewater treatment at the airport is the same as was used to develop the BCT limits for storm water runoff in this category. Also, the character of the industrial wastewater from the airport is similar to the storm water from a petroleum refinery.

The interim limit for pH is set at within the range of 6.0 to 9.0 standard units.

3. Oil and Grease

The oil and grease interim effluent limitation was set using BPJ based on BCT effluent guidelines for storm water in the Petroleum Refining Point Source Category (40 CFR Part 419).

The interim limit for oil and grease is set at a daily average of 8 mg/L and a daily maximum of 15 mg/L.

4. Total Suspended Solids

The total suspended solids interim effluent limitation was set using BPJ based on BCT effluent guidelines for storm water in the Petroleum Refining Point Source Category (40 CFR Part 419).

The interim limit for total suspended solids is set at a daily average of 21 mg/L and a daily maximum of 33 mg/L. This limit will become effective February 1, 1995 unless the Department determines a more appropriate TSS effluent limitation upon approval of the TSS Treatability Engineering Report required in Special Condition S5.B.

Final Limitations

The final effluent limitations will be effective upon completion of construction and start up of the new or improved treatment system required in the compliance schedule (Special Condition S5).

Except for flow and pH, technology-based effluent limitations for oil and grease, 5-day biological oxygen demand, total suspended solids, total ammonia, PAHs, BTEX, total recoverable phenolics and priority pollutant metals shall be determined by the Department upon completion of the Engineering Report required in Special Condition S5.A. Technology-based limitations will be based on the determination of All Known, Available, and Reasonable Methods of Treatment (AKART).

The following Final Effluent Limitations have been determined for the IWS discharge:

1. Flow

The flow limitation for IWS effluent is set at 2500 gallons per minute (gpm). This limit is based on the Permittee's allocation of Outfall 001's capacity agreed on with the Midway Sewer District. If the Permittee's allocation is changed through a new agreement with the Midway Sewer District, this limit shall be set at the new allocation.

2. pH

The final limit for pH is set at within the range of 6.0 to 9.0 standard units. This limitation is based on the determination of AKART to be neutralization for pH adjustment.

The final flow limitation for non-contact cooling water discharge is set at 28,800 gpd. This limitation is based on flow information submitted in the application. No discharge of vehicle washwater (excluding aircraft) is allowed to storm drains in this permit. This final effluent limitation is based on the determination that AKART for vehicle washwater is a closed-loop recirculation system with no discharge. Vehicle washwater may be discharged to the IWS or sanitary sewer. The discharge of aircraft washwater to storm drains will be addressed through the Storm Water Pollution Prevention Plan implementation required in Special Condition S10.

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 Water Quality Standards. The Washington State Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the waters of the state. The Department will use the designated classification criteria for this water body in the proposed permit.

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Water Quality-Based Limits for Numeric Criteria

Final effluent limitations will be determined by the Department upon the completion of the Engineering Report required in Special Condition S5.A and the Effluent Mixing Study required in Special Condition S6. 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 water quality criteria. Water quality-based limitations will be based on compliance with the Water Quality Standards (Chapter 173-201A WAC). This process will occur concurrently with the derivation of technology-based effluent limits.

Mixing Zone Authorization

The boundaries of a mixing zone for Outfall 001 will be defined by the Department based upon the findings of the Engineering Report required in Special Condition S5.A and the effluent mixing study required in Special Condition S6. The Permittee will be required to fully apply all known, available, and reasonable methods of prevention, control, and treatment (AKART) prior to the authorization of a mixing zone. The size of the mixing zone and the concentrations of pollutants present in the mixing zone will be minimized.

Whole Effluent Toxicity

Chapter 173-205 WAC, the Whole Effluent Toxicity Testing and Limits Rule, was promulgated on November 6, 1993. This regulation requires the characterization of effluents for toxicity and defines the circumstances under which whole effluent toxicity limits will be applied. The goal of the chapter is to eliminate the discharge of toxics in toxic amounts.

WAC 173-205-030(4) allows the Department to delay effluent characterization for whole effluent toxicity for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with water quality-based effluent limits. Special Condition S5.D delays the IWS effluent characterization for whole effluent toxicity until the completion of startup of the new or improved industrial wastewater treatment facility required in Special Condition S5.A. Special Condition S5.E delays the storm water discharge characterization for whole effluent toxicity until the completion of the implementation of the Storm Water Pollution Prevention Plan required in Special Condition S10.

Human Health

The conditions in this permit seek to protect aquatic life from toxic effects. It is assumed that protecting aquatic life will also protect the health of humans. If the Department finds that this permit does not protect human health, the permit will be modified to incorporate new conditions as needed.

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 that this discharge has the potential to cause a violation of the sediment quality standards. A condition has been placed in the permit which requires the Permittee to demonstrate that either the point of discharge is not an area of deposition or, if the point of discharge is a depositional area, that there is not an accumulation of toxics in the sediment.

The Department will determine final effluent limitations based on compliance with the Sediment Quality Standards. This process will occur concurrently with the derivation of technology-based effluent limits and water quality-based limits.

Ground Water Quality

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

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210) to verify the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring and testing schedule is detailed in the permit under Special Condition S3. 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.

OTHER PERMIT CONDITIONS

COMPLIANCE SCHEDULE

Industrial Wastewater Treatment

The Permittee is required in Special Condition S5.A to submit to the Department within eighteen months of the permit issuance date an engineering report describing plant modifications and/or additional wastewater treatment necessary for compliance with the final effluent limitations. The Department will use this report to determine all known, available, and reasonable methods of prevention, control, and treatment (AKART) for the IWS effluent. The engineering report will include a schedule for project design, construction, and startup. The schedule will become an enforceable part of the permit upon approval.

TSS Treatability Engineering Report

The Permittee is required to submit to the Department an engineering report which determines the relationship between the Dissolved Air Flotation (DAF) hydraulic loading rate, other DAF operating parameters, and effluent TSS on or before January 15, 1995. The Department will use the results from this report to determine appropriate TSS interim limitations required by S1.A.

Treatment System Operating Plan

The Permittee is required to submit an Operating Plan for the new or improved industrial wastewater treatment facility at least 180 days prior to the startup in compliance with Chapter 173-240 WAC.

Vehicle Washwater

The Permittee is required to submit a report within six months of the permit issuance date investigating the feasibility of converting all vehicle washwater discharges to closed-loop, no discharge systems.

Non-Contact Cooling Water

The Permittee is required to submit a report to the Department prior to the permit expiration date that investigates the feasibility of converting all non-contact cooling water discharges to closed-loop, no discharge systems.

EFFLUENT MIXING STUDY

Special Condition S6 requires the Permittee to accurately determine the mixing characteristics of the IWS discharge. Mixing will be measured one time under conditions specified in the permit. The mixing data will be applied to the industrial wastewater treatment system effluent data supplied in the engineering report required by Special condition S5.A to determine the need for and the size of the dilution zone.

SEDIMENT MONITORING (MARINE)

Special Condition S7 requires the Permittee to perform a comprehensive, site-specific Sediment Baseline Study for Outfall 001.

STORM WATER RECEIVING ENVIRONMENT MONITORING

Special Condition S8 requires the Permittee to prepare and implement a Storm Water Receiving Environment Monitoring Plan. The purpose of the Plan is to determine the impact of the storm water discharges on Miller and Des Moines Creeks. The following receiving environment issues will be addressed in the Plan:

- Instream whole effluent toxicity.
- Stream sediment impacts.
- Other sources of pollutants.
- Metals speciation (dissolved vs. total recoverable).
- Vegetation management
- Water quantity

STORM WATER POLLUTION PREVENTION PLAN

Special Condition S10 requires the Permittee to develop, implement, and comply with a Storm Water Pollution Prevention Plan (SWPPP). The Plan will contain the following elements:

- An assessment and description of existing and potential pollutant sources;
- A description of selected operational, source-control, erosion and sediment control, and treatment Best Management Practices (BMPs); and
- An implementation schedule.

The Permittee is required to submit the plan within 12 months of the permit issuance date, to complete the implementation of operational BMPs and applicable source control BMPs which do not require capital improvements within 24 months, and to complete the implementation of BMPs which require capital improvements prior to the permit expiration date.

The Permittee is also required to conduct two inspections of the storm water system per year, one each during the wet and dry seasons.

CONSTRUCTION EROSION AND SEDIMENT CONTROL

Special Condition S11 requires the Permittee to develop and implement a Construction Erosion and Sediment Control Plan prior to the commencement of any construction activity which disturbs five or more acres of total land area. Construction activities included in the requirement include clearing, grading, and excavation activities except operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale. The Plan must describe the stabilization and structural practices necessary to minimize the erosion and transport of sediments into surface waters of the state.

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 may require the Permittee to develop best management plans to prevent this accidental release under authority of 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee is required in Special Condition S12 to develop and implement a plan for preventing the accidental release of pollutants to waters of the state and for minimizing damages if such a spill occurs. The Port of Seattle's tenants at the airport may also be required to prepare a plan under the requirements of Chapter 90.56 RCW.

POND SLUDGE WASTE CHARACTERIZATION AND TREATMENT/DISPOSAL PLAN

Sludge material has been accumulating in IWS Lagoons 1 and 2 for eight years. The sludge accumulation has reduced the capacity of the ponds and causes odor problems. The Permittee is required to submit an storm water pond sludge waste characterization and treatment/disposal plan to the Department within six months of the permit issuance date. The purpose of this plan is to characterize and determine a treatment or disposal option for the existing sludge in the IWS lagoons. The Plan will include a schedule which will become an enforceable part of the permit.

GENERAL CONDITIONS

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

PERMIT MODIFICATIONS

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

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

RECOMMENDATION FOR PERMIT ISSUANCE

This 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 permit be issued for 3 years.

REVIEW BY THE PERMITTEE

A proposed permit was reviewed by the Permittee for verification of facts. Only factual items were corrected in the draft permit.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA), 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

Environmental Protection Agency (EPA), 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

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

Herrera Environmental Consultants and Hall & Associates, 1989. Des Moines Creek Restoration Project. Prepared for Municipality of Metropolitan Seattle.

Herrera Environmental Consultants, 1993. Water Quality Monitoring Report, Stormwater and Industrial Wastewater at Seattle-Tacoma International Airport. Prepared for Port of Seattle. October, 1993.

KCM, Inc., 1993. Port of Seattle, Sea-Tac Airport Comprehensive Stormwater and Industrial Wastewater Plan, Task 2 Report - Water Quality Characterization and Pollutant Loading Estimates. Draft, October 1993.

KCM, Inc., 1993. Port of Seattle, Sea-Tac Airport Comprehensive Stormwater and Industrial Wastewater Plan, Task 4 Report - De-icing Fluids Handling Practices. Draft, November 1993.

KCM, Inc., 1993. Sea-Tac Airport Comprehensive Stormwater and Industrial Wastewater Plan, Task 3 Report - Existing Industrial Wastewater System. Draft, July 1993.

Livingstone Associates, 1970. Comprehensive Plan for the Expansion of the Industrial Waste Sewerage System at Seattle-Tacoma International Airport. Prepared for the Port of Seattle under the direction of D.E. Dahlgard, Chief Engineer. February 1970.

Miller, A., 1993. Miller Creek Restoration. Memo from Alan Miller, Trout Unlimited, to Friends of Miller Creek, October 8, 1993, describing results of 6 months of in-stream monitoring.

Sills and Blakeslee, 1991. The Environmental Impact of Deicers in Airport Storm Water Runoff. Presented at the conference, "Alternative Deicing Technologies and the Environment," March 25-26, 1991, Michigan State University, Lansing, Michigan.

Stevens, Thompson and Runyan, Inc., 1974. Final Report, Water Quality and Drainage Study: Seattle-Tacoma International Airport and Vicinity Master Planning Program for Port of Seattle and King County.

University of Washington, 1972. Miller Creek Watershed. UW Department of Landscape Architecture.

Woodward-Clyde Consultants, 1993. Seattle-Tacoma International Airport De-icer/Anti-icer Study. Prepared for the Port of Seattle. January 1993.

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

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

Public notice of application was published on October 27, 1993 and November 3, 1993 in The Seattle Times to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on (date) in the Seattle Times, the Morning News Tribune/South King County, and the Highline Times to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 4:30 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

A Public Meeting will be held at the Des Moines Public Library on Wednesday, March 30, 1994 at 6:00 pm for the public to ask questions and find out more about the permit.

Any interested party may request a public hearing on this draft permit within the forty-five (45) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within forty-five (45) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (206) 649-7201, or by writing to the address listed above.

APPENDIX B—DEFINITIONS

1. "Ambient Water Quality" means the existing environmental condition of the water in a receiving water body.
2. "Best Management Practices" (BMPs) 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: 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.
3. "BOD" means biochemical oxygen demand. Determining the BOD of an effluent is an indirect way of measuring the quantity of organic material present in an effluent. BOD may cause a reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment.
4. "Capital Improvements" means the following improvements which will require capital expenditures:
 - a. Treatment BMPs, including but not limited to: biofiltration systems including constructed wetlands; settling basins, oil separation equipment, and detention and retention basins.
 - b. Manufacturing modifications, including process changes for source reduction, if capital expenditures for such modifications are incurred.
 - c. Concrete pads and dikes and appropriate pumping for collection of storm water and transfer to control systems, from manufacturing areas such as loading, unloading, outside processing, fueling and storage of chemicals and equipment and wastes.
 - d. Roofs and appropriate covers for manufacturing areas.
5. "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, 97-117; USC 1251 et seq.
6. "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, or industrial buildings, and demolition activity.

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7. "Daily Maximum Discharge Limitation" means the greatest allowable value for any calendar day.
8. "Engineering Report" means 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.
9. "Erosion" means the wearing away of the land surface by running water, wind ice, or other geological agents, including such processes as gravitational creep.
10. "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. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.
11. "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.
12. A "Grab" sample is a single sample or measurement taken at a specific time or over as short period of time as is feasible.
13. "Industrial Wastewater" means 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.
14. "Industrial Wastewater Facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim or dispose of industrial wastewater.
15. "Mixing Zone" means 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).
16. "National Pollutant Discharge Elimination System (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.
17. "Operational 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.

18. "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.
19. "Site" means the land or water area where any "facility or activity" is physically located or conducted.
20. "Solid Waste" means all putrescible and nonputrescible solid and semisolid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities. This includes all liquid, solid and semisolid materials which are not the product of private, public industrial, commercial mining and agricultural operations. Solid waste includes but is not limited to sludge from wastewater treatment plants and septage, from septic tanks, woodwaste, dangerous waste and problem wastes.
21. "Source Control BMPs" means physical or mechanical devices or facilities that are intended to prevent pollutants from entering storm water. A few examples of source control BMPs are erosion control practices, maintenance of storm water facilities, constructing roofs over storage and working areas, and directing washwater and similar discharges to the sanitary sewer or a dead end sump.
22. "Storm Water" 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 storm water drainage system into a defined surface water body, or a constructed infiltration facility.
23. "Technology-based Effluent Limit" is a permit limit that is based on the ability of a treatment method to reduce the pollutant.
24. "Total Suspended Solids (TSS)" 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.
25. "Treatment BMPs" means BMPs that are intended to remove pollutants from storm water. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

26. "Waters of the State" means 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.
27. "Water Quality-based Effluent Limit" is 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.