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POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

THE PORT OF SEATTLE,

Appellant,

v.

STATE OF WASHINGTON, DEPARTMENT
OF ECOLOGY,

Respondent.

AIRPORT COMMUNITIES COALITION,
CITIZENS AGAINST SEATAC
EXPANSION, and PUGET SOUNDKEEPER
ALLIANCE,

Appellants,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY, and PORT
OF SEATTLE (SEA-TAC
INTERNATIONAL AIRPORT)

Respondents.

PCHB Nos. 03-140, 03-141, 03-142

**PORT OF SEATTLE'S PRE-HEARING
BRIEF**

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1 **I. INTRODUCTION**

2 The NPDES permit the Washington Department of Ecology (Ecology) issued to the
3 Port of Seattle (Port) for the Seattle-Tacoma International Airport (STIA) on September 4,
4 2003 is at the forefront of stormwater regulation in Washington, and in the country as a whole.
5 It is one of a very few permits to contain numeric water quality-based effluent limits. It also
6 exceeds the standard for NPDES permits by requiring extensive toxicity testing of stormwater
7 discharges; requires the Port to retrofit existing stormwater controls at the entire airport;
8 requires a comprehensive, site-specific study of receiving waters; requires an exhaustive
9 review of available technology to identify Best Management Practices (BMPs) for control of
10 pollutants in discharges; requires monitoring far beyond what most comparable sites conduct;
11 and requires secondary treatment for wastewater exerting high Biochemical Oxygen Demand
12 (BOD). As Kevin Fitzpatrick, Water Quality Section Manager for Ecology’s Northwest
13 Regional Office, stated in the press release issued with the permit, “[t]his permit places Sea-
14 Tac Airport at the cutting edge of controlling stormwater pollution” and “[i]t sets important
15 standards and represents a significant investment and a serious commitment to clean water.”

16 **II. BACKGROUND**

17 **A. Stormwater and Wastewater Management at STIA**

18 STIA first obtained an NPDES Permit in 1980. Its Permit was reissued in 1988, 1994,
19 1998, and in 2003. The 1980 and 1988 Permits, which predated regulation of stormwater
20 under the NPDES program, applied only to discharges from the Industrial Wastewater System
21 (IWS). Later Permits applied to stormwater discharges from the Storm Drainage System
22 (SDS) as well as the IWS. Exs. 1, 3, 125, 126.

23 The IWS collects industrial wastewater generated primarily from stormwater that falls
24 on the air terminal and air cargo areas, hangars, and maintenance areas. Industrial wastewater
25 at STIA includes water used for industrial processes such as pipe integrity pressure testing,
26 and vehicle and aircraft washing, as well as stormwater contaminated with fuel, lubricants, fire

27

1 fighting foam, cleaning agents, and aircraft and ground surface deicing/anti-icing agents.

2 Duffner Testimony at ¶ 5.

3 The IWS conveyance system collects and transports wastewater to the Industrial
4 Wastewater Treatment Plant (IWTP). The IWTP was built in the early 1960s to treat water
5 contaminated by fuel spills. Over time, its capacity has increased. It now consists of three
6 lagoons and a treatment plant with six Dissolved Air Flotation (DAF) units. During the
7 IWTP treatment process, the Port adds coagulation chemicals to the influent wastewater. The
8 chemicals encapsulate suspended solids and oil droplets. The Port removes the suspended
9 materials from the wastewater in the DAF units. Treated wastewater from the IWTP is then
10 conveyed through a pipe and discharged via a diffuser into Puget Sound. The discharge occurs
11 1,400 feet from shore at a depth of 178 feet. *Id.* at ¶¶ 5–17.

12 The SDS collects stormwater runoff from several drainage subbasins at STIA and
13 discharges it at 14 different locations. Ex. 2 to Duffner Testimony (Figure 1 from Ex. 80).
14 Some of the discharges contain stormwater that is commingled with non-Port sources. Most
15 of the stormwater collected in the SDS drains to Des Moines Creek. A smaller amount drains
16 to Miller Creek, after first passing through the Lake Reba Stormwater Facility (LRSF). A
17 very small amount of SDS stormwater drains to Gilliam Creek. Duffner Testimony at
18 ¶¶ 18–29.

19 **B. Organization of the NPDES Permit**

20 The Port's Permit is divided into three parts. Part I applies to discharges from the
21 IWS. Part II applies to discharges from the SDS, which the Permit refers to as
22 "nonconstruction stormwater." Part III applies to discharges of stormwater from construction
23 projects at STIA, or "construction stormwater." Each part has subparts or conditions that are
24 designated as S1, S2, and so on. In order to identify various provisions of the permit,
25 therefore, it is necessary to identify the part of the permit as well as the specific section
26 within that part, for example, Part II, Condition S1.A.

27

1 The Port appealed a limited number of conditions in the permit, but some of the issues
2 the Port identified at the prehearing conference have now been withdrawn. At the hearing, the
3 Port intends to address the following issues:

- 4 1. Whether the effluent limits for stormwater in the NPDES permit, including the
5 lack of compliance schedules for meeting the effluent limits, are lawful and
6 appropriate?
- 7 2. Whether sampling frequency and monitoring requirements for stormwater in
8 the NPDES Permit are lawful and appropriate?
- 9 3. Whether the sampling locations for nonconstruction stormwater in the NPDES
10 Permit are lawful and appropriate?
- 11 4. Whether the list of outfalls for nonconstruction stormwater in the NPDES
12 permit is lawful and appropriate?
- 13 5. Whether conditions in the NPDES Permit relating to nonconstruction
14 stormwater turbidity, including the choice of parameters and the type of
15 sampling required, are lawful and appropriate?
- 16 6. WITHDRAWN
- 17 7. WITHDRAWN
- 18 8. Whether conditions in the NPDES Permit relating to sublethal toxicity testing
19 of nonconstruction stormwater are lawful and appropriate?
- 20 9. Whether conditions in the NPDES Permit relating to Biological Oxygen
21 Demand (BOD) from industrial wastewater, including the numeric benchmark,
22 testing requirements, and provisions for exceeding the benchmark, are lawful
23 and appropriate?
- 24 10. WITHDRAWN
- 25 11. Whether the interim “milestone” dates for the AKART pipeline in the NPDES
26 Permit are lawful and appropriate?

1 determine whether the Port’s stormwater discharges have a “reasonable potential” to violate
2 water quality standards; did not consider site-specific information when developing effluent
3 limits, including evaluation of a mixing zone; and did not otherwise properly calculate numeric
4 effluent limits. Instead of following proper procedures, Ecology chose numeric effluents from
5 the federal Multi-Sector General Permit (MSGP), in which EPA set forth benchmark values
6 for stormwater. The MSGP, however, specifically states that the benchmarks “should not be
7 interpreted or adopted” as effluent limits. Graves Testimony at ¶¶ 11–14; Bryden Testimony
8 at ¶¶ 6–7; Exs. 92, 96, 99, 14.

9 Nathan Graves and other Port witnesses will testify that EPA and Ecology generally
10 regulate stormwater discharges by requiring the implementation of Best Management Practices
11 (BMPs). *Id.* at ¶¶ 4–10. Ecology’s regulations provide that for stormwater discharges, the
12 “primary means to be used for requiring compliance with the [water quality] standards shall
13 be through best management practices.” *See* WAC 173-201A-160(3)(d). If a discharger
14 applies all appropriate BMPs, and a violation of water quality criteria occurs, the regulations
15 require the discharger to modify existing practices or apply further BMPs. *See* WAC 173-
16 201A-160(3)(b). The Legislature recently endorsed this “adaptive management” approach to
17 controlling stormwater discharges in general permits. In the 2004 session, it enacted ESSB
18 6415, which “encourages, to the extent allowed under existing state and federal law, an
19 adaptive management approach to permitting storm water discharges.” ESSB at § 1(6).

20 BMPs are technology-based effluent limits. On numerous occasions — including at
21 STIA in the appeal of the Port’s 401 Certification and, most recently, in its Order on Partial
22 Summary Judgment of July 2, 2004 — this Board has ruled that application of BMPs is
23 considered AKART for stormwater and meets the requirements of the Clean Water Act. Ex.
24 186 (*Airport Communities Coalition v. Ecology*, PCHB No. 01-160, Findings of Fact,
25 Conclusions of Law, and Order) (August 12, 2002) and *Save Lake Sammamish v. Ecology*,
26 PCHB No. 95-141 (Order Granting Partial Summary Judgment) (June 27, 1996).

1 The Permit requires the Port to prepare an “AKART analysis Engineering Report”
2 that evaluates existing and potential new BMPs for controlling its stormwater discharges at
3 STIA. Ex. 1, Part II, Condition S9. The Permit sets a schedule for submitting the Engineering
4 Report, as well as for constructing new BMPs selected in the Engineering Report. *Id.* The
5 Port is required to implement new BMPs, and to meet numeric effluent limits by December
6 31, 2007. *Id.* Thus, the Permit contemplates that the Port will implement additional BMPs
7 for stormwater, including the enhanced treatment BMPs this Board required in its Final Order
8 in *Airport Communities Coalition v. Ecology*, PCHB No. 01-160. Unfortunately, these
9 numeric effluent limits will become effective before the new BMPs have been in operation
10 long enough to determine their effectiveness.

11 AKART should be fully implemented, however, before the need for water-quality
12 based effluent limits is considered. Nathan Graves will testify that water-quality based
13 effluent limits should be established only when a site-specific analysis demonstrates that there
14 is a “reasonable potential” for a discharge to cause or contribute to a violation of water quality
15 standards. Graves Testimony at ¶¶ 6–10. Ecology has not performed any site-specific
16 analysis with regard to the Port’s stormwater discharges to determine whether there is a
17 reasonable potential to violate water quality standards. Gregg Bryden will testify that a
18 preliminary analysis of reasonable potential for copper violations does not constitute a
19 reasonable potential analysis for a variety of reasons. Bryden Testimony at ¶ 6–7. Despite
20 having imposed numeric effluent limits, it appears that Ecology does not believe a reasonable
21 potential exists. The Permit fact sheet states that “source control BMPs and treatment BMPs
22 as necessary are expected to prevent water quality violations.” Ex. 4. To the extent that
23 BMPs adequately protect water quality, there is no need to establish water quality-based
24 effluent limits.

25 The process by which Ecology developed the numeric effluent limits in Parts II and III
26 of the Permit was flawed. For that reason, Port witnesses will testify that the Permit should
27 be modified by converting numeric effluent limits to benchmarks. The benchmarks would be

1 used – as EPA intended – to evaluate the effectiveness of BMPs, including both those already
2 in place and those to be implemented as a result of the AKART determination. If, after
3 additional BMPs are implemented, there is still a reasonable potential to violate water quality
4 standards, numeric effluent limits can be developed.

5 **B. Issue 2 – Stormwater Sampling Frequency**

6 The Permit requires the Port to sample thirteen stormwater “outfalls” each month, for
7 a total of at least 156 samples per year. Ex. 1, Part II, Condition S1. This represents a
8 significant and unwarranted increase over the amount of sampling required in the Port’s
9 previous Permit. The Permit fact sheet does not provide any explanation for the increased
10 sampling frequency. While the Port does not oppose additional sampling, the increase must
11 achieve a corresponding benefit, proportionate to the increased cost of sampling, which the
12 additional samples under the Permit do not. Tobiason Testimony at ¶¶ 24–35.

13 Under the Port’s 1998 Permit, no stormwater “outfall”¹ was sampled more than 8
14 times per year (with at least one sample collected each quarter). Ex. 2. Four of the “outfalls”
15 were sampled at that frequency, and another seven were sampled once each year. The
16 “outfalls” sampled less frequently are substantially equivalent to other “outfalls” sampled
17 more frequently. Ecology previously determined that stormwater quality from the seven
18 “outfalls” sampled once each year was similar to stormwater quality from “outfalls” sampled
19 more frequently, and that it was unnecessary to sample all “outfalls” at the higher frequency.

20 A very high percentage of stormwater samples collected at STIA has shown pollutant
21 concentrations at or below MSGP benchmarks. Tobiason Testimony at ¶ 6; Exs. 80, 165,
22 166. In addition, past sampling has characterized stormwater quality across years, months,
23 seasons, and periods of significant change, such as implementation of BMPs.

24 If any change in frequency is warranted, it should be a reduction. Ecology’s Permit
25 Writer’s Manual and EPA’s Interim Guidance for Performance-Based Reductions of NPDES

26 ¹ The Permit uses the term “outfall” rather than “sampling point.” Several of the sampling locations specified in
27 the Permit do not discharge to receiving waters and therefore do not constitute what one would normally
consider an “outfall.” For example, the SDE4 “outfall” is a sampling location in a 5-foot diameter drainage pipe
buried 20 feet under International Boulevard.

1 Permit Monitoring Frequencies both allow reduced sampling frequency based on consistent
2 attainment of benchmarks. Exs. 14, 101. Based on data presented in the Port’s Annual
3 Stormwater Monitoring Reports, average levels of TPH, TSS, BOD, copper, lead, and zinc at
4 eight outfalls have been less than half their respective benchmarks. Under the guidance
5 documents mentioned above, these outfalls should qualify for a reduction in sampling
6 frequency. Tobiason Testimony at ¶¶ 39–41.

7 In addition to being unnecessary, the more frequent sampling required in the current
8 Permit creates significant logistical problems for the Port. Opportunities to sample
9 stormwater discharges may be missed for a variety of reasons. For example, equipment may
10 fail to perform properly. By the time the problem is discovered, it may be too late to correct
11 it and collect a valid sample, especially during dry months when storms are infrequent. *Id.* at
12 ¶¶ 28–33.

13 The requirement to collect monthly samples also leads to costly wasted efforts.
14 Certain months provide a limited number of rainfall events that meet minimum qualifying
15 criteria under the Permit. In addition, not all storms are forecasted, or are forecasted to be
16 large enough to be considered qualifying events under the Permit. To avoid missing what may
17 be the only sampling opportunity in a month, the Port must have staff available 24-7. If the
18 storm they begin sampling ultimately does not meet the minimum rainfall amount of 0.1 inches
19 in a 24-hour period, then the sampling effort will have been wasted. *Id.*

20 Mr. Tobiason will testify that the sampling requirements in the Permit should, at a
21 minimum, be modified so they are identical to the requirements in the 1998 Permit.
22 Alternatively, for those parameters whose long-term average concentration is less than 50% of
23 the appropriate benchmark, the frequency of sampling should be reduced to once quarterly.

24 **C. Issue 3 – Stormwater Sampling Locations**

25 The Permit includes numeric effluent limits for all stormwater “outfalls,” including
26 those where stormwater from STIA commingles with stormwater from other sources. Ex. 1,
27 Part II, Condition S1. The “outfalls” with commingled stormwater are SDE4, SDS1, SDS2,

1 SDS3, and SDN1. These “outfalls” drain several streets and roads around STIA, including SR
2 99 (International Boulevard), South 188th Street, 16th Avenue South, South 154th Street, and
3 24th Avenue South. Tobiason Testimony at ¶¶ 43–44; Exs. 106, 107.

4 For three of these “outfalls” – SDE4, SDS1, and SDS3 – it is impossible or
5 impracticable to collect STIA stormwater before it mixes with stormwater from other sources.
6 Runoff from City of SeaTac streets enters these drainage systems at multiple locations.
7 Collection systems within the City of SeaTac would have to be modified to separate the City
8 stormwater discharges from the STIA stormwater discharges. Scott Tobiason will testify that,
9 in his opinion, it is inappropriate to impose numeric effluent limits on stormwater at locations
10 where the Port cannot control all of the discharges. *Id.*

11 In addition, Mr. Tobiason will testify that it is inappropriate to impose water quality-
12 based numeric effluent limits at “outfalls” that are far removed from receiving waters. The
13 best location to characterize stormwater discharges, and to determine whether they are causing
14 or contributing to exceedances of water quality standards, is at the ultimate point of discharge
15 to receiving waters. Yet only three “outfalls” specified in the permit (SDE4, SDS1, and SDS4)
16 are located “at the point of discharge” to receiving waters. The other “outfalls,” including
17 SDS2, SDS3, SDS5-SDS7, and EY, are significantly upgradient from the receiving waters. The
18 four “outfalls” to the LRSF (SDN1-SDN4) are 1/2 mile or farther from the receiving waters of
19 Miller Creek. Sampling conducted at these “outfalls” will not provide information about the
20 actual discharge to receiving waters. *Id.* at ¶¶ 46–49.

21 The Permit also imposes conflicting requirements for sampling locations that are
22 impossible to meet. First, the Permit specifies latitude/longitude coordinates for each
23 “outfall.” *See* Ex. 1, Part II, Condition S1. Second, the Permit provides a narrative description
24 of each sampling point, which is “at the point of discharge.” Ex. 1, Part II, Condition S1.A
25 and S1.B, Tables 1 and 2. Third, the Permit requires that samples be collected “immediately
26 after applicable BMP(s), but prior to mixing with any other flow.” Ex. 1, Part II, preamble to
27 Condition S1. Finally, the Permit states that “All samples shall be taken at the sampling point

1 specified in the permit, or as close to the point of discharge as reasonably practical.” Ex. 1,
2 Part II, Condition S1.C.2. As discussed above, most “outfalls” are located a significant
3 distance from receiving waters, and the stormwater at many “outfalls” is commingled with
4 runoff from non-STIA sources. Moreover, several “outfalls” are located upstream of
5 applicable BMPs. For example, “outfalls” SDN1-SDN4 discharge to LRSF, a stormwater
6 detention facility that is an important and “applicable” BMP. Samples taken from these four
7 “outfalls” do not reflect the treatment benefits provided by LRSF. Because it is impossible
8 for the Port to meet these conflicting requirements in certain sampling locations, the
9 requirements should be modified.

10 **D. Issue 4 – Stormwater Discharges Not Associated With Industrial Activity**

11 NPDES permits are required for stormwater discharges associated with industrial
12 activity. “Stormwater discharges associated with industrial activity” is narrowly defined to
13 include discharges “from any conveyance that is used for collecting and conveying storm water
14 and that is directly related to manufacturing, processing or raw material storage areas at an
15 industrial plant.” *See* 40 C.F.R. §122.26(b)(14). With respect to transportation facilities such
16 as STIA, the only types that are considered to be engaging in “industrial activity” for
17 purposes of this definition are those that have:

18 vehicle maintenance shops, equipment cleaning operations, or airport deicing
19 operations. Only those portions of the facility are either involved in vehicle
20 maintenance (including vehicle rehabilitation, mechanical repairs, painting,
21 fueling, and lubrication), equipment cleaning operations, airport deicing
22 operations, or which are otherwise identified under paragraphs (b)(14)(i)-(vii)
23 or (ix-xi) of this section are associated with industrial activity.

24 *See* 40 C.F.R. § 122.26(b)(14)(viii).

25 The Permit imposes monitoring and other requirements on certain “outfalls” that do
26 not discharge stormwater associated with industrial activity. Ex. 1, Part II, Condition S1.
27 Scott Tobiason will testify that the areas draining to “outfalls” SDS1, SDS2, SDS6, and
SDN1, all of which are regulated under the Permit, are not “associated with industrial
activity.” Tobiason Testimony at ¶¶ 52–53. Therefore, Permit requirements relating to these
four “outfalls” should be deleted.

1 **E. Issue 5 – Turbidity Parameter**

2 Scott Tobiason will testify that the Permit’s requirements for measuring suspended
3 materials in stormwater discharges are inconsistent with other stormwater permits, with
4 historic practices, and with Ecology guidance documents.

5 The Permit requires the Port to analyze nonconstruction and construction stormwater
6 samples for turbidity. Ex. 1, Part II, Condition S1.A; Part III, Condition S1.A.2. Other
7 stormwater permits issued by EPA and by Ecology measure BMP performance with Total
8 Suspended Solids (TSS) rather than turbidity. Exs. 82, 92, 93. In addition, Ecology’s
9 *Guidance for Evaluating Emergency Stormwater Treatment Technologies* and its *Stormwater*
10 *Management Manual for Western Washington* recognize that TSS, not turbidity, is the
11 appropriate parameter to evaluate performance of BMPs. Exs. 108, 109, 121; Tobiason
12 Testimony at ¶ 56.

13 Ecology’s protocols also require that TSS be measured with flow-weighted composite
14 samples, rather than with the grab samples specified in the Port’s Permit. Flow-weighted
15 composite samples account for variability inherent in stormwater discharges. This type of
16 sample provides an event mean concentration (EMC), which is the standard way of measuring
17 pollutants in stormwater discharges. Tobiason Testimony at ¶ 57–58.

18 The Permit sets an effluent limit of 25 NTU for turbidity in both nonconstruction and
19 construction stormwater. Ex. 1, Part II, Condition S1.A; Part III, Condition S1.A.2. While all
20 other numeric effluent limits for nonconstruction stormwater in the Port’s Permit were taken
21 from the MSGP benchmarks, the turbidity limit was based only on Ecology’s unspecified
22 “field experience.” Ex. 4 at 26, 31. Ecology did not use any established procedures or
23 guidelines, such as a reasonable potential analysis, to develop these numeric effluent limits.

24 **F. Issue 8 – Sublethal Toxicity**

25 Part II, Section 8, of the Permit requires the Port to conduct sublethal toxicity testing.
26 The Port’s expert toxicologist, Dr. Rick Cardwell, and Ecology’s Whole Effluent Toxicity
27 Coordinator, Randy Marshall, will testify at the hearing regarding the requirements imposed

1 by this section of the Permit. Notably, Dr. Cardwell and Mr. Marshall, each having
2 conducted an independent evaluation of these requirements, have reached the same primary
3 conclusions. They agree that the 7-day duration of the test prescribed by the Permit,
4 commonly referred to as the “E Test,” exceeds the vast majority of stormwater runoff
5 durations at STIA and may therefore overestimate sublethal toxicity effects at this site.
6 Cardwell Testimony at ¶¶ 12–17; Exs. 152–158. Their conclusion is supported by the fact
7 that certain sampling locations designated by the Permit, particularly those corresponding to
8 stormwater outfalls as opposed to in-stream locations, are categorically inappropriate for
9 sublethal toxicity testing. *Id.*; Ex. 4. Dr. Cardwell and Mr. Marshall will express their shared
10 opinion that implementing the E Test in accordance with Permit requirements would present
11 several logistical problems, including the availability, acquisition, and coordination of the
12 necessary rainbow trout eggs and sperm and fresh stormwater samples on May 1 and
13 November 1, the sampling dates prescribed by the Permit. Cardwell Testimony at ¶¶ 19–20.
14 Most importantly, Dr. Cardwell and Mr. Marshall will each testify that the E Test may not
15 be used to characterize stormwater discharges for compliance with state whole effluent
16 toxicity (WET) performance standards because the test is not presently valid under WAC
17 173-205-050(1)(d). Cardwell Testimony at ¶ 11; Exs. 1, 4, 159.

18 Dr. Cardwell’s and Mr. Marshall’s testimony on these and related issues is
19 un rebutted. Appellants ACC/CASE and PSA will offer no documentary or testimonial
20 evidence from any qualified witness challenging the opinions of these witnesses.

21 **G. Issue 9 – BOD Benchmark**

22 The Permit sets a numeric effluent limit of 250 mg/L for Biological Oxygen Demand
23 (BOD) in discharges from the Port’s IWTP. Ex. 1, Part I, Condition S1.A. Table 1-A. In
24 addition, the Permit sets a monthly average benchmark of 30 mg/L for BOD in this discharge.
25 *Id.* at Table 1-B. The Permit states that:

26 Benchmark Maximum Monthly Average Concentration is the goal that should
27 eventually be met by the Permittee through its Adaptive Management Program.
Exceeding Benchmark Maximum Monthly Average Concentration will not be
considered violation of this permit as long as Permittee addresses such

1 exceedances adequately in SWPPP and in its annual updates. The updated
2 SWPPP must provide action plan to eliminate any such exceedances in the
3 future.

4 *Id.* at Table 1-B, footnote 1. The Port's consultant, Ed Kistner, will testify that the BOD
5 benchmark of 30 mg/L is not based on an AKART analysis and is not necessary to meet water
6 quality standards.

7 Beginning with the 1994 permit, the Port conducted a number of studies to identify
8 AKART at the Industrial Waste Treatment Plant (IWTP). Kistner Testimony at ¶¶ 12–17;
9 Exs. 17, 35, 38, 53, 57, 65, 115, 116, 117. Ultimately, Ecology approved an Engineering
10 Report and an Addendum #2 describing AKART for the IWTP. Exs. 36 and 37. Ecology
11 determined that AKART for the IWTP consists of constructing a pipeline to send effluent
12 from the IWTP to the King County Sewage Treatment Plant (STP) in Renton when the BOD
13 content of that effluent exceeds 250 mg/L. Ex. 37. A benchmark that requires the Port to
14 reduce BOD discharges to 30 mg/L is illogical since Ecology's AKART determination
15 established the required effluent limit at 250 mg/L. The 30 mg/L limit is the limit for a
16 Publicly Owned Treatment Works (POTW), and AKART for POTWs has been deemed by
17 EPA to require secondary treatment of effluent. Because the IWTP is not a POTW, Ecology
18 cannot impose the 30 mg/L benchmark without an AKART analysis showing that 30 mg/L is
19 reasonably achievable for the IWTP. Since Ecology has already determined that AKART at
20 the IWTP allows BOD to be discharged up to 250 mg/L, the 30 mg/L BOD benchmark is
21 inconsistent and should be deleted from the Permit.

22 **H. Issue 11 – Interim Milestone Dates for AKART Pipeline**

23 The NPDES Permit includes a schedule for constructing a pipeline that will convey
24 wastewater from the IWTP to the STP in Renton. Ex. 1, Part I, Condition S10. The first
25 milestone date in this schedule is August 15, 2003 for Design Completion. *Id.* The Port will
26 present evidence that this milestone date is unreasonable. The date had already passed by the
27 time the Permit was issued on September 4, 2003. Randy Sweet will testify that while the
28 Port has already completed design of most of the pipeline, it will not complete design of the

1 last segment until December 2004. Randy Sweet Testimony at ¶¶ 16–18. The milestone date
2 for Design Completion should therefore be changed to December 2004. Moving the milestone
3 date for Design Completion will not delay the Port’s compliance with the remaining milestone
4 dates and deadlines in the AKART pipeline schedule. *Id.*

5 **I. Issue 12 – Northwest Ponds/Issue 15 – Lake Reba**

6 The Permit imposes numeric effluent limits on stormwater discharges to Northwest
7 Ponds. Ex. 1, Part II, Condition S1.A. Ecology imposed these limits after concluding that
8 Northwest Ponds are waters of the state to which water quality standards apply.

9 The Port will present evidence that Northwest Ponds are “treatment wetlands,” or
10 wetlands intentionally constructed on nonwetland sites and managed for the primary purpose
11 of stormwater treatment. Exs. 86, 131–147, 149, 163, 199; *see* WAC 173-201A-020
12 (definition of “treatment wetlands”). Treatment wetlands generally are not subject to water
13 quality criteria. *Id.*; Exs. 118–121.

14 At the hearing, Paul Fendt will testify that Northwest Ponds were constructed over a
15 several-year period, beginning before 1960. The area on which they were built was previously
16 farmed in row crops. A soil survey prepared in c1938 and republished in 1952 indicates that
17 soils in this area were hydric under current definitions. However, to Mr. Fendt’s knowledge,
18 there is no wetland delineation or other evidence discussing whether or to what extent this area
19 was wetlands prior to farming. Fendt Testimony at ¶¶ 12–15; Exs. 134–147.

20 Mr. Fendt will further testify that, in his opinion, between 1969 and 1970, the Port
21 intentionally redirected stormwater flow from the airfield to Northwest Ponds. The Port
22 operates and maintains Northwest Ponds as a stormwater detention facility by maintaining
23 vegetation, monitoring, and inspecting and replacing oil booms located in the ponds. Fendt
24 Testimony at ¶¶ 15–18.

25 Northwest Ponds are effective at removing pollutants from stormwater. The highest
26 removal efficiencies are for zinc (70-98% in various sampling events) and TSS (44-95% in
27 various sampling events). Fendt Testimony at ¶¶ 19–21. The Permit fact sheet recognizes

1 that Northwest Ponds function as a “detention facility serving multiple stormwater discharges
2 including the Port and city of SeaTac.” Ex. 4. Since Northwest Ponds is a constructed
3 stormwater detention facility, the Permit should not apply numeric effluent limits to
4 stormwater discharging to the facility.

5 Issue 15 raises a related question, whether the Lake Reba Stormwater Facility is
6 “waters of the state” such that the Permit should regulate stormwater discharges to LRSF.
7 The Port will present evidence that LRSF is a stormwater detention facility to which water
8 quality standards do not apply. Exs. 11, 12, 67, 68, 79, 86, 107, 113, 122, 123, 179, 184, 185.
9 The Port built LRSF in 1973. Ex. 68. The fact sheet correctly notes that LRSF is a
10 “constructed stormwater detention facility.” Ex. 4. In a 1997 letter to the Port, Ecology
11 confirmed that LRSF “is not considered waters of the State because it is a constructed
12 stormwater detention pond.” Ex. 122. Furthermore, sampling data have shown that LRSF
13 reduces pollutant loadings in stormwater considerably. Exs. 86, 113. For these reasons, it is
14 appropriate that the Permit does not regulate stormwater discharges to LRSF.

15 **J. Issue 13 – Flow Control Standard for Construction Stormwater**

16 The Permit requires the Port to protect properties and waterways downstream of
17 construction sites from erosion caused by increased stormwater runoff. The Permit specifies
18 that the “stormwater discharge rate shall not exceed 50% of the predevelopment peak flow
19 rate for the 2-year, 24-hour storm, and shall maintain the existing condition peak runoff rate
20 for the 10-year, 24-hour and the 100-year, 24-hour design storms.” Ex. 1, Part III, Condition
21 S5.B.1.b.iv. This condition appears to require the Port to control stormwater flow rates at all
22 construction sites, regardless of project size, expected timing, or duration of construction.

23 Bob Duffner will testify that this condition is inconsistent with other provisions of the
24 Permit, which require the Port to comply with Ecology’s Stormwater Management Manual
25 for Western Washington (SWMMWW). Ex. 1, Part III, Condition S5.A.9; Ex. 121. The
26 SWMMWW requires flow rate control of construction stormwater only under certain
27 circumstances, such as when a minimum amount of land is converted to other uses. Many

1 construction projects at STIA fall below the thresholds set out in the SWMMWW, and thus
2 would not require any flow rate controls.

3 Even for those construction projects that require flow rate controls, the design
4 standard stated in the Permit is inappropriate. Mr. Duffner will testify that under the
5 SWMMWW, flow control for “short duration” construction projects (those less than one
6 year) should be based on the 2-year, 24-hour storm event. The SWMMWW states that the
7 10-year, 24-hour event should be used as a design basis “if the project size, expected timing
8 and duration of construction, or downstream conditions warrant a higher level of protection.”
9 The only circumstance in which the SWMMWW calls for use of the 100-year storm is to size
10 and design emergency overflow spillways for flow control facilities. Thus, the SWMMWW
11 does not use the 100-year storm described in the Permit as a basis for flow control. Mr.
12 Duffner will testify that the Permit should be modified to state that the stormwater discharge
13 rates from construction sites shall be controlled in accordance with the SWMMWW.

14 **K. Issue 14 – Minor Errors**

15 The Permit includes a number of minor mistakes, including typographical and
16 consistency errors. Bob Duffner will describe these errors and explain how each one should be
17 corrected.

18 **L. Other Issues Raised by ACC, CASE, and PSA**

19 The Port briefed Issues 17(a) and 19 in its Response to the Partial Summary
20 Judgments Motions filed by ACC, CASE, and PSA. The Port hereby incorporates by
21 reference the statements contained in its Response Brief and supporting materials.

22 **M. Implementation of AKART at IWTP**

23 The Port has established AKART for discharges from the IWTP through a series of
24 engineering reports and studies, including a 1995 IWS Engineering Report (Ex. 38); a 1997
25 Effluent Mixing Zone Study (Ex. 117); a 1998 1st Addendum to Engineering Report (Ex. 57); a
26 2001 Status Report – AKART Implementation (Ex. 17); a 2002 2nd Addendum to Engineering
27 Report (Ex. 35); a 2002 Environmental Site Assessment, Lagoon #3 (Ex. 190); a 2002

1 Addendum Engineering Report for Lagoon #3 Expansion (Ex. 18); and a 2003 Business
2 Analysis for Proposed AKART Alternative (Ex. 53). Kistner Testimony at ¶¶ 12–20; Sweet
3 Testimony at ¶¶ 6–15. A critical component of these studies has been a progressive
4 evaluation of how other airport facilities manage BOD in their wastewater. *See* Ex. 38
5 (Section 4.2.1), Ex. 57 (Appendix E), Ex. 35 (Section 3.2). In response to the Board’s specific
6 request in its July 2, 2004 Order on Partial Summary Judgment, Port witnesses will further
7 expound on these and related issues during their oral testimony.

8 From the studies it performed and commissioned over a nearly decade-long period,
9 aided by its exchange of comments and concerns with Ecology during this period (see, e.g.,
10 Exs. 36, 55, 56, 58, 124), the Port has determined the level at which current technology can
11 reasonably achieve reductions in BOD from IWTP effluent at this site. On-line analyzers will
12 segregate wastewater of differing BOD concentrations, allowing the transport of high-BOD
13 wastewater to the STP in Renton and the discharge of low-BOD wastewater to a marine
14 outfall in Puget Sound. Ecology approved this treatment methodology, set forth in the Port’s
15 2002 Addendum, as AKART. Ex. 37. Appellants ACC/CASE and PSA now challenge the
16 AKART determination, arguing that AKART requires secondary treatment of IWS
17 wastewater.

18 The Port’s lengthy, comprehensive, and progressively-evolving evaluation of various
19 treatment alternatives, their relative feasibilities, and their respective associated costs, is
20 outlined in the Pre-Filed Testimony of consultant Ed Kistner, who prepared the original
21 Engineering Report and Addenda, and Port Senior Engineer Randy Sweet. That evaluation can
22 be summarized as follows:

23 The Port’s 1995 Engineering Report studied various alternatives for addressing BOD
24 content in effluent from the IWS. The Report recommended removal of sediments from
25 certain lagoons; installation of liners in all lagoons; installation of electric operators on lagoon
26 control valves; implementation of a new telemetry system for remote monitoring and
27 operation of valves; upgrades to the Lagoon #3 pump station; installation of new flow control

1 pH control instrumentation and new chemical feed systems; rehabilitation of the dissolved air
2 flotation (DAF) float tank; and installation of two new 250-square-foot DAF units. It also
3 recommended that the Port develop a program for the collection of aircraft deicing fluid (ADF)
4 at ramp areas by five new vacuum collection trucks, special inserts for stormwater drains, and
5 new storage tanks. The estimated construction cost for this alternative, including contingency,
6 engineering, and sales tax, totaled \$9.2 million.

7 To test the effectiveness of vacuum sweepers, the Port conducted a pilot glycol
8 sweeping program during the winter of 1996 – 97. The pilot program revealed that a vacuum
9 sweeping program would not be effective and would not constitute a reasonable way to
10 achieve AKART.

11 At Ecology’s request, the Port then prepared an Addendum to the Engineering Report.
12 Ex. 57. That 1998 report outlined an updated evaluation of various alternatives then available
13 to address BOD content. It recommended that Lagoon #3 be cleaned, lined, and enlarged from
14 25 to 47 million gallons and that effluent from the IWTP be rerouted to a local POTW. The
15 report estimated the capital cost for this alternative to be approximately \$20 million, with
16 annualized operating costs estimated at \$5.8 million.

17 Ecology never approved the alternative described in Addendum #1. It did, however,
18 direct the Port to proceed with cleaning and lining the IWS lagoons and enlarging the capacity
19 of Lagoon #3. In April 2002, it submitted a second Addendum to the 1995 Engineering
20 Report. Ex. 35. When the original Report and 1998 Addendum were prepared, real-time
21 measurement of BOD concentrations in wastewater – and, therefore, segregation of effluent of
22 differing BOD levels – was not technologically possible. Since the 1998 Addendum, however,
23 analyzers had been developed that could perform real-time measurement of BOD
24 concentrations.

25 The 2002 Addendum recognized that this new technology changed AKART for the
26 IWS, whose three existing lagoons would allow the segregation of wastewater based on BOD
27 content. Accordingly, that Addendum recommended that the Port install online BOD

1 monitors and segregate wastewater flowing into the IWS lagoon system. It proposed that the
2 Port construct a new pump station and forcemain to route high-BOD wastewater to the STP
3 following treatment in the IWTP. Low-BOD concentration wastewater, with BOD
4 concentrations lower than 250 mg/l, would be discharged to the Puget Sound via the Midway
5 Outfall after treatment. The total project cost for this alternative was estimated to be \$18.6
6 million, with annualized operating costs of approximately \$3.5 million.

7 The Port engaged in extensive communications with King County regarding the
8 acceptance of high-BOD effluent from the IWTP into the STP. Because use of online
9 analyzers and wastewater segregation would reduce the overall volume of wastewater and
10 would preserve regional conveyance and treatment capacity of the STP, King County
11 supported this methodology. Sweet Testimony at ¶ 13.

12 Appellants ACC/CASE and PSA now contend that the Port must revert to the
13 treatment methods outlined in the 1st Addendum. In challenging the Port's plan, appellants
14 fail to consider that "known and available" technologies for treating IWS wastewater have
15 arisen since 1998.² On a more fundamental level, they fail to recognize that AKART requires
16 a reasonableness determination based on a two-pronged analysis of engineering and economic
17 factors. In short, a particular technology can meet the AKART standard only if it passes a
18 cost-benefit test.

19 Here, Ecology appropriately determined that secondary treatment is "known,
20 available, and reasonable" for IWS wastewater with BOD concentrations exceeding 250 mg/L.
21 It recognized that the cost of secondary treatment of wastewater below those levels would
22 outweigh the benefits of such treatment. That fact is readily revealed by the cost analysis
23 performed by the Port. Kistner Testimony at ¶¶ 12–17; Sweet Rebuttal Testimony at
24 ¶¶ 4–5. Notably, appellants' expert engineer, Timothy Fann, has performed no such cost
25 analysis, a failure that calls into question whether he is even qualified to render opinions
26

27 ² The Port offers a more comprehensive discussion of the various components of AKART in its Brief in
Opposition to Motion for Partial Summary Judgment re: AKART Issue, Section III(A), which it incorporates
herein by reference.

1 regarding what constitutes AKART at this facility. Exs. 160, 161. As will be revealed during
2 the hearing, Mr. Fann's analysis of the feasibility of transporting all IWS effluent to the STP
3 and his related proposal of on-site biological treatment are inadequate in numerous other
4 respects.

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