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BEFORE THE POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

AIRPORT COMMUNITIES
COALITION,

Appellant,

CITIZENS AGAINST SEA-TAC
EXPANSION,

Intervenor/Appellant,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY; and
PORT OF SEATTLE,

Respondents.

NO. 01-160

DIRECT TESTIMONY OF
ED O'BRIEN SUBMITTED ON
BEHALF OF THE DEPARTMENT OF
ECOLOGY

AR 002942

1 Ed O'Brien, declares as follows:

2 **I. My Background**

3 1. I am employed by the Department of Ecology (Ecology) in the headquarters
4 office of the Water Quality Program. I have been employed by Ecology for 22 years. My title
5 is Environmental Engineer 4. I have been assigned to stormwater issues for eleven years. For
6 the past three years, my primary responsibility has been to help develop a stormwater
7 management manual for Western Washington. In past years, I have also participated in the
8 development and implementation of NPDES permits for stormwater discharges from municipal
9 storm sewers, from construction activities, and from industrial sites. My role in developing
10 Ecology's most recent stormwater management manual was as the lead staff person for
11 Volume 1 – "Minimum Technical Requirements and Site Planning"; for chapters 2 – 4 of
12 Volume V – "Runoff Treatment Best Management Practices (BMPs);" and as a support person
13 for Volume III – Hydrologic Analysis and Flow Control Design/BMP's. I am currently
14 involved in delivering training to local governments and consultants on the use of the new
15 manual.

16 2. My educational background includes a Bachelor of Science degree in 1975 in
17 Engineering Science from the University of Notre Dame, and a Master of Science degree in
18 1976 in Environmental Health Engineering from the University of Notre Dame.

19 **II. Ecology's 2001 Stormwater Manual**

20 3. Ecology's most recent Stormwater Management Manual for Western
21 Washington was published in September 2001. Therefore, it was not in effect during the time
22 that the SeaTac Third Runway project was under development. It is my understanding that the
23 Third Runway project has utilized the 1998 King County Surface Water Design Manual in
24 regard to stormwater management.

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1 4. The Ecology 2001 manual is published as guidance for the control of runoff
2 from new development and redevelopment. Ten minimum requirements, including runoff
3 treatment, apply to projects that exceed certain size thresholds. The third runway project
4 exceeds those thresholds. The minimum requirement for treatment specifies the bases for
5 treatment facility sizing. The methods specified for treatment facility sizing in the 1998 King
6 County Surface Water Design Manual should result in treatment facilities approximately the
7 same size as those required by the 2001 Ecology manual. The minimum requirement for
8 treatment also requires treatment facilities to be selected in accordance with Chapter 4 of
9 Volume 1; designed in accordance with the design criteria in Volume V, and maintained in
10 accordance with maintenance schedule in Volume V.

11 **III. The Standard Approach**

12 The standard approach for determining treatment requirements for any type of
13 wastewater discharge to waters of the state is to identify a technology-based treatment
14 minimum that applies regardless of the receiving water quality. Then a site-specific study is
15 conducted to determine whether the level of treatment indicated by the technology-based
16 approach will be adequate to meet water quality standards. If it is not, a dilution zone for the
17 wastewater discharge may be assigned if it can be justified in accordance with the restrictions
18 for such zones within the state's water quality standards. If a dilution zone is not assigned, or
19 if one is assigned but water quality standards would still be violated, additional treatment as
20 necessary to achieve compliance with water quality standards, referred to as water quality-
21 based treatment, must be applied prior to discharge.

22 **IV. The Presumptive Approach of the Manual**

23 5. The Ecology 2001 manual represents a generic, presumptive approach to the
24 application of stormwater controls to new development and redevelopment in order to meet the
25 technology-based and water quality-based requirements of federal and state water quality laws.
26 This deviation from the standard approach to meeting statutory requirements is consistent with

1 federal rules and guidance for stormwater. In the generic, presumptive approach used for
2 stormwater, it is assumed that the application of treatment BMPs in accordance with the 2001
3 Ecology manual will result in compliance with water quality standards in most cases. This
4 presumptive approach is used because the numbers of new stormwater discharges that are
5 created are too numerous to apply the standard case-by-case approach, and for most standard
6 residential and commercial projects, the risk of causing standards violations is greatly reduced
7 by the application of the appropriate treatment BMP's indicated by the manual. However, the
8 application of the generic, presumptive approach does not guarantee compliance with water
9 quality standards.

10 6. The generic, presumptive approach in the manual for the selection of
11 appropriate stormwater treatment is described in Chapter 4 of Volume I, and is repeated in
12 Chapter 2 of Volume V. The selection process identifies different levels of treatment that
13 apply to different types of land uses depending upon the type of receiving water. Chapter 3 of
14 Volume V of the manual describes the different levels of treatment – Oil Control, Phosphorus
15 Treatment, Enhanced Treatment, and Basic Treatment. Application of the treatment selection
16 process in the manual to the Third Runway project would result in use of a treatment facility or
17 facilities from the Enhanced Treatment menu. This result is obtained because the airport
18 would be viewed as an industrial or commercial operation that discharges to fish-bearing
19 streams. The purpose of the Enhanced Treatment menu is to reduce the potential for the
20 violation of water quality standards for various metals, especially copper, zinc, and lead.
21 However, as stated above, the use of Enhanced Treatment would not guarantee compliance
22 with water quality standards. This is so, at least in part, because we do not know sufficient
23 site-specific information to make that judgment. The concentrations of metals in the airport
24 discharges and the background receiving waters, and the flow rates of the discharges and
25 receiving waters, are necessary to make a decision concerning the needed level of treatment.
26

V. The Enhanced Treatment Menu

7. It is important to understand that Ecology does not guarantee a specific quality of effluent or even a specific performance goal in regard to the discharge of dissolved metals from the treatment options available under the Enhanced Treatment Menu. There isn't enough performance data available nationwide to set a specific performance goal for the removal or reduction of dissolved metals using readily available stormwater treatment options. Ecology has listed certain treatment types and treatment combinations under the Enhanced Treatment Menu that it believes may achieve a higher level of dissolved metals removal than achieved through the use of treatment options listed under the Basic Treatment Menu. The Enhanced Menu states "[t]he Enhanced Menu facility choices are intended to provide a higher rate of removal of dissolved metals than Basic Treatment facilities. Due to the sparse data available concerning dissolved metals removal in stormwater treatment facilities, a specific numeric removal efficiency goal could not be established at the time of publication." Vol. V, pp. 3-5, 3-6.

8. The Enhanced Treatment Menu includes amended sand filters as a treatment option. However, it is noted that "processed steel fiber and crushed calcite limestone are the only sand filter amendments for which Ecology has data that documents increased dissolved metals removal. Though Ecology is interested in obtaining additional data on the effectiveness of these amendments, local governments may exercise their judgment on the extent to which to allow their use." Vol. V, p. 3-7.

9. Ecology is in the process of attempting to get more data regarding the effectiveness of available treatment technologies in removing dissolved metals. Ecology is working with a committee to develop a testing protocol and approving monitoring plans which will determine the efficiency of various technologies for removal of dissolved metals. Vol. V, ch. 12 of the Manual discusses Ecology's evaluation process for emerging technologies. This

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chapter includes media filters, amended sand filters, catch basin inserts, and other facilities as examples of emerging technologies for stormwater treatment. Ch. 12.6.

VI. Site Specific Data May Supersede The Manual

10. The level of treatment indicated by the generic, presumptive approach can be superseded wherever site-specific information is available or is required. Ecology reserves the right to require site-specific studies for any proposed or existing discharge situation. "Federal, state, and local permitting authorities can require more stringent measures that are deemed necessary to meet locally established goals, state water quality standards, or other established natural resource or drainage objectives." (Volume 1, Chapter 1, Section 1.1) In the case of the Third Runway expansion, the amount of runoff into the nearby surface waters is of sufficient quantity to merit site-specific studies to determine the level of treatment necessary to meet water quality standards in the receiving waters and to protect beneficial uses. In this particular case, from the limited data I have seen, I could not conclude that dissolved metals in Seattle-Tacoma International Airport's stormwater would or would not likely exceed water quality standards after the application of treatment options from the Basic Treatment menu.

I declare under penalty of perjury under the laws of the state of Washington that the foregoing is true and correct.

DATED this 7th day of March.


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