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HEARINGS OFFICE

POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

AIRPORT COMMUNITIES) No. 01-133
COALITION,) No. 01-160
)
Appellant,)
)
v.) DECLARATION OF AMANDA
) AZOUS IN SUPPORT OF ACC'S
) SUR-REPLY ON MOTION FOR STAY
)
STATE OF WASHINGTON,) (Section 401 Certification No.
DEPARTMENT OF ECOLOGY; and) 1996-4-02325 and CZMA
THE PORT OF SEATTLE,) concurrency statement, issued August
) 10, 2001, Reissued September 21,
Respondents.) 2001, under No. 1996-4-02325
(Amended-1))

Amanda Azous declares as follows:

1. I am over the age of 18, am competent to testify, and have personal knowledge of the facts stated herein.
2. I am responding to the sur-replies submitted by the Department of Ecology and the Port of Seattle and the second declarations of Erik Stockdale and Dr. James Kelley.
3. The Port and Ecology do not address the underlying reasons why the Port's hydrologic monitoring of wetlands is inadequate and ignore the importance of properly evaluating what is accepted by most wetland scientists as the major driver of wetland ecosystem processes, *hydrology*. The result is flawed performance

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FOR STAY - 1

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standards for ensuring adequate seepage flows to remaining wetlands that will result in reduced functioning of remaining wetland areas.

4. Two wetlands, 18 and 37, are in immediate danger of irrevocable alteration from filling of their tributary wetlands and streams due to the Port's near term fill plans. Wetlands to be filled in the near term include part of Wetland 18, and Wetlands, 19, 20 and 21. Without a performance standard in place that accurately reflects hydrology for the length of season, groundwater elevations and amount of inundation that more closely represent historical norms contributed by these wetlands, there will be no way to assure there are no losses in the beneficial uses afforded by these wetlands to the Miller Creek wetland system. The issuance of a stay of the Section 401 Certification will prevent irreparable harm to these wetlands and Miller Creek until the Board considers the merits of the ACC appeal.

5. **Wetland hydrologic monitoring data gathered by the Port is inadequate to restore conditions to affected wetlands should the 401 be rescinded and is inadequate to protect remaining wetlands after the embankment is constructed.** I am very familiar with the Port's monitoring of wetland hydrology and have reported on it in a comment letters to the Department of Ecology the U. S. Army Corps of Engineers dated February 16th and July 6th, 2001 and also described the Port's hydrologic data in Attachment A of my declaration dated October 8th, 2001. Exhibit 1, attached to Mr. Stockdale's declaration, is *not* the data the Port has been collecting from wetlands. As its title and identifying information reflect, it is

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1 well log data from the Borrow 4 area, located south of the existing runways, not west
2 and down gradient of the embankment. The data in the table shows water levels
3 located between 60 and 100 feet below the ground surface. This is not monitoring
4 data belonging to an aquifer that has a surface expression, such as is found in a
5 wetland.

6 6. These well log tables were previously provided in a public disclosure
7 request that also included one table that actually is the results of the Port's
8 monitoring of wetlands. The entire set of data was labeled "Wetland Monitoring
9 Data". Most of the tables in that set are labeled "Water Level Data" but provide data
10 that is unrelated to the monitoring of wetland aquifers. I had assumed, until Exhibit
11 1 was presented as wetland monitoring data, that Ecology understood the difference
12 but am now less certain.

14 7. The Port's wetland monitoring data may be eight monitoring events to
15 date however only spreadsheets showing monitoring through five monitoring events
16 have been provided to the public. Some wetlands were monitored once in 2000 but
17 the remaining seven wetland monitoring events occurred from March to October of
18 2001. Some of the monitoring stations are located down gradient of the proposed
19 embankment but none of the monitoring stations are located in wetland areas the
20 Port plans to fill, which, in the near term, include the eastern lobe of Wetland 18,
21 and Wetlands 19 and 20. Each of these wetlands provides critical seepage flows to
22 remaining wetlands and Miller Creek that remain unmonitored.
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8. I have not asserted that the absence of hydrologic data precludes Ecology from being able to develop hydrologic performance as maintained in Ecology's sur-reply (page 3, line 14) and Erik Stockdale's second declaration (paragraph 4). I am asserting that the paucity of hydrologic data and the conditions under which the Port's data were obtained precludes the development of hydrologic performance standards that will *protect remaining wetlands* and result in no loss of wetland functions within what is left.

9. Clearly the Port and Ecology can (and have) developed hydrologic performance standards; the point is the standards are inherently flawed. The criticisms leveled are specifically that the small quantity of data gathered, the fact that the Port began monitoring wetlands *after* it began construction and the complete lack of monitoring in wetlands that will be filled before PCHB can hear the merits of 401 appeal provide no reasonable assurance the hydrologic performance standards agreed to by Ecology will protect remaining beneficial uses.

10. The Port's wetland consultant, Dr. Kelley accurately points out in his second declaration (paragraph 4) that the reason the 401 language was altered was because the Port has already started construction. He goes on to incorrectly claim it is unnecessary to halt construction before completing hydrologic monitoring. The Port's construction activities include activities such as clearing land and piling fill. These activities have altered the drainage area to numerous wetlands and eliminated most of the pre-construction forest cover with the exception of a 50 foot buffer

1 surrounding each wetland. Dr. Kelley does not explain the how hydrologic data
2 collected from wetlands with watersheds that change each month can be reliable
3 nor does he explain how it can be used to establish criteria to protect wetland
4 functions.

5 11. Dr. Kelley's second declaration also does not quote the correct
6 performance standards agreed to in the 401 permit (Kelley, paragraph 10). The
7 correct performance standards are cited in D.1 and D.1.k of the permit under
8 Required Mitigation. There are listed several tables that contain the hydrologic
9 performance standards for different wetland areas. Virtually all of the hydrologic
10 performance standards in these tables relating to in-basin mitigation read that there
11 "be groundwater within 10 inches of the soil surface between March and mid-June
12 in years of *normal* rainfall where organic soils dominate and from March to mid-
13 April where mineral soils dominate" [italics added].

14 12. Dr. Kelley argues in his second declaration that the vagaries of
15 precipitation preclude the establishment of a baseline for a wetland's hydroperiod.
16 If, as Dr. Kelley states, "there is no "normal" rainfall year that could serves as a
17 baseline to determine if hydrologic changes have occurred" (paragraph 13), then
18 why is the term *normal rainfall* year being used as baseline in the Port's wetland
19 hydrology performance standard contained in the 401 permit? In fact the concept of
20 a normal rainfall year is used routinely in wetland planning. The USACE 1987
21 Wetlands Delineation Manual defines a normal year as one in which annual
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precipitation is the same as or greater than precipitation in 5 years out of 10.

According to USACE's definition, none of the Port's wetland hydrologic monitoring has occurred in a normal rainfall year.

13. The wetland hydrology performance standards designated by the 401 permit are inadequate to protect wetlands because the season required for providing hydrology is several months shorter than it should be to protect wetland functions. Ecology has not explained why it is requiring the Port to monitor wetlands only from November to May even though many existing wetlands were previously documented to have saturated soils and standing water well into July, August and September. Similarly, Ecology has not explained why it has agreed to a performance requiring the Port to provide water within 10 inches of the surface only from March to mid April or June, depending on soil character, in wetlands that previously had saturated soils and observable flowing water through the summer. This problem is extensively documented in my Declaration of October 8th, 2001 and in Attachment A of that declaration.

14. **Periodic delineation of wetland boundaries provides little protection for wetland functions.** Condition D.1.h of the Certification requires that wetland boundaries be periodically delineated following construction and this is described by the Port as being an "acid test" for measuring any change in wetland area. Wetland area is not the only issue at stake here, it is wetland functions as well. A wetland that once held flowing water through the summer and into fall that,

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1 following construction, has only saturated soils, within 10 inches of the surface and
2 only until April or at most June, is not going to provide anywhere near the
3 functional capacity of the pre-construction wetland. It will not provide the baseflow
4 support, organic carbon or quality of habitat of its former self. Such a wetland may
5 be the same area as it was prior to construction but will lack its former complexity.

6 **15. Monitoring plant and soil conditions provides insufficient**
7 **information to provide reasonable assurance wetland functions will be protected.**

8 One of the major problems identified in several surveys of wetland mitigation
9 success is that water was often not present in wetlands sufficient to promote and
10 maintain wetland functions as intended by the mitigation.^{1,2} Wetland scientists and
11 Ecology, in its published guidelines for wetland mitigation, recognize that hydrology
12 is the driving force behind wetland plant communities and soil conditions.³ Yet the
13 Port claims that data relating to vegetation and soil conditions are far more useful
14 than hydrologic data for evaluating impacts to wetlands (Kelley paragraph 12). I
15 know of no research supporting the Port's extreme view of wetland ecosystem
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20 ¹ Compensating for Wetland Losses Under the Clean Water Act. National Academy of Sciences
Committee on Mitigating Wetland Losses. National Academy Press, Washington DC. 2001 Pre-
Publication Copy.

21 ² A. Mockler, L. Casey, M. Bowles, N. Gillen, J. Hansen, Results of Monitoring King County Wetland
and Stream Mitigations, King County Department of Development and Environmental Services,
22 August 4, 1998. <http://pnw.sws.org/forum/MonitResultsByAMOC.PDF>.

23 ³ Guidelines for Developing Freshwater Wetlands Mitigation Plans and Proposals, Washington State
Department of Ecology, Washington State Department of Fish And Wildlife, U.S. Army Corps of
Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, March 1994,
24 Ecology Publication #94-29. <http://www.ecy.wa.gov/pubs/94029.pdf>.

⁴ Ibid. Pages 6, 19 and 23.

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1 processes. Protection of beneficial uses within a wetland depends significantly on
2 maintaining its hydrology.

3 16. Furthermore, the Port is not being asked to rely *solely* on hydrologic
4 data to determine whether a wetland is functioning (Kelley paragraph 12), it is
5 simply being asked to use wetland hydrologic data to measure the success of its
6 claim to be protecting remaining wetlands and Miller Creek.

7 17. Dr. Kelley states there are no scientific standards for hydrologic data
8 that could be used to establish an impact threshold. Dr. Kelley may be unaware that
9 impact thresholds for wetland hydrology are routinely established by measuring
10 pre-construction hydrology and comparing it to post construction hydrology.
11 Methods for measuring wetland hydrology have been available in the Puget Sound
12 Wetlands and Stormwater Management Guidelines and have been in use by King
13 County and the Department of Ecology since the mid-nineties. The Port was asked
14 by Ecology and the Corps to begin monitoring wetland hydrology because it has long
15 been known by wetland scientists that such data is needed to provide a basis for
16 identifying post-construction alterations to wetland hydrology.⁴ Ecology's published
17 guidelines, also authored by the State Department of Fish and Wildlife, USACE, US
18 Fish and Wildlife and EPA, for wetlands mitigation emphatically state on page 19
19 that "*The water regime is the single most important variable in establishing or*
20 *maintaining a functioning wetland*, and it is extremely important to understand how
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1 water will be provided to your mitigation site. A thorough understanding of the
2 seasonal variability in water flows, water volumes, and residence time is needed.”

3 18. The fact that the Port opted to ignore the need to monitor wetland
4 hydrology from 1994 until the spring of 2001, when the Corps formally requested
5 additional monitoring, should not be an acceptable reason for marginalizing the
6 functions of remaining wetlands.

7 19. In paragraph 14 Dr. Kelley misstates the conclusion of my analysis of
8 the Port’s hydrologic data contained in my October 8th declaration. The Port’s data
9 already indicates wetlands are drier than they were before the Port began
10 construction. Many wetlands are substantially drier than they were in 1994 when
11 annual rainfall was even lower than during the Port’s recent wetland’s monitoring
12 (see Attachment A of my October 8th declaration for direct quotes from Port
13 documents). Wetlands are drier because the Port has altered the area contributing
14 runoff to many wetlands by stockpiling fill in their watersheds and by clearing
15 forestland around the 50 foot wetland buffers. Under the circumstances it is
16 predictable that the drying trend will continue.
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19 20. The Port claims that using adaptive management will insure that
20 wetland functions are protected. Adaptive management is the process of setting a
21 management goal, monitoring an ecosystem to determine results and revising design
22 parameters as needed to reach the management goal. The successful use of adaptive
23 management depends heavily on the management goal. Here the management goal,
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1 hydrologic performance of remaining wetlands, is inadequate at the start. Without a
2 hydrologic performance standard that provides reasonable assurance that remaining
3 wetland functions will be protected, an adaptive management approach will be
4 useless.

5 21. I declare under penalty of perjury under the laws of the State of
6 Washington that the foregoing is true and correct.

7 DATED this 10 day of October, 2001, at Seattle, Washington.

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10 _____
11 Amanda Azous

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