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POLLUTION CONTROL HEARINGS BOARD  
FOR THE STATE OF WASHINGTON

ENVIRONMENTAL  
HEARINGS OFFICE

1			
2	AIRPORT COMMUNITIES	)	No. 01-133
3	COALITION,	)	No. 01-160
		)	
4	Appellant,	)	DECLARATION OF AMANDA
		)	AZOUS IN SUPPORT OF ACC'S
5	v.	)	REPLY ON MOTION FOR STAY
		)	
6	STATE OF WASHINGTON,	)	(Section 401 Certification No.
7	DEPARTMENT OF ECOLOGY; and	)	1996-4-02325 and CZMA
8	THE PORT OF SEATTLE,	)	concurrency statement, issued August
		)	10, 2001, Reissued September 21,
9	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 have reviewed the declarations of Dr. James Kelley, Steven G. Jones, Joseph Brascher, Donald W. E. Weitkamp, Paul S. Fendt, and the Port of Seattle's Memorandum Opposing ACC's Motion for Stay, filed by Foster Pepper & Shefelman, PLLC. I have reviewed the declarations of Katie Walter, Ann Kenny, Eric Stockdale, Kelly Whiting, and the Department of Ecology's Response to Appellant's Motion for Stay, filed by the Attorney General of Washington. I have also reviewed other recent declarations filed by the Port and Ecology, not identified above, in addition to emails, reports, internal memoranda, and other documents from Ecology, the Corps

DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 1

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of Engineers, and other agencies obtained through Public Disclosure Requests by the ACC.

3. What is lacking in the development of the Port's proposal is not expertise but a scientific basis for its decisions. Careful review of the Port and Ecology's expert's declarations reveals that, with few exceptions, their claims are not substantiated by scientific studies or analyses.

4. The fact that *is* scientifically substantiated, and not refuted by any evidence submitted by the Port, is that there will be serious and harmful impacts to existing beneficial uses of the Miller, Walker and Des Moines Creek watersheds from filling approximately 2.8 acres of wetlands in the near term as well as permanently impacting a total of 20.42 acres because the Port's mitigation is inadequate to replace *wetland* functions. Stormwater management, the embankment wall design, water quality best management practices, and upland and wetland enhancement cannot fully mitigate for the wetland functions to be eliminated. No evidence is provided that enhanced uplands are better than or equal to existing wetlands in providing wetland functions. Furthermore, the Port's mitigation proposal fails to consider the effect of removing over 21 percent of remaining hydrologically connected wetlands in the Miller Creek watershed.

5. **The Port proposal to fill 2.8 acres of wetlands in the near term will result in substantial harm to Miller Creek wetlands.** This near term activity provides an instructive microcosm of the problems that pervade the Port's

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1 mitigation proposal and undermine the protectiveness of Ecology's permit  
2 conditions.

3 6. The wetlands the Port plans to fill in the initial phase are the most  
4 significant surface water sources to the remaining wetlands adjacent to Miller Creek.  
5 The majority of the 2.8 wetland acres to be filled in the short term are hydrologically  
6 connected to the creek. The loss of these wetlands would result in the permanent  
7 loss of nutrients and water to the Miller Creek wetland system

8 7. The Port's wetlands documentation provides direct evidence that the  
9 wetlands they plan to fill during this initial phase are an important source of  
10 seepage flows to Miller Creek well into the dry season and also rank highly as  
11 sources of organic carbon (the Port's data on these wetlands is summarized in  
12 Attachment A). The functions provided by many of these wetlands, particularly  
13 wetland's 18, 19 and 20 are fundamental to the core of this argument, which is that  
14 stormwater management facilities for water quality and quantity control combined  
15 with enhancement plantings of remaining wetlands and uplands do not fully  
16 mitigate for the loss of these wetlands.  
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19 8. Once these wetlands are eliminated there will be little information  
20 available to fully restore them because no monitoring of their hydrologic  
21 contribution to the system has occurred. No hydrologic monitoring of the portion of  
22 Wetland 18 to be filled or wetlands 19 or 20, which the Port plans to fill, has  
23 occurred so the Port has no information about their hydraulic contribution to the  
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1 remainder of Wetland 18, Wetland 37 and Miller Creek. Should the 401 Permit be  
2 overturned by the PCHB, the Port's near term plan to fill 2.8 acres of wetlands will  
3 be irreparable because there will be no performance standard for enforcing the  
4 restoration of pre-fill conditions in the wetlands the Port fills. The lack of pre-  
5 construction monitoring in these wetlands will make it very difficult for Ecology to  
6 retrieve wetland functions once they are eliminated.

7 9. The critical role these wetlands play in maintaining the functions of  
8 the Miller Creek wetlands combined with the difficulty of restoring their functions  
9 in the ecosystem once they are eliminated make their loss irreparable. The Port's  
10 proposal and Ecology's 401 Certification depart from best available scientific  
11 knowledge of how to evaluate and effectively mitigate for wetland functional losses  
12 inherent in the Port's proposal. Ecology's 401 decision permits a project that  
13 ignores basic science-based principles of wetland protection and wetland loss  
14 mitigation. If that decision is implemented before the Board can review its merits,  
15 irreparable harm to the Miller Creek watershed will occur.

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18 **10. The Port's proposed mitigation package remains inadequate to**  
19 **protect wetland functions and ineffective in providing full compensation for lost**  
20 **wetland functions.** Previous comments on the variable accounting practices used by  
21 Ecology to determine mitigation ratios, the functional inadequacy of the proposed  
22 mitigation activities, the flawed hydrologic performance standards, and the  
23  
24

1 unsubstantiated assumptions about organic export from uplands, are all issues that  
2 remain unresolved.

3 11. Several of the Port's and Ecology experts point out that the Port's  
4 proposal represents the largest and most significant urban watershed  
5 mitigation package ever required by Ecology. The mitigation proposal would  
6 be expected to be so, given the scale of the Port's proposal and its impact on  
7 wetlands and three streams located in small coastal Puget Sound watersheds.

8 12. If one only looks at what Ecology says in describing its 401 decision,  
9 one might falsely believe Ecology has negotiated a beneficial deal for the public by  
10 requiring that the Port provide two enhanced wetland acres to one filled wetland  
11 acre and five acres of enhanced upland for one filled wetland acre. But there is no  
12 research provided by the Port or Ecology that will substantiate that either  
13 enhancement of buffers or of wetlands mitigates for the loss of actual wetland acres  
14 in a watershed. In fact there are numerous recent studies that identify the  
15 significant problems with using enhancement as a method of mitigating for wetland  
16 losses.<sup>1,2,3</sup>  
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21 <sup>1</sup> 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.

22 <sup>2</sup> *How Ecology Regulates Wetlands*, Washington State Department of Ecology, Publication 97-112 (Revised April 1998).  
See discussion on Compensatory mitigation regarding adequacy of mitigation methods.

23 <sup>3</sup> *Wetland Mitigation Ratios: Defining Equivalency*, Shorelands and Coastal Zone Management Program, Washington State  
Department of Ecology Publication Number 92-8, February 1992. See discussions on recommended mitigation ratios.

24 <sup>3</sup> *How Ecology Regulates Wetlands*, Washington State Department of Ecology, Publication 97-112 (Revised April 1998).  
See discussion on Compensatory mitigation regarding adequacy of mitigation methods.

25 <sup>3</sup> Ibid.

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13. In Ecology's response to ACC's request for a stay, it states on page 6 that Ecology's permit negotiation with the Port included a requirement that there be "one-to-one" replacement for every acre of wetland impacted in-basin, then goes on to say that "one-to-one" replacement means that for every acre of wetland impacted, one acre of wetland must be created, restored or enhanced. This is not true replacement in sense recognized generally by wetland scientists, or previously, by Ecology. There is no way to avoid a net loss of wetlands if wetland acres are "replaced" by enhancement activities. Such a claim flies in the face of Ecology's published guidelines for regulating wetlands.<sup>4</sup>

14. The defense of the Port's mitigation package by Ms. Walter is highly inconclusive. In her declaration of October 1, 2001 Ms Walter presents a table of the Port's mitigation showing that 23.55 acres of wetlands will be preserved in-basin. But only 2.35 acres of that area is wetland and the remainder is upland.<sup>5</sup> Even more startling is that credit is given to the Port for *preservation* of wetlands and of uplands. Apparently Ecology now views preserved upland area as having equal functions to a preserved wetland. Ms. Walter points out correctly that mitigation ratios were developed through the scientific community as an acceptable way to

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<sup>5</sup> Attachment D Erik Stockdale Declaration of October 1, 2001.

1 reach equivalency. The question at hand is why isn't the Port required to use the  
2 mitigation ratios published by Ecology itself that were based on science?<sup>6</sup>

3 15. Ecology's accounting and calculations of the Port's mitigation credits  
4 have changed routinely since the start of this project. Attachment D to Mr.  
5 Stockdale's declaration provides the latest summary, which differs even from that  
6 described in the 401 Permit, issued only a few weeks ago. In this latest version,  
7 Ecology has given the Port credit for preserving wetlands in Borrow Area 3. This  
8 means that Ecology has given mitigation credit to the Port for deciding not to  
9 permanently impact wetlands. Giving mitigation credit for avoiding an action is a  
10 significant departure from Ecology's stated guidelines for regulating wetlands.<sup>7</sup> Will  
11 the next version of the mitigation summary provided by Ecology give the Port  
12 additional credit for the remaining wetlands and portions of wetlands they are not  
13 intending to fill? Does this mean that landowners can now fill at least half the  
14 wetlands on their property because they will receive a credit of compensatory  
15 mitigation for preserving the remaining half?  
16

17 16. The Port repeatedly misrepresents its mitigation plan by mixing up the  
18 terms restoration and enhancement. Restoration is the reestablishment of wetlands  
19 functional capacity at a site where wetlands formerly existed but were eliminated.  
20 Enhancement is an activity that increases wetland functional capacity by attempting  
21

22  
23 <sup>6</sup> *Wetland Mitigation Ratios: Defining Equivalency*, Shorelands and Coastal Zone Management Program, Washington State  
24 Department of Ecology Publication Number 92-8, February 1992. See discussions on recommended mitigation ratios.

1 to improve the site conditions of an existing wetland. The Port is not restoring  
2 wetland functional capacity along Miller Creek; *it is eliminating it*. To provide some  
3 mitigation for eliminating that capacity, the Port is offering to enhance remaining  
4 wetlands and their associated uplands. Wetland enhancement will not add more  
5 wetlands and should not be confused with wetland restoration, which by definition  
6 would add wetlands that were historically eliminated.

7 17. The majority of in-basin mitigation being proposed by the Port is  
8 enhancement of upland buffers. Upland buffer enhancement can be a helpful  
9 addition to a reasonable mitigation proposal that also replaces wetland functions,  
10 but is not meant to be a replacement for wetlands. I am unaware of any data  
11 showing that upland buffer enhancement can provide wetland functions and none  
12 was provided in any the Port or Ecology declarations.

13 18. It is the Port's responsibility to prove that wetland functions that  
14 supply organic matter to aquatic systems will be mitigated by the mitigation  
15 activities it proposes. None of the Port or Ecology experts have provided any  
16 evidence that enhanced wetlands and uplands can provide the same organic export  
17 function as a wetland. Furthermore the hydrology described by Dr. Kelley for Vacca  
18 Farm, the one possible new contributory source of organic matter, cannot be  
19 confirmed given the stormwater design information provided by the Port, rendering  
20 it speculative. As wetland scientists, our job is to review the best available science  
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24 <sup>7</sup> *How Ecology Regulates Wetlands*, Washington State Department of Ecology, Publication 97-112 (Revised April 1998).

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and give recommendations accordingly. But the Port and Ecology continue to give descriptive opinions rather than factual analysis.

19. The Port does not support its argument that enhancing uplands with native species will increase organic carbon from existing conditions with any research or analysis. It would be difficult for the Port to show there is an improvement because the majority of the undeveloped area affected by the Port's project was already in forest and shrub cover with an understory of grass and forbs (prior to the Port's land alteration of recent years), essentially the same landscape condition the Port proposes to create. I agree that, overall, the elimination of noxious weeds, septic systems and housing will have incremental benefits but the Port has provided no scientific evidence that such measures would actually increase organic matter production in the aquatic environment or otherwise duplicate the biological and chemical functions afforded by wetland soils and the water soil interface.

20. Several of the comment letters I have submitted, including my declaration of Sept 11<sup>th</sup>, discuss the value of the functions identified for the wetlands to be filled. All data presented in those comment letters have come from Port documents. The wetlands being eliminated have some high quality functions based on data provided by the Port consultants. Although these wetlands are not pristine they are critical functioning components of an urban basin. The fact that

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See discussion on Compensatory mitigation regarding adequacy of mitigation methods.

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they are not pristine should not be used by regulatory agencies as a license to eliminate them without adequate mitigation.

21. **Incomplete restoration will occur despite the Port's claims otherwise.**

Dr. Kelley provides Attachment F of his declaration as proof that the Port's proposed mitigation activities meet the Society of Wetland Scientists (SWS) definition of a wetland restoration. Dr. Kelley claims that the SWS definition of wetland restoration applies to the upland enhancement activities of Miller Creek, Tyee Golf Course and to the Auburn Wetland Mitigation project. However, none of these projects are wetland restorations.<sup>8</sup> Only Vacca Farm will actually be restored according to Attachment D provided in Mr. Stockdale's declaration. As explained earlier, restoration is the addition of wetlands that were eliminated from a system whereas enhancement is the addition of structural elements such as new plantings to improve the functions of an existing wetland. Restoration differs enormously from enhancement, which is why specific criteria for it were developed by the SWS.

22. Dr. Kelley may also just be confused about what restoration is because he also claims that the Port's "mitigation enhances and *restores*, slope, depression and riparian wetlands".<sup>9</sup> This mixing of terms occurs throughout the Port's and Ecologies documents leaving the reader to wonder if the confusing language is

<sup>8</sup> Attachment D. Declaration of Erik Stockdale, October 1, 2001.

<sup>9</sup> Declaration of James C. Kelley, PH.D., October 1, 2001, paragraph 54

1 deliberate or simply indicative.<sup>10</sup> Enhancement, restoration, creation are distinct  
2 terms used to describe specific activities for mitigation. The Port's interchangeable  
3 use of these terms is misleading.

4 23. The question asked in my declaration of September 11<sup>th</sup>, which Dr.  
5 Kelley fails to answer in Attachment F, is how Vacca Farm can be considered a  
6 wetland restoration when it is not intended, notwithstanding Ms. Walter's differing  
7 account, to provide habitat due to aircraft safety concerns? For example Attachment  
8 F of Dr. Kelley's declaration states that plant production processes will be restored to  
9 Vacca Farm and will reinstate and drive wetland functions. Plant production may  
10 have that effect in an upland environment but water is really the driving force  
11 behind wetland ecological processes. Attachment F makes no mention of wetland  
12 hydroperiod restoration occurring in Vacca Farm. Without adequate water at  
13 sufficient depth over time there will be no reinstatement of peat accumulation,  
14 organic matter export or the nutrient cycling functions generally afforded by  
15 wetlands.

16  
17 24. Herein lies the crux of whether 6.6 acre Vacca Farm is truly a wetland  
18 restoration. The Port does not want water to be present at Vacca Farm due to  
19 concerns about attracting wildlife. The Port plans that the "restored" Vacca Farm  
20 wetland will act as a stormwater storage facility during storm events and then water  
21 will be discharged through a swale to the Miller Creek system. To meet the criteria  
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24 <sup>10</sup> Attachment E of Dr. Kelly's declaration also incorrectly states that the Port will provide 9 acres of wetland

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1 established by the SWS for a restoration, Vacca Farm would need to have water  
2 regime directed to supporting biodiversity not one that is designed to provide  
3 stormwater management while also avoiding attractions to wildlife.

4 25. Without Vacca Farm, the Port's entire mitigation within the Miller,  
5 Walker and Des Moines Creek watersheds is comprised of enhanced wetlands and  
6 uplands, features that already exist in the landscape. Yet, Dr. Kelley continues to  
7 misrepresent the Port's mitigation package throughout his declaration by describing  
8 how the Port will restore riparian wetlands and buffers, as if these elements do not  
9 already exist in the landscape.

10 26. **Flawed performance standards for ensuring adequate seepage flows**  
11 **to remaining wetlands will reduce the functioning of remaining wetland areas.**

12 The issue of performance standards that are inadequate to protect wetland  
13 hydrology was identified in my September 11<sup>th</sup> declaration to the PCHB and in a  
14 comment letter sent to Ecology dated July 6, 2001. The Port consultants and Ecology  
15 have yet to respond to these continuing concerns. Without performance standards  
16 that are based on pre-construction conditions, there is significant risk that wetland  
17 functions will be eliminated from this watershed. Two wetlands, 18 and 37, are in  
18 immediate danger of irrevocable alteration from filling of their tributary wetlands  
19 and streams due to the Port's near term fill plans. Wetlands to be filled include part  
20 of Wetland 18, and Wetlands, 19, 20 and 21. Without a performance standard in  
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25 restoration at Vacca Farm, when the correct number provided by Mr. Stockdale in Attachment D is 6.6 acres.

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1 place that accurately reflects hydrology for the length of season, amount of  
2 inundation and groundwater elevations that adequately represent historical norms  
3 for these wetlands, there will be unmitigated impacts to the beneficial uses afforded  
4 by these wetlands. The issuance of a stay of the Section 402 Certification will  
5 prevent irreparable harm to these wetlands and Miller Creek until the Board  
6 considers the merits of the ACC appeal.

7 27. The hydrologic performance standard agreed to by Ecology for  
8 wetlands remaining after the Port's fill activities says that there be groundwater  
9 within 10 inches of the soil surface between March and mid-June in years of normal  
10 rainfall where organic soils dominate and from March to mid-April where mineral  
11 soils dominate. This performance standard must be based on the Ports limited  
12 monitoring of wetland hydrology in 2000 and 2001, one of the driest water years on  
13 record. It appears to not consider the first wetland surveys of 1994, which occurred  
14 prior to land alterations by the Port, or even those of 1998, when there was still  
15 some woodland buffer around the hillslope wetlands of Miller Creek.

16 28. Ecology's reliance on wetland hydrology data gathered after extensive  
17 land alterations have occurred is unfortunate because it renders the data suspect.  
18 Attached are Attachments B and C, which are aerial photos, showing the landscape  
19 around the airport in August 31<sup>st</sup> 1997 and May 2001. The aerial photographs show  
20 that between 1997 and 2001 virtually all areas located on the west side, not  
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1 designated as a wetland or within a 50-foot buffer of a wetland, were cleared by the  
2 Port.

3 29. Official rainfall records supply further evidence of the effect the Port's  
4 activities have already likely had on the Miller Creek wetlands. Rainfall records for  
5 Seattle Tacoma National Weather Station (WSCMO AP) show that water year 1993  
6 to 1994 (October 1<sup>st</sup> through September 30<sup>th</sup>) had lower rainfall than water year 2000  
7 to 2001 (25.59 inches versus 28.08 inches) yet the Port's wetland hydrologic  
8 monitoring shows far less water within the Miller Creek wetlands than that  
9 documented by their consultants in 1994 (see Attachment A for direct quotes).<sup>11</sup>

10 30. It is unlikely that the wetlands would be able to retain the same level  
11 of hydrologic function after most of the remaining portion of forested contributing  
12 area was eliminated, especially with the limited buffering capacity provided by only  
13 50 feet of upland left uncleared but it is especially challenging and unlikely in a low  
14 water year. Using the monitoring obtained in a low water year compounds the  
15 impact of the Port's land use alterations leaving the false impression of fairly dry  
16 wetlands when, in fact, the monitoring is occurring under extreme conditions  
17 produced by low rainfall and the Port's land use alterations. The hydrologic  
18 performance standards agreed to in the 401 permit negotiations simply do not  
19 provide a reasonable basis for a long-term performance standard intended to protect  
20 these wetlands.  
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31. Wetlands 18 and 37, which will be immediately affected by the Port's near-term plans to fill 2.8 acres of wetland, are not the only wetlands with performance standards that are inadequate to protect their water sources. With the exception of Wetlands R6 and R7a, the Port described all Miller Creek's riparian wetlands to be "saturated to the soil surface or within 12 inches of the soil surface during the September and October 1998 site visits." Once again, the picture painted by the Port's first monitoring of Miller Creek's wetlands is one where slope and riparian wetlands transmit groundwater and precipitation throughout the dry season, not just until mid-June or mid-April, which is what Ecology's performance standards for these wetlands require.

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32. The first 401 issued by Ecology on August 10, 2001 stated in condition D(1)(g) that pre-construction hydrologic monitoring of wetlands was required. This condition was altered in the September 21, 2001 reissue of the 401 Certification to read that wetland hydrologic monitoring must begin immediately, but was not required to occur prior to construction activities. This change in 401 conditions eliminated the opportunity for Ecology to develop hydrologic performance standards that more reasonably reflected the normal conditions of the wetlands before further alteration by the Port's construction activities. Under the current 401, the Port will be able to continue to alter the drainage basin, affecting hydrologic patterns and

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<sup>11</sup> <http://www.wrh.noaa.gov/afos/SEA/CLM/SEACLMSEA>; <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?waseat>.

1 tributary area to wetlands while collecting monitoring data that predictably  
2 indicates the wetlands are increasingly dry.

3 **33. Cumulative Impacts Analysis fails to address the fundamental**  
4 **question: What is the cumulative impact of the loss of the Miller Creek wetlands**  
5 **the Port plans to fill to Miller Creek and its watershed resources?** The Port  
6 apparently completed its cumulative effects analysis in August 2001 (if the  
7 document's date is to be relied on) but the document was not released to the public  
8 until it appeared as Exhibit N of Jim Kelly's declaration dated October 1, 2001. It  
9 was requested in my declaration of September 11<sup>th</sup>, as in numerous previous  
10 comment letters to Ecology because, until Exhibit N appeared, no such document  
11 was released for public review.

12  
13 **34.** The document is an improvement over previous Port submissions  
14 claiming to be a cumulative impacts analysis, but nevertheless again fails to address  
15 the core issue for the Miller Creek watershed. How does the Port insure its  
16 mitigation proposal will be adequate to protect the public's beneficial uses when it  
17 plans to remove over 21% of remaining wetlands adjacent or hydrologically  
18 connected to Miller Creek in an already heavily urbanized watershed?

19  
20 **35.** Criticisms from the Port and Ecology's experts challenged my analysis  
21 of the cumulative loss of wetlands in the Miller Creek watershed presented in my  
22 September 11 declaration (paragraphs 22 and 23 of Ms. Walker's declaration and  
23 paragraph 9 of Dr. Kelly's declaration). Their specific concerns were that Wetland  
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1 43 was not included in my analysis. That is true because the analysis was of the  
2 Miller Creek watershed exclusively not Walker Creek. They also noted that no lakes  
3 were tabulated, including Tub Lake. This was because the analysis was of functions  
4 provided by adjacent and hydrologically connected wetlands to Miller Creek, not  
5 lakes. It was also criticized for not including wetlands inventoried by the cities of  
6 Des Moines, Normandy Park and Burien outside of the Master Plan Area, however  
7 those wetland inventories were included, as stated in the footnote attached to the  
8 paragraph describing the analysis results. Critical review is reasonable but the  
9 Port's consistent failure to answer the essential question of cumulative impacts  
10 provides no assurance that remaining aquatic resources will be protected from  
11 degradation.  
12

13 36. While a completely accurate determination of wetlands remaining in  
14 the Miller Creek basin cannot be made without delineation, an assessment can  
15 certainly be made using aerial photography, wetland inventories and on-the ground  
16 surveys. My analysis would not provide the accuracy of wetland delineations but is  
17 not off enough to ignore the fundamental *scientific* question that neither the Port or  
18 Ecology has answered, How will the Port's plan assure that the loss of a substantial  
19 portion of wetlands remaining in the Miller Creek watershed will be fully mitigated?  
20

21 37. **Emphasizing out-of-basin wetlands creation results in degradation of**  
22 **beneficial uses in Miller and Des Moines Creek basins.** Off-site mitigation in the  
23 watershed is addressed by 33 CFR Part 320.4(q)(1). Off-site mitigation as long as it  
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1 is within the same Water Resource Inventory Area (WRIA) is addressed by RCW  
2 90.74.010 (1). RCW 90.74.010 (6) also specifies that a WRIA be defined as a  
3 watershed.

4           **38. Provision to mitigate outside of a basin afforded by 90.74 RCW is not**  
5 **supported by sound wetland science.** Best professional wetland science stipulates  
6 that wetland mitigation occur within the affected watershed to adequately  
7 compensate for losses. This core mitigation principal is reflected in Ecology's  
8 Publication 97-112 (Revised April 1998) *How Ecology Regulates Wetlands*, which  
9 says that "it is difficult to replace hydrologic and fish habitat functions in a different  
10 drainage basin and *impossible* to replace them in a different watershed" (italics  
11 added). But a WRIA is composed of many watersheds and natural resource  
12 scientists know that wetland functions are generally most valuable locally.  
13 Irrespective of what the Washington State legislature says, the Federal Clean Water  
14 Act Section 401 Certification requires that there be reasonable assurance that there  
15 will be no degradation of beneficial uses. As a wetland scientist I must advocate  
16 based on sound scientific principles and current knowledge in the field.  
17 Irrespective of the state legislation, the federal standard cannot be met solely by  
18 allowing compensatory mitigation in the WRIA. Mitigation must fully mitigate  
19 losses of wetland functions within the basin in which they occur to prevent  
20 degradation of beneficial uses.  
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DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 18

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**AR 006805**

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39. In fact the statute states that “The Department of Ecology and Fish and Wildlife are not required to grant approval to a mitigation plan that the department finds does not provide equal or better biological functions within the watershed or bay” (RCW 90.74.020(2)). Ecology is not obligated to approve a mitigation plan, which does not meet its published guidelines and which does not provide equivalent or better compensatory mitigation.

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40. The state also addresses the scientific concern regarding in-basin mitigation in its definition of context for allowing out of watershed mitigation, which requires a plan for managing wetland resources. The RCW stipulates the following information requirements for determining whether equal or better biological functions will result from a permit decision:<sup>12</sup>

13 (a) The relative value of the mitigation for the target resources, in  
14 terms of the quality and quantity of biological functions and  
15 values provided;

16 (b) The compatibility of the proposal with the intent of broader resource  
17 management and habitat management objectives and plans, such as  
18 existing resource management plans, watershed plans, critical areas  
19 ordinances, and shoreline master programs;

20  
21 (c) The ability of the mitigation to address scarce functions or  
22 values within a watershed;

1 (d) The benefits of the proposal to broader watershed landscape,  
2 including the benefits of connecting various habitat units or  
3 providing population-limiting habitats or functions for target  
4 species;

5 (e) The benefits of early implementation of habitat mitigation for  
6 projects that provide compensatory mitigation in advance of the  
7 project's planned impacts; and

8 (f) The significance of any negative impacts to nontarget species or  
9 resources.

10 41. These requirements mean that if off-site mitigation is proposed outside  
11 of the actual watershed in which impacts occur, it must at minimum, be done  
12 within a WRIA, basin or community habitat plan. The selection of out of basin  
13 mitigation must have a planning basis and be supportable in terms of long-term  
14 goals and planning strategies for the WRIA. The existence of a local, WRIA or state  
15 plan is critical to show a framework for deciding when out of basin mitigation is  
16 appropriate to meet local, state or federal wetland goals. The flexibility intended by  
17 the legislation is discretionary and to be based on a solid scientific and planning  
18 context.  
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24 <sup>12</sup> RCW 90.74.020 (3)

1           42.     The off-site mitigation plan proposed by the Port has not been tied to  
2 an identified need for wetland categories or functions at risk in WRIA 9.<sup>13</sup> Even if it  
3 had, the wetlands remaining in the Miller and Des Moines Creek watersheds are  
4 critical components to maintaining habitat and significantly influence the habitat  
5 suitability of the creek systems and remaining undeveloped watershed.<sup>14, 15</sup> Their  
6 loss would be inconsistent with requirements for preservation of water quality and  
7 watershed functions.

8           43.     The proposed areas for wetland impacts and the proposed mitigation  
9 site for wetland losses are located in the same water resource inventory area  
10 (WRIA9). WRIA9 covers the entire Green and Duwamish River Basin and also  
11 includes eight coastal watersheds that are tributary to Puget Sound. The Green and  
12 Duwamish River Basin is a large inland river system, characterized by open  
13 landscapes, with large floodplains, forested and scrub-shrub wetlands and a wide  
14 historically meandering channel. Although in the same WRIA, the coastal  
15 watersheds are a significant contrast to the Green Duwamish River system, having  
16 very different hydrogeologic structures, habitat and food and nutrient webs. These  
17 coastal watersheds are characterized by complexes of headwater wetlands and  
18 hillslope seeps which form tributaries to larger streams that ultimately discharge to  
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22 <sup>13</sup> LA Peyre, M. L., M. A. Reams and I. A. Medlessohn. 2001. *Linking actions to outcomes in wetland management: an overview*  
23 *of U.S. state wetland management.* Wetlands 21:66-74.

24 <sup>14</sup> Magee, T. K., T. L. Ernst, M. E. Kentula and K. A. Dwire. 1999. *Floristic comparison of freshwater wetlands in an*  
25 *urbanizing environment.* Wetlands 19:517-534.

1 Puget Sound, providing sources of nutrients and freshwater to coastal estuarine  
2 habitats. Upland wetlands are important sources of nutrients and hydrology to  
3 lower stream reaches. Wetlands in these coastal watersheds tend to be forested or  
4 scrub-shrub hillslope wetlands and depressional flow-through wetlands in flatter  
5 areas and are typically associated with springs, creeks or streams.

6 44. The proposed wetland creation mitigation site within WRIA9 is located  
7 adjacent to the Green River. The ecosystem function of this proposed wetland  
8 creation is entirely different from the coastal wetland and riparian systems that are  
9 being impacted. The proposed mitigation is to create black cottonwood and willow,  
10 Oregon ash and Western red cedar plant associations typical of a floodplain  
11 wetland.<sup>16</sup> This is incorrectly equated with providing mitigation for habitat losses  
12 that are of an entirely different vegetative and hydrologic character. Even if the  
13 Auburn mitigation project were to be sustainable (an outcome that is not at all  
14 certain), it will not replace the hydrologic functions being eliminated within WRIA9.  
15 Neither will it function on behalf of the community of species that are being  
16 permanently impacted in WRIA9, wetland and riparian coastal communities. It  
17 cannot be emphasized enough that wetland losses will occur in three coastal  
18 freshwater salmonid supporting streams, a public resource that is increasingly rare  
19 both within and outside of WRIA9.  
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23 <sup>15</sup> Naugle, D. E., R.R. Johnson, M. E. Estey, K. F. Higgins. 2000. *A landscape approach to conserving wetland bird habitat in*  
24 *the prairie pothole region of Eastern South Dakota.* Wetlands 20:599-604.

25 DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 22

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**AR 006809**

1           **45. The Port's interpretation of the FAA's safety guidelines is inconsistent**  
2 **and not defensible.** FAA Advisory Circular 150/5200-33 contains guidelines that  
3 suggest limiting the development of avian habitat within 10,000 feet of existing  
4 facilities to minimize the hazard of potential air strike by birds.<sup>17</sup> RCW 36.70A.510  
5 requires that jurisdictions discourage the siting of incompatible land uses near  
6 airport zones. These guidelines are referred to repeatedly in the reporting as a basis  
7 for reducing wetland habitat in the Miller Creek watershed as if that habitat did not  
8 already exist and would be new. The guidelines are said to require a mitigation  
9 strategy (out of kind and out of basin) that is less than effective for protection of  
10 beneficial uses. It is important to note that both the FAA guidelines and the RCW  
11 address *existing* conditions. Neither is intended to apply to new airport facilities  
12 that will eliminate existing wetlands and beneficial uses. It is misleading to use the  
13 guidelines or the RCW as a basis for permitting out-of-watershed mitigation in lieu  
14 of preventing further degradation of the existing Miller and Des Moines Creek  
15 watershed resources.  
16

17           **46. The Animal Damage Control Office of the U.S. Department of**  
18 **Agriculture, J. Gary Oldenburg, in a letter to the US Army Corps of Engineers dated**  
19 **April 15, 1998, describes the bird strike safety concerns at STIA and strongly**  
20 **recommends against the creation or enhancement of wetlands within 10,000 feet of**  
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23 <sup>16</sup> Addendum to the Final Supplemental Environmental Impact Statement, Auburn Wetland Mitigation Project, Port  
24 of Seattle, May 5, 2000, p. 12.

<sup>17</sup> Natural Resources Mitigation Plan, Revised Draft, Parametrix, Inc., August 1999, p. 7-1.

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DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 23

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**AR 006810**

1 the STIA runways.<sup>18</sup> The letter from State Director of USDA provided by the Port in  
2 Exhibit A specifically states that as the number of animals in the vicinity of an  
3 airport increases, the wildlife strikes rates typically also increase. Mr. Oldenburg's  
4 position was to advocate that the area be as free of habitat as possible.

5 47. Clearly no one wants to create a safety issue but the Port's position on  
6 the FAA safety guidelines is inconsistent. For example, the Port states that its plans  
7 for the Vacca Farm restoration will produce habitat for small mammals.<sup>19</sup> But if the  
8 "restoration" is a success and small mammals and native vegetation are present,  
9 there clearly will be increases in the number and variety of bird species.

10 48. Similarly, if the FAA guidelines are driving the Port's proposal then its  
11 plans to enhance the shoreline of Lora Lake, an open body of water within 10,000  
12 feet of the runway, which will certainly draw more waterfowl and predatory species  
13 as small mammal, amphibian and aquatic habitat in increased, is also unexplained.

14 49. Clearly, the Port cannot claim it is restoring a wetland, as it does at  
15 Vacca Farm, unless it is providing for all wetland functions, including wildlife  
16 habitat. It is inconsistent for the Port to claim that FAA safety guidelines preclude it  
17 from creating in-basin wetland mitigation due to wildlife hazards while also  
18 claiming it is restoring wetland habitat functions that will support greater  
19 populations and more diverse wildlife than what currently is present. These are  
20 contradictory claims and call into question what will be constructed as mitigation,  
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24 <sup>18</sup> Declaration of James C. Kelley, PH.D., October 1, 2001, paragraph 44.



1 how it will truly function when built and whether it will be allowed to remain if it  
2 actually functions as promised.

3 50. The descriptions of how Vacca Farm will be restored in Ms. Walter's  
4 declaration (paragraph 24) provide an interesting example of what she thinks can be  
5 done to create wetlands that do not pose a bird strike hazard. Vacca Farm is located  
6 near the north end of the runway, is adjacent to an open body of water, Lora Lake,  
7 and once it is graded to store stormwater, would have many characteristics that  
8 would be especially inviting to the dabbling ducks and Canada goose, mentioned  
9 specifically in Mr. Oldenburg's letter. But over time, Ms. Walter says, this threat  
10 will be reduced as tree cover takes over. She does not explain then why this same  
11 wetland design philosophy can't be used to create in-basin wetlands that replace  
12 those lost?

14 51. If the residents of the Miller Creek basin wanted to conduct a  
15 meaningful watershed-scale restoration activity, they would first seek to protect and  
16 restore remaining wetlands. They would not re-plumb three basins, place over 20  
17 million cubic yards of fill and enhance what was left. They would certainly not fill  
18 over 21% of the wetland acres remaining in the watershed that lie adjacent to or  
19 hydrologically connected to their creek system. They would work with property  
20 owners all along the creek length to improve and restore instream habitat, protect  
21 remaining wetlands and educate property owners on water quality concerns. Given  
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24 <sup>19</sup> Attachment E, Declaration of James C. Kelley, PH.D., October 1, 2001.

1 the opportunity, residents interested in restoration of their watershed would opt to  
2 create new well-shaded riparian wetlands and shady backwater areas for fish habitat  
3 that would pose little threat to aircraft and greatly improve existing resources.

4 52. The Port's consultant, Paul Fendt has misunderstood what he terms the  
5 "Booth and Horner" study. I was significantly involved with this study as a  
6 scientist, analyst and author, and am listed as a co-author with Dr. Booth, Dr.  
7 Horner and Christopher May in the article cited by Mr. Fendt. The wetlands used in  
8 the "Booth and Horner study" were selected in areas of King County that were in the  
9 process of developing from rural landscapes to suburban landscapes. The  
10 hydrologic changes identified by the study were alterations observed in creeks and  
11 wetlands that were experiencing the initial consequences of land use alterations, not  
12 well established, mature suburban neighborhoods such as in Miller Creek and Des  
13 Moines Creek watersheds. Moreover, none of the wetlands and creeks studied were  
14 located adjacent to a large, busy international airport that discharged stormwater to  
15 them. The major findings of the study were that hydrologic changes to the  
16 watershed landscape generally occur before serious water quality alterations. As  
17 built out is reached, hydrologic impacts are reduced because the primary impacts  
18 have already occurred from the elimination of forest. Over time the forest grows  
19 back as the neighborhood landscaping matures (the condition of Miller, Walker and  
20 Des Moines Creek basins). Then water quality impacts become the major concern in  
21 preventing degradation of aquatic resources.  
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25  
DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 26

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**AR 006813**

1           **53. The mitigation proposal does not fully compensate for wetland losses**  
2 **because it is reductionist.** The Port contends that in-basin wetland functions can be  
3 replaced using stormwater management, embankment design for seepage flows,  
4 water quality management in watershed and habitat enhancement. The implication  
5 is that we could recreate the functions afforded by wetlands without the wetland.  
6 This question presumes that: 1. We know all of the individual processes or roles that  
7 wetlands provide to overall ecosystem functioning, 2. Wetlands within an ecosystem  
8 are analogous to job categories within a factory and there is a one-to-one overlay of  
9 functions for specific processes which can be duplicated by technology, and that 3.  
10 Ecosystems do not change in ways that influence which wetland functions are most  
11 needed to carry out key roles. Following the Port's logic, wetland creation is  
12 unnecessary to mitigate for losses because wetland functions can be successfully  
13 duplicated with technology.  
14

15           **54.** In fact, wetland scientists know hydrologic conditions are extremely  
16 important for the maintenance of a wetland's structure and functions, but simple  
17 cause and effect relationships are difficult to establish. Hydrologic conditions affect  
18 many abiotic factors including salinity, soil anaerobiosis and nutrient availability.  
19 These in turn determine the flora and fauna that develops in a wetland. Finally  
20 completing the cycle, biotic components are actively altering the wetland's  
21 hydrology. The wetland ecosystem is both determined by hydrologic conditions  
22 and, in response, alters hydrologic conditions within a watershed. A wetland is not  
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DECLARATION OF AMANDA AZOUS IN  
SUPPORT OF ACC'S MOTION FOR STAY - 27

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**AR 006814**

1 a static technology but a responding system that is both altered by and alters in turn  
2 the watershed of which it is a part, engined by the production of biodiversity.

3 55. The values and functions of wetlands that have been integral to  
4 analyses for antidegradation laws were not intended to be used as a basis for  
5 eliminating particular wetland functions as though the whole of a wetland  
6 ecosystem could be satisfactorily defined by its parts. We still know very little about  
7 the complex ecological relationships of a natural wetland and have few successes in  
8 construction or reconstruction of a wetland system. Therefore, most peer reviewed  
9 wetland scientists and ecologists will not advocate for the replacement of wetlands  
10 with stormwater management technologies and enhancement activities.  
11

12 56. Granting of a stay is critical because the Port's near term plan for filling  
13 wetlands will have an immediate effect on many remaining Miller Creek wetlands  
14 affecting water quality and food web dynamics in the aquatic environment. The  
15 Port's proposal and Ecology's 401 Certification depart from best available scientific  
16 knowledge of how to evaluate and effectively mitigate for wetland functional losses  
17 inherent in the Port's proposal. Ecology's 401 decision permits a project that  
18 ignores basic science-based principles of wetland protection and wetland loss  
19 mitigation. If that decision is implemented before the Board can review its merits,  
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irreparable harm to the watersheds will occur.

1 I declare under penalty of perjury under the laws of the State of Washington  
2 that the foregoing is true and correct.  
3

4 DATED this 8th day of October, 2001, at Seattle, Washington.

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Amanda Azous



**Attachment A: References from Port Documents Regarding Wetlands to be Filled or Impacted by Near Term Fill of 2.8 Acres.**

1. The wetlands to be filled are identified in Exhibit B of Michael Cheyne's October 1st declaration, which is attached for reference. Of the wetlands proposed to be filled near term, shown in Exhibit B, two (Wetlands 18 and 20) are ranked by Port consultants as high for providing organic export, three (Wetlands 18, 19 and 20) are ranked high for providing groundwater exchange functions.<sup>1</sup> A ranking of high is defined by the Port as a wetland, which "contains several important characteristics required to perform the functions, and lacks attributes that limit or prohibit the function from occurring in the wetland."<sup>2</sup>
2. Also very pertinent is that several of the wetlands to be filled in the near term are noted in the Port's early wetland surveys to be water sources to downstream wetlands and ultimately Miller Creek. Some examples quoted from the Port's documents are:
3. Wetland 18 – "The wetland is located along a slope and water entering the wetland [*from groundwater discharge and precipitation*] flows west to Miller Creek."<sup>3</sup> "A small perennial stream flows west to a culvert at the west end of the wetland."<sup>4</sup>
4. Wetland 19 – "High concentrations of organic matter occur throughout the soil profile. A perennial stream flows the length of the wetland. The stream originates as a seep at the base of the fill in the wetland's eastern end. ... At the time of the investigation (August 25<sup>th</sup>, 1994), water flowing in the stream was 3 inches wide and 2 inches deep at its western

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<sup>1</sup> *Wetland Functional Assessment and Impact Analysis; Master Plan Update Improvements*, Seattle-Tacoma International Airport, December 2000 by Parametrix, Inc., Table 3-3, pages. 3-5 to 3-6.

<sup>2</sup> Declaration of James C. Kelley, PH.D., October 1, 2001, paragraph 25.

<sup>3</sup> *Wetland Delineation Report; Master Plan Update Improvements*, Seattle-Tacoma International Airport, December 2000 by Parametrix, Inc., page 3-22.

<sup>4</sup> *Ibid.*, page E-6.

end. Soils throughout the wetland were moist or saturated to the surface.”<sup>5</sup>

5. Wetland 20 – “Water leaving the wetlands [20a and 20b] drains to a swale (Water W) that flows toward the northwest to a drainage ditch along 12<sup>th</sup> Avenue (Water A). A culvert beneath 12<sup>th</sup> Avenue conveys this surface water into Wetland 37.<sup>6</sup> Regarding Wetland 37, the Port says “The wetland conveys groundwater seepage, surface water runoff and discharge from Wetland 20 to Miller Creek”.<sup>7</sup>
6. Wetland 35 – “A French drain and culvert at the west end of the wetland collects surface water and directs it to roadside ditches and storm sewers that eventually convey the water to Miller Creek. At the time of the July 1998 visit, soils were generally saturated to the soil surface throughout most of the wetland.”<sup>8</sup>
7. On September 1 in 1994, Wetland 18 is described by the Port’s consultants as having “soils saturated at depths ranging from 8 inches to the surface” very late in the dry season.<sup>9</sup> Wetland 37a is described in Port documents as being fed by water from wetlands 19 (via Water A), 20 and 21. Wetland 19 was observed to have flowing water as late as August 25<sup>th</sup> when it was examined in 1994 and was therefore contributing water to Wetland 37, which the Port describes as having saturated soils “within 12 inches of the surface throughout most of the wetland” and “inundation and flowing were present in the center of Wetland 37a” as late in the dry season as October in 1998.<sup>10</sup> These descriptions depict wetlands that are saturated until just before the start of fall rains.

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<sup>5</sup> Ibid page E-6.

<sup>6</sup> Ibid, page 3-18.

<sup>7</sup> Ibid, page 3-24.

<sup>8</sup> Ibid., page 3-23.

<sup>9</sup> *Wetland Delineation Report; Master Plan Update Improvements*, Seattle-Tacoma International Airport, December 2000 by Parametrix, Inc., p. E-6.

<sup>10</sup> Ibid. P. 3-24.



8. The hydrology described in these initial surveys of Wetlands 18 and 37 differs enormously from that the picture depicted by the Port's limited monitoring of each wetland, which occurred once in April 2000 and once in each month of February, March, May, June and July of 2001. In April of 2000, water depth was not measured but the Port reports water and saturated soils to the surface in wetlands 18 and 37. April was not measured in 2001, but by May depth to saturation and water is greater than 18 inches below the soil surface in the two monitoring stations in Wetland 18 and in all three monitoring stations in Wetland 37.

**EXHIBIT**

**AR 006821**



1997

AR 006822

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**AR 006823**



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AR 006824