

# Letter 10

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December 29, 2003

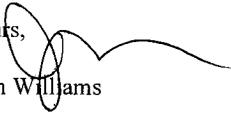
Dear Sir/Ms:

Here are comments regarding the DEIS for the Wanapa Energy Center near Hermiston, Oregon, on behalf of:

Ivan Needs  
32855 W Walls St.  
Hermiston, OR 97838.

Please sent the FEIS to my address above. Please also notify me of any other public comment opportunities regarding this project.

Yours,

  
John Williams

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## EXECUTIVE SUMMARY

This DEIS failed to comply with NEPA because of errors which include, but are not limited to the following: The DEIS failed to provide an accurate purpose and need statement, it failed to study alternatives to reduce its water use, and the DEIS also failed to take the requisite "hard look" at its water use and discharge impacts, its ammonia use, and the cumulative air quality impacts.

## PURPOSE AND NEED

It's very important how the DEIS defines the "purpose and need" of this project. The stated project purpose and need is to supply energy for base and peak electricity demands. But there is no specific evidence presented regarding any local or regional demand for base or peak supplies of 1300 megawatts of electricity. The only evidence presented is general data describing a 1-2% annual growth in national energy needs.

The WECC study cited in the DEIS to support assertions of an energy need is already 3 years old. The DEIS failed to describe whether it is even accurate regarding its first three years of predictions. That study also said there is adequate generation to meet needs for 10 years.

The WECC's more current data shows that the Northwest's generating capacity is already predicted to increase by 3100 MW by 2003 to over 81,000 MW, compared to the needed reserves of only 65,600 MW, and that energy demand actually fell from 8-11% from 2000 to 2001. (WECC, 2002 Information Summary).

As for the NPPC, it now predicts that the needed 3100 MW will be added by December, 2002, in its Power Supply Outlook, May, 2001-April, 2002.

Over 2600 megawatts were recently added to the Northwest grid: Hermiston Power Partners, Chehalis, Rathdrum Generation, Klamath Falls Cogen, the Hanaford turbine, and Frederickson II, along with upgrades at Puget Sound Energy/Fredonia, and smaller turbines added at Willamette Industries and elsewhere.

There are also at least another 2000 megawatts under construction; Goldendale Energy, Miriant Mint Farm, Satsop I, and Coyote Springs II, along with another 6000 Mw that are virtually or actually fully permitted and/or are declining to start construction; Plymouth Energy, Garnet Energy, PGE/Tacoma, Tahoma Energy, Umatilla Generating, Wallula, Sumas II, The Cliffs, Summit/Westward Energy, Port Westward, and Everett I & II.

In other words, even if there was a 3000 Mw shortfall predicted three years ago, that gap has been more than filled by this addition of over 4600 Mw of constructed or permitted gas-fired power plants, in addition to another 1000-odd Mw of constructed wind power. In fact there is now a glut of natural gas fired energy. There is no evidence that the market can support another facility. The Mint Farm and Satsop I plants have had their construction recently terminated when the plants are more than half built, and Goldendale Energy has delayed completion of their plant for a year.

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10-1 The current wholesale power market in the western U.S. and Canada encourages the development of efficient power generation facilities to satisfy increasing power demands and to discourage the development of inefficient and unnecessary facilities. In this market, project developers are expected to move forward with construction of projects only when convinced that a demand exists for the power that the facilities would produce. Project financing, likewise, depends on a demonstration of demand and economic benefit.

The recent "Northwest Regional Forecast of Loads and Resources for August 2004 through July 2009," compiled by PNUCC1, and the similar report for the year 2003 and other forecasters, show a peak power deficit every year during the next five-year reporting period, and an energy deficit starting in 2008-2009, based on an average hydropower conditions.

Still, many economic factors would influence future demand for electrical power, and the current response of power developers to shut down or abandon power projects is mostly related to their current difficulties in meeting their financial obligations, balance sheet weaknesses and credit ratings. The Wanapa project is not a merchant plant as most of the projects noted in the comment and it intends to be a long-term provider of electrical power based on long-term contracts. The proposed project plans to be competitive in the marketplace, or it won't be built.

Finally, one of the primary aspects of the purpose and need of the project includes economic benefits to the CTUIR that represent objectives that the BIA must address as part of its trust responsibilities.

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<sup>1</sup> Pacific Northwest Utility Conference Committee (www.pnucc.org).

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10-1

Another dozen plants have recently withdrawn or delayed their proposals, such as Mercer Ranch, North Idaho Power, Kootenai Power, and Morrow Generating. Others (another 3000 Mw) also have applications pending; Turner, Coburg Energy, COB and BP.

In other words, the Purpose and Need Statement for the DEIS is outdated and inaccurate. The Agencies' decision to proceed with permitting of this plant runs the risk of committing and squandering public agency staff and the public's time, and natural resources, land uses, and investment capital, for a power plant that is not needed in the foreseeable future.

### NEPA COMPLIANCE

The twin goals of NEPA, 42 U.S.C. 4331 et seq., are to guarantee that:

1) federal agencies take a "hard look" at the consequences of their actions before the actions, and that an EIS contain a discussion of the "alternatives to the proposed action." This discussion of alternatives is at "the heart" of the NEPA process.

(1) federal agencies take a "hard look" at the consequences of their actions before the actions occur by ensuring "that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts," *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); and (2) "the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision." *Id.* at 349. NEPA requires federal agencies to look before they leap.

A "hard look" requires the agency to engage in a "reasoned evaluation of the relevant factors" to ensure that its ultimate decision is truly informed. *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1332 (9th Cir. 1992). The EIS analysis must be searching, detailed and comprehensive; "[g]eneral statements about 'possible' effects and 'some risk,' do not constitute a 'hard look' absent a justification for why more definitive information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998).

NEPA is designed to ensure a fully informed and well-reasoned decision. "In so doing, the EIS insures the integrity of the process of decision by giving assurance that stubborn problems or serious criticisms have not been 'swept under the rug.'" *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1978).

This DEIS does not comply with these and other NEPA requirements, by failing to study alternatives for water cooling and power line designs, and by failing to take a hard look and

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provide information on air cooling, cumulative air impacts, global warming, risks of fire and explosion, and other topics as discussed in greater detail in the rest of these comments.

10-2

### **THE DEIS FAILED TO DISCUSS REASONABLE PROJECT ALTERNATIVES**

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." This discussion of alternatives is at "the heart" of the NEPA process. 40 C.F.R. 1502.14. The CEQ regulations require the agency to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. 1502.14(a). To do so, the agency must take a "hard look" at the environmental consequences of each of the alternatives. The failure to examine ANY viable project alternative will render the EIS inadequate.

Consideration of project alternatives is the heart of NEPA and this obligation is ignored at great legal peril. But this DEIS did not examine a single alternative other than "no project" and some minor tinkering with transmission line or pipeline routes.

### **ALTERNATIVE COOLING DESIGNS**

The project's primary impact is its massive water use. But the DEIS lacked a comprehensive discussion of alternative designs for this project to mitigate this impact, including, but not limited, to air, hybrid, and grey water cooling methods. Indeed, the DEIS baldly claimed at 2.39 that "No ... option was identified that would reduce (water supply) environmental impacts."

10-3

Using air cooling, or a hybrid cooling system, are plainly viable alternatives that would all avoid or reduce the project's proposed surface water impacts. Indeed, this very developer (Diamond) proposed air cooling for its power plant in southern Nevada. Diamond's Ivanpah DEIS stated plainly that its air-cooled 500 Mw power plant "...reduces water use by 90% or more as compared to wet cooling with a conventional cooling tower ... dry cooling (for a 500 Mw plant) reduces water usage from 3000 acre-feet to more to 300 acre-feet." (P. 3-1) Diamond's Inanpah DEIS did not contain a single word about any disadvantages of air cooling. But now, in this DEIS, there is no mention or air cooling at all. Clearly, this DEIS failed to take a "hard look." as required by NEPA, at the plant's massive proposed water use and the alternative of air cooling.

### **ALTERNATIVE DESIGNS TO FURTHER REDUCE WATER USE AND DISCHARGE**

The proposed plant will use water cooling. It will consume a peak of over fifteen million gallons per day of water. This is a massive rate of water use for this size of power plant. Many power plants are designed to use far less water by any measurement.

For instance, the operating natural gas fired Chehalis power plant will use only about 1.3% as much water to generate about 50% as much power. The Chehalis plant will be a 550 MW air cooled plant, while Wanapa will be a 1200 MW water cooled plant. Chehalis will use 192,000 gallons of water per day, while Wanapa will use over 15,000,000 gallons per day, or almost 100 times as much water at peak use.

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10-2 See response to Comment 5-6.

Alternative power generating projects, such as coal, oil-fired and nuclear plants in lieu of a gas fired gas turbine plant, were eliminated due to high cost and environmental impacts and regulatory barriers.

10-3 **Alternative Cooling Designs.** A dry cooling system at the Wanapa plant would add approximately \$83,200,000 to the construction cost of the total facility or \$41.62 millions to the cost of one block of 600 MW (nominal). Because this system of cooling is less efficient there would be a 4 to 5 percent power loss on the steam turbine generator, which must partly be made up by the combustion turbines and duct burners resulting in higher fuel use and emissions. This would put the Wanapa project at a competitive disadvantage to the other water-cooled plants in the Pacific Northwest.

Diamond's Ivanpah project is located in an arid region where there is no surface water available in the area. Diamond Ivanpah project serves a very fast growing market and remain competitive despite the cost of development. The air-cooled Doswell plant, located in Virginia, also was developed by Diamond.

The commenter references the Plymouth project for its hybrid design. The following information is available in the Plymouth EIS in the public domain.<sup>1</sup> In order to maintain efficiency, Plymouth would operate the air-cooled condenser during the cold weather periods (when water is abundant) and would operate the water-cooled condenser during the summer (when water is less available). While such an operation would conserve water, this conservation is not beneficial due to the season of use versus water availability. Installation and operation of two 100 percent condensers similar to the Plymouth project would add substantially more than the \$83,200,000 to the cost of the project and it would make the project economically uncompetitive

The project evaluated use of gray water. However, due to the lack of sufficient quantities available from either Hermiston or Umatilla this option was eliminated.

<sup>1</sup>Plymouth Generation Facility Final EIS located at: [www.bpa.gov](http://www.bpa.gov)

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## 3-3 Cont'd

**Water Flow Quantity.** This response to the water flow comments must address the quantities noted in the comments. The statement, “it [the plant] would use a peak of over 15,000,000 gallons per day of water” is misleading. In this context, peak flow is defined as that flow which would occur at certain hours of the summer day where the ambient temperature is at the highest (109°F). It is worth noting that this project would use substantially less water when ambient temperatures are low (morning, night, spring, fall, and winter). For the Wanapa project, the plant average water flow is less than one-half of the 15 million gallons per day. It varies from 8 MGD on a cold winter day to 11.5 MGD during the hottest summer day with an average yearly flow of 7.99 MGD. The figure of 5.4 billion gallons per year cited by the commenter can only be arrived at if the peak flow would take place 365 days per year, which is the equivalent of hot ambient temperatures (109°F) occurring every hour and every day of the year (365 days).

Approximately 80 percent of the water is evaporated to get rid of the heat from the steam condenser. Therefore, comparison between of water-cooled plants and air-cooled plants would not produce an accurate water use per MW of generation. The referenced Chehalis plant is a 550-MW (nominal) air-cooled plant. A comparison of the water use between the 550-MW air-cooled Chehalis plant and the 1,200-MW (nominal) water-cooled Wanapa plant would technically be inaccurate and produce non-comparable results. Diamond’s Ivanpah project, which also is a 550-MW (nominal) air-cooled plant, if compared to Chehalis, also would offer an accurate comparison. Diamond’s Ivanpah project uses much less water than the Chehalis plant.

**Greenhouse Gas Emissions.** Steam/water vapor in the form of clouds in the atmosphere is a commonly occurring phenomenon. The proposed turbines would emit the primary and greenhouse gas (GHG) pollutants of CO<sub>2</sub>, methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). The water vapor from the cooling towers is not considered a major greenhouse gas. A GHG emissions inventory has been prepared for these pollutants from Wanapa. The emissions of each pollutant are multiplied by the respective Global Warming Potential (GWP) for a 100-year time horizon to convert the results into a single CO<sub>2</sub> equivalent emissions value. The results are shown in Table [redacted] below.

**Table [redacted]**  
**Greenhouse Gas Emissions from Wanapa Energy Center**

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP) 100-year	Annual Emissions, CO <sub>2</sub> Equivalent (1,000 tons)
CO <sub>2</sub>	4594.6	1	4594.6
Methane	0.28	21	5.8
N <sub>2</sub> O	0.0055	310	1.7
<b>Total</b>			4602.2

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For the mitigation of the GHG gases and other environmental impacts, the Wanapa project has established an environmental mitigation foundation where \$8,000,000 or \$16,000,000 would be deposited into the fund for an 600 MW (nominal) or 1,200 MW (nominal) plant respectively, at the close of project finance. The proceeds from the funds would be used for environmental mitigations in perpetuity in the region. This fund exceeds the State of Oregon requirements over the life of the plant. Wallula was required to deposit \$5.35 million for the 1,300-MW (nominal plant) for greenhouse gas mitigation, which is less than a third of the 1,200-MW Wanapa Environmental Foundation funds.

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## AIR COOLING

The DEIS should have discussed alternative designs to mitigate the plant's water use, which would include air cooling, rather than water cooling for the facility.

Heated water vapor is also widely recognized as a contributor to the global warming problem.<sup>1</sup> A change to air cooling would also eliminate this discharge of water vapor, thus partly mitigating the facility's greenhouse gas emissions.

10-3

## HYBRID COOLING SYSTEMS

These types of plant designs use a combination of both air and water cooling. The Wanapa plant DEIS should have discussed hybrid water/air cooling as mitigation of the proposed use of high quality groundwater for plant cooling purposes. The Plymouth Energy plant, recently permitted in eastern Washington, will use a version of hybrid cooling. It will use about one-fourth as much water per megawatt as will Wanapa. Plymouth Power will use 1 million gallons of water as a daily average, to generate 307 Mw. In other words, Plymouth will use 1/15th as much water to generate 1/4 as much power.

## WATER QUANTITY IMPACTS

Instead of discussing reasonable water conservation alternatives that are in wide use, the DEIS attempts to trivialize the power plant's unnecessary consumption of almost 15 million gallons of water per day, which is far more than similar power plants already constructed or proposed for the Pacific Northwest and elsewhere

For instance, the DEIS at 2-39 describes the Columbia River as an abundant and reliable water supply. This statement ignores the reality that the project is located in a desert with annual rainfall of less than 10 inches. The DEIS fails to acknowledge that water in this area is a scarce resource, with an extremely high priority for many competing uses. A high level of water conservation should be required, yet the DEIS claims no alternatives are available, even though the DEIS admits at 2-45 that groundwater resources in the vicinity are extremely limited.

10-4

The DEIS inaccurately assumes that this 15 million gallons is "available" even during low flow periods on the Columbia River. In fact, current water rights on the Columbia River, if fully exercised, may actually oversubscribe the River's flows. While this plant will not require a new water right, it will, by itself, consume a large increment of the Port's water rights, thus rendering 5.4 billion gallons of water per year unavailable for other uses. This means that the Port will no longer have a large unused water right available for future uses; that is a significant adverse impact and alternatives that reduce its impact must be discussed in an DEIS.

During recent, past droughts, as recently as 2001, many large industrial users such as the Atochem plant, and several large agricultural water users in eastern Washington have been forced to shut

10-4 See responses to Comments 5-5 and 6-3.

<sup>1</sup> California Energy Commission, 1991.

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10-4 down, threatened with shut-down, and/or forced to vastly reduce their water use because of lack of water. Plainly, one of the biggest adverse impacts from the Wanapa Project is on water availability. Its consumption of about 5.4 billion gallons per year of Columbia River water could draw down reduce riparian and aquatic habitat, degrade habitat for threatened and endangered aquatic species, including salmon, and endanger senior water rights. No mitigation is proposed.

### **PROPOSED WATER USE IS NEEDLESSLY WASTEFUL**

The DEIS should have discussed the wasteful implications of Wanapa Power being a single use facility with no usable discharge, unlike cogeneration power plants, which discharge steam for reuse by industrial facilities. Nor does Wanapa reuse gray water like other power plants, including the new facility in Klamath Falls, or reuse agricultural processing water like other plants in the Hermiston/Umatilla area. Its use of cooling towers will needlessly create salt drift and particulate fallout from the massive discharges from its cooling towers and smokestacks in the project vicinity, which will degrade soils, and surface and ground waters from its fallout.

10-5 For instance, the Wanapa Project could reduce water usage by 90% with air-cooling technology. Instead it proposes to squander precious surface water, in a desert, with an inappropriate technology of water-cooling only. The proposed 5 billion gallons of annual usage is a plainly wasteful, single end use with very limited economic benefit, and with troubling environmental consequences. As the California Water Resources Resolution #75-58 and the current California Attorney General have stated:

“The loss of inland waters through evaporation in power plant cooling facilities may be considered an unreasonable use of inland waters...When clean, high-quality water is consumed by a disfavored source, such as cooling towers, **this is nothing but reckless waste.**”

The California Attorney General noted that proposed and/or operating California power plants, including the Sutter, Delta Energy, and Los Medanos, Otay Mesa, Metcalf, Moss Landing, and Nueva Azalea power plants, all are either air cooled, or use recycled waste water. While California policy has no legal implications for the Wanapa plant, it does state that use of high quality water for power plant cooling is a reckless waste, with the authority of a Water Resources Agency in a large neighboring state. This powerful opinion that the Wanapa plant is committing a reckless waste of surface waters, should prompt the preparation of a supplemental DEIS that discusses the alternative of air cooling as a project design.

### **SUPPLEMENTAL DEIS TO STUDY AIR COOLING**

10-6 Indeed, when the BPA was conducting its NEPA review of the Chehalis facility, after public comments called for air cooling at that facility, BPA did prepare a supplemental DEIS to discuss air cooling of that plant. That was a fortunate decision. Years later, when air cooling was chosen for that plant, no additional NEPA review was then necessary.

Furthermore, the President of the United States convened a group of experts who produced a

10-5 See response to Comment 10-3.

10-6 See response to Comment 10-3.

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National Energy Policy document. This Policy presented a comprehensive approach to a range of Energy issues, including construction and operation of new power plants. This Policy stated:

“Federal and state regulators are working with businesses and communities to mitigate ... adverse impacts (from energy generation) by ... fostering the use of technologies that both protect environmental goals and meet energy production goals.

For example, as a result of an analysis under the National Environmental Policy Act of the impacts of a new power plant in California, the company building the plant agreed to change the design to use a dry cooling method. This change reduced ground-water consumption by 95% and eliminated both cooling tower “blowdown” water and particulate emissions, while still achieving the desired energy production.” (National Energy Policy p. 3-7)

In other words, Energy Policy proposals from the highest office in the land recently made a specific point that a NEPA analysis has already found that air cooling of power plants is an acceptable and desirable compromise between environmental impact and energy production. We urge the BIA/BPA to follow those recommendations, and study air cooling of the Wanapa proposal as an environmentally preferable alternative.

Wanapa will be a year-round user with higher usage rate during the warmer months when appropriated water demand is highest. The plant could be redesigned to a “hybrid” air and water-cooling system, in which full water cooling would be used only during the hottest weeks, and air cooling would be used at all other times. This hybrid cooling technology is proposed for use at the Sumas II plant in Northwest Washington and is in use elsewhere.

The best project alternative is avoiding the impact of the massive water withdrawals. The best method of mitigation for the Wanapa project is to reduce their water usage by 90% with air-cooling. That would minimize the depletion of stream flow and would preserve the Port’s water rights for future demands.

Many existing and proposed power plants are solely air cooled, including the two operating Neil Simpson plants and the Wyodak plant in Wyoming, the operating Rosebud power plant in Montana, the operating Crockett plant in California, the operating Chehalis Power facility in the State of Washington, the operating Doswell facility in Virginia, the operating Matimba, Kendal, and Eskom powerhouses in South Africa, the operating Linden and Sayreville plants in New Jersey, Taiyuan #2 in China, Trakya in Turkey, Uran III in India, Tousa in Iran, and the Camarillo facility in Ventura County, California.

The California Attorney General noted that the proposed/operating power plants in California, including the Sutter, Delta Energy, and Los Medanos, Otay Mesa, Metcalf, Moss Landing, and Nueva Azalea power plants, all are either air cooled, or use recycled waste water.

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Other proposed air-cooled plants are the Colorado Springs Utility plant near Fountain, Garnet near Boise, Idaho, PPL/Starbuck, Reliant Energy's Choctaw County and Hunterstown, Pennsylvania plants, the Mercer Ranch proposal near Tri-Cities, Washington, and the proposed Duke and Mirant plants within the jurisdiction of the Las Vegas Water District.

10-6 In fact, published accounts state that the project developer for the Wanapa plant, Diamond Generating, proposed air cooling for its 500 Mw Ivanpah Energy Center, near Goodsprings, Nevada. Published accounts quote Diamond Generating as said their Ivanpah 500 Mw plant would use only 30-50 acre-feet of grey water annually. This is an amazingly small amount compared with the shocking 12,286 af proposed for Wanapa.<sup>2</sup> Even though Wanapa is 2.5 times larger than Diamond Energy's Inanpah proposal, it is using 245 times as much water.

### **HYBRID COOLING SYSTEM**

10-7 This is a plant design that uses a combination of both air and water-cooling, and are in use at the West Cogeneration plant in Germany, and the Exeter Energy plant in Conn., USA, and is proposed for the Sumas II facility, and the Plymouth Power in eastern Washington. Water use is cut approximately in half. The NEPA analysis have should considered and discussed the hybrid cooling system as a viable alternative in the DEIS.

### **GREY WATER**

10-8 The recently permitted Klamath Falls power plant is the only latest of many plants in the United States that uses gray water (reused water), rather than high quality surface water for power plant cooling. Diamond's Ivanpah plant also proposed use of grey water.

### **MITIGATION BY AVOIDANCE OF THE WATER USE IMPACT-CONCLUSION**

In summary, almost 40 plants that are proposed or are operating with either air cooling, recycled waste water, or hybrid cooling systems. We are sure there are more. This list demonstrates that there are readily available alternative methods of cooling which avoid the wasteful water use proposed by Wanapa, that are available and in common use.

10-9 Wanapa's wasteful use of an inappropriate cooling technology threatens other beneficial uses, both now and in the future, specifically the appropriations of senior water rights, particularly in drought years. Again, the NEPA analysis should study whether the project could choose to use air-cooling or hybrid cooling methods, which would reduce this waste and reduce the damage to the water resources of the state.

The Wanapa plant does not integrate or coordinate with other water usages. The plant will consume over 5 billion gallons of pure water yearly for a single use, and would provide a mere handful of jobs.

Wanapa is not a cogeneration plant, like the new Klamath Falls facility, where the plant's steam is

<sup>2</sup>17 cfs times 1.98 times 365 days.

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10-7 See response to Comment 10-3.

10-8 See response to Comment 10-3.

10-9 See response to Comment 10-3.

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shared with another industrial facility. Instead, the proposed plant is on an isolated, inappropriately zoned area, which will serve no other businesses. It does not reuse gray water for cooling like the Klamath Falls facility. The resulting waste water is unfit for irrigation because of its high TDS levels and will serve only a single purpose.

Furthermore, the current power plant market is extremely speculative, and is in a boom/bust cycle of over-building of power plants in hopes of raising rates and increasing profits. Calpine, one of the nation's largest power plant builders, recently announced the suspension of over 30 proposed power plants. Cogentrix itself has announced the delay of proposed plants in Washington and West Virginia. This competitive exploitation is to be discouraged when it involves public waters.

The project will not serve balanced multiple uses. Instead, it will concentrate the one of the largest water appropriations in the Basin into the hands of a single user, who will not reuse gray water, will not provide steam, and will produce only a small water return flow containing concentrated levels of metals and high TDS concentrations.

10-9 We suggest that the FEIS should adopt mitigation requirements that closely follow the State of California rules regarding water sources for power plant cooling waters. In sum, actually and potentially potable water should not be squandered as a power plant cooling source, unless and until all other alternatives have been discussed, examined, and exhausted.

Completely or partially air cooled plants, with vastly reduced water demands, currently run reliably, and profitably. This very same developer Diamond Energy, proposed an air cooling for its Ivanpah plant in southern Nevada, as discussed. The California Energy Commission has conducted many reviews, and issued approvals of air cooled plants. The proceedings of these reviews contain copious evidence that air cooling of power plants is fully economically feasible. In one case, for instance, an expert witness testified that air cooling of a power plant would cost only .03% percent of the internal rate of return of the facility.<sup>3</sup>

Simply put, the most important water mitigation measure that should be required, is water conservation through partial or complete air cooling, as is proposed, or done, at scores of similar power plants across the country and world. But the DEIS was utterly silent on this vital topic. This violates the important twin principals of NEPA; there was no hard look taken at the plant's water use, and there was no alternative design discussed.

### WASTEWATER DISCHARGES

10-10 The plant will run its cooling water through 6 cycles before its discharge to a reservoir. This will concentrate metals and other trace contaminants in the Columbia River by 600%. Table 3.2-3 in the DEIS shows the resulting concentration of metals and other contaminants in the effluent. Metals in the effluent will be six times the concentration present in the influent. The DEIS at

<sup>3</sup>Testimony of Dr. Fox. Elk Hills Case Proceedings. Page 111.

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10-10 The raw water from the Columbia River would be treated by coagulation and filtration prior to use in the plant. Some constituents in the water, such as mercury, are partially removed by these processes or evaporated in the cooling tower. As a result, the concentration of some constituents in the effluent would be significantly less than six times the incoming raw water concentration.

The relative impact of metals' concentrations in the effluent is evaluated after it is mixed with water in the Cold Springs Reservoir. The ODEQ's mixing zone calculation would be applied in determining the metals' concentrations at the edge of the mixing zone and its potential toxicity to aquatic organisms. If it is determined that the concentration of a metal at the edge of the mixing zone is above state water quality standards, the plant would treat the water to reduce the concentration of that metal in the effluent before discharge.

The plant discharge water is treated for temperature in the cooling tower. The project intends to use an efficient cooling tower where the water temperature would be much lower than the ambient air dry-bulb temperature. For example, when the air dry-bulb temperature is 93°F, the cold water temperature from the cooling tower may be lower than 75°F. When the air temperature is below 20°F (site minimum average temperature), the water discharge from the cooling tower would be approximately 40°F (to prevent icing) and the plant discharge temperature (due to the cooling effects of the holding pond) would be approximately the same temperature as the surface water of Cold Springs Reservoir.

The toxicity of some metals increases as temperature increases. The average temperature of the effluent, would be approximately 70°F to 75°F in the summer where the effect on metals toxicity would be negligible.

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3.2.14 claims that metals levels in the effluent will not approach water quality criteria.

The mercury concentration in the influent is shown as 2.3 ug/l. This would produce 13.8 ug/l in the effluent, but the table claims that resulting mercury concentrations will only be 1.6 ug/l. The DEIS should have explained how the power plant will take water containing mercury at 2.3 ug/l, concentrate it 6 times, and end up with lower concentrations of mercury than before. It is more likely that mercury in the effluent will be at levels of 13.8 ug/l, which vastly exceeds the chronic fresh water criteria of .012.

Table 3.2-3 predicted levels of copper at 6 ug/l in the effluent. But Table 3.2-1 shows that Spring, 2003 analytes revealed total recoverable copper at 1.6 ug/l, meaning that the effluent will contain peak concentrations of total copper at levels of about 9.6 ug/l. Copper at this concentration is known to cause adverse impacts in fish, especially with the bioaccumulative nature of copper. The EPA Gold Book states, for instance, that the chronic threshold for brook trout exposure to copper is only 3.873 ug/l. Several studies also indicated that elevated water temperatures also increased the toxic effects of copper on trout.

Since the effluent will be discharged at temperatures as high as 96 degrees Fahrenheit, there will be a cumulative adverse impact on affected aquatic species from the combination of both copper and heat. In addition, sub lethal discharges of zinc, in combination with heat and copper, have also been linked to increased adverse impacts on trout and related species. Wanapa will be also be discharging zinc. An EPA study noted that when sub lethal zinc concentrations are simultaneously present, concentrations of copper as low as 10 ug/l can suppress gill functioning.<sup>1</sup>

Table 3.2.3 shows TDS will be at 1600 mg/l in the waste water, which exceeds groundwater quality criteria in Oregon. Reuse of that concentration of TDS for irrigation water could cause significant adverse impacts on groundwater, even after dilution by reservoir water.

The DEIS at 3.2. 12 falsely claims that maximum reuse of water takes place at Wanapa. The proposed 6 cycles is only half as many cycles of cooling water as are proposed at many power plants. Maximum re-use would involve far more than six cycles.

### **IMPACTS FROM WATER DISCHARGES**

The DEIS should have provided information on the toxicity of inhibitors or algicides that would be discharged in the waste water, including but not limited to chlorine compounds, such as sodium hydrochlorite, which were listed at 2-9.

The DEIS claims that chlorine levels are non-toxic but proposed amounts of chlorine compounds to be used, and the resulting concentrations, are not presented at 3.2-13, either. The DEIS reference to a potential chlorine compound feed rate of 1-20 ppm would be a highly toxic level and could exceed the chronic and acute water quality standards for chlorine.

3.2-18 admits that the hydrostatic water is contaminated but fails to present likely concentrations

## Responses to Letter 10

**10-11** The water quality data collected from the Cold Springs Reservoir indicates that the TDS loading from the effluent would not significantly increase the TDS concentration in the reservoir such that irrigation uses would be affected. The average monthly flow to Cold Springs Reservoir would be less than 0.4 percent of the reservoir capacity.

**10-12** The PSD permit issued by the USEPA would require a limitation on TDS in the cooling water - higher cycles of concentration would result in higher TDS and PM<sub>10</sub> which would cause violation of air permit limits. While it is economical for Wanapa to operate at higher cycles of concentration, the PSD permit's TDS (and PM<sub>10</sub>) limitation requires operation at lower cycles of concentration. In addition, higher cycles of concentration may affect the NPDES permit. Cycles of concentration are determined by the quality of the raw water. The upper limit of cycles of concentration is determined based on the concentrations of constituents in the raw water together with consideration of equipment efficiency, and environmental impacts on the air and discharge water. The raw water analytical data was used to calculate the maximum concentrations that could be tolerated without jeopardizing plant efficiency. There are a number of constituents such as calcium, magnesium, silica, sulfate and carbonate that become insoluble above a specific concentration and begin to deposit out on operating surfaces in the plant. These deposits eventually interfere with heat transfer, affect plant efficiency and significantly increase operating and maintenance costs.

**10-13** The corrosion inhibitors that would be used are primarily phosphate-based and organic polymer based compounds with very low or negligible toxicity. The primary biocide used in the cooling system would be sodium hypochlorite, which would generate chlorine compounds in the cooling water. However, chlorine compounds are rapidly reacted in this type of system and the sodium hypochlorite feed rate would be controlled to provide a small excess over system consumption. In addition, the NPDES permit for discharge of the effluent would have very strict limits for discharge of chlorine from the facility.

If the discharge water is not within the limits of the NPDES permit for chlorine, the facility would be equipped with a de-chlorinator to treat the water to bring it to within permit requirements.

Normally the hydrostatic test water is reused for subsequent tests and finally collected and trucked off site by a qualified contractor to a licensed facility. Hydrostatic test water may have low concentrations of oil and suspended solids. If it were necessary to discharge hydrostatic test water to Cold Springs Reservoir, such discharge would be conducted under the NPDES discharge permit and would meet permit limits and state water quality standards. If the test water were determined not to conform to regulations and permit limits, it would be collected and trucked off site by a qualified contractor to a licensed facility.

## Letter 10 Continued

- 10-13 of pollutants. Hydrostatic water will be contaminated with oil and grease and other pollutants and will be unacceptable for discharges to surface waters, as proposed in the DEIS.
- The DEIS contains no detailed discussion of whether this location is an appropriate siting for a septic system for or more 30 people, although that is proposed.

### CUMULATIVE AIR QUALITY IMPACTS

- 10-14 While EPA will issue the air permit to this proposed power plant, there are many air quality impacts that are not regulated by EPA and were not adequately discussed in the DEIS. We believe that these air quality impacts should have been discussed in the DEIS and the BIA and BPA should seek appropriate mitigation for these impacts. This includes the cumulative air impacts, ammonia emissions, including secondary emissions, and some of the types of emissions affecting sensitive lands and Class I areas.

The DEIS should have provided a detailed discussion of the cumulative air quality impacts from the proposed project, in combination with the many proposed, and recently constructed power plants, and other air pollution sources, within a 200 radius of the project, and along with other regional NOx sources. The Plymouth Power EIS, for instance, furnished a much more comprehensive presentation of air emissions and impacts data from that facility, which was only 1/4th the size of Wanapa.

### DEIS FAILED TO MODEL WANAPA'S IMPACTS, IN SHARP CONTRAST TO MANY OTHER RECENT POWER PLANT NEPA REVIEWS

- 10-15 Rather than present an actual analysis of Wanapa's impacts, the DEIS simply offers an inaccurate 1-page summary of Wanapa's purported air quality cumulative impacts, referring to a past BPA air quality study. But all other recent DEISes on Northwest power plants, including Plymouth, and Wallula have stated in so many words that BPA was going to examine potential cumulative regional haze impacts from power plants, on a case-by-case basis. That pledge has been violated by the failure of this DEIS, for which BPA is a cooperating agency, to provide a specific modeling analysis of the Wanapa project.
- The DEIS did not acknowledge this significant cumulative impact from the new generation of power plants in eastern Oregon and Washington, and did not cite previous certifications from the Federal Land Managers that air quality in this vicinity was already significantly degraded.
- For instance the Forest Service's 2/7/02 letter certified that visibility impairment in Northwest Class I areas has already been degraded more than 10%. Because of this certification, new large sources of air pollution must not add more than .4% degradation of the visibility at times when total impacts on visibility exceed 10%, based on FLAG2 criteria. Wanapa will cause a larger degradation to visibility than this .4% threshold. The DEIS should have discuss this potential breach of air quality guidelines. Instead, the DEIS made only a passing reference at 3.4-20 to Wanapa's alleged compliance with a different FLAG2 threshold, that an individual plant not cause more than a 5% extinction by itself. The DEIS presented no supporting data for this abrupt

## Responses to Letter 10

The preferred method of sanitary waste disposal would be through a connection to the City of Umatilla's sanitary wastewater system. However, if this option cannot be implemented, the plant site has been thoroughly evaluated for all geotechnical characteristics including the siting of an on-site septic system. If a septic system would be installed, then the waste from the septic system would be trucked offsite by a licensed contractor for disposal to an approved site.

- 10-14 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.
- 10-15 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

# Letter 10 Continued

# Responses to Letter 10

conclusion, unlike the several other EISes performed on Northwest power plants, which presented, in several cases, entire appendixes to the NEPA document which described the project's individual and cumulative air quality impacts. The DEIS' claimed that Wanapa's individual maximum contribution to haze at any Class I area was a 2.37% increase. This is doubtful, because Plymouth would cause a 2.20% increase in haze at Mt. Hood, and Wanapa is even closer to Mt Hood, and will emit 5 times as much pollution as Plymouth. Therefore it is likely that Wanapa will have more than a 2.37% impact on Mt. Hood

10-15 The DEIS ignored later air quality studies that described the cumulative air quality from these power plants, in subsequent EISes and a DNS. For instance, a review of the Plymouth EIS modeling shows that the Wanapa DEIS' claims are inaccurate about the lack of a cumulative air quality impact. The Wanapa DEIS alleges that there would be either none or 2 exceedances of the 10% threshold, and 2 exceedances of the 5% threshold of impact on visibility, for a total of 4 days of impacts, as a cumulative result of Wanapa and other proposed and actual power plants.

But the Plymouth DEIS analysis, which included modeling of Wanapa's air emissions, showed a total of 31 days, not 2 days, with more than a 5% change to background extinction because of the operation of Wanapa and other power plants, and 2 days when impacts would exceed 10%.

The Plymouth cumulative air impacts analysis, which studied the effects of the operations of Plymouth, Wanapa, and 13 other power plants totaling 7214 Mw, did show plainly adverse impacts, namely 31 days with greater than 5% change to background extinction. Furthermore, the Plymouth plant was shown to contribute more than .4%, which is a "significant change to extinction" on 17 days, and on two days when the total change exceeded 10%. (Table A-6-1, FEIS, p. III-9)

### WANAPA WILL DEGRADE VISIBILITY MORE THAN PLYMOUTH

It is overwhelmingly likely that Wanapa will have an even greater contribution to background extinction, since its air pollution will be roughly 500% more than the Plymouth facility, and it is about the same distance from Mt Hood and the Colombia Gorge, which are the areas showing the more frequent extinction of visibility.

10-16 But this DEIS does not contain an analysis of cumulative air impacts, similar to what was performed for the Plymouth EIS, the Wallula EIS, the Starbuck Initial Study, and even the Goldendale Energy DNS. In other words, this DEIS has failed to include the same type of information that is routinely offered in other power plant EISes, and even provided less information that a recent Declaration of Non-Significance prepared on a power plant. This failing violates NEPA for the following reasons.<sup>4</sup>

### FAILURE TO MODEL CUMULATIVE AIR QUALITY IMPACTS VIOLATES NEPA

10-16 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

# Letter 10 Continued

10-17

An agency's failure to include and analyze information that is important, significant, or essential renders an EIS inadequate - for, without such detailed information, there is no way for the public or the agency to adequately assess the impacts of a proposed action. See *California v. Bergland*, 483, 46. Supp. 465, 495 (E.D. Cal. 1980), *aff'd sub nom, California v. Block*, 690 46.2d 753 (9th Cir. 1982) (by failing to disclose key data in a draft EIS, "the Forest Service effectively undercut the twin goals of environmental statements: informed decision making, and full disclosure").

### **CUMULATIVE IMPACTS ARE SIGNIFICANT AND WANAPA MAY DEGRADE VISIBILITY MORE THAN WALLULA**

These cumulative air quality impacts are clearly significant because the impacts exceed 10% on occasion. It is likely that not only will the Wanapa cumulative impacts be substantially greater than the Plymouth cumulative impacts, but the Wanapa impacts will also be greater than the Wallula Power Project impacts. The Wallula facility is about the same size as Wanapa, but it is more distant from Mt. Hood and The Gorge, and Mt Adams.

As part of the EIS process, a document titled "Newport Wallula Power Project--Contribution to Regional Haze" was prepared. This modeling analysis, which studied the impacts from 13 power plants totaling 5242 Mw, concluded in Table 4 that Wallula would cause a 3.68% increase over background extinction at Mt Hood, a 3.16% increase at the Gorge, 2.13% increase at Mt. Adams, a 2.21% increase at Eagle Cap Wilderness, and smaller increases ranging from .57% to 1.72% at other Class I areas. Wanapa's impact will certainly be more significant.

10-18

The Wallula haze study was performed because BPA "...based on the results of the Regional Air Quality Modeling Study ... now examine(s) potential cumulative regional haze impacts on a case-by-case basis," according to the Haze Study. The Baseline Source Group for the Wallula study included 13 power plants, but did not include Plymouth and Wanapa. That study showed that Wallula contributed more than .4% to extinction on 3 days when the cumulative impact was over 5% in the Gorge, and more than .4% to extinction on 3 days when extinction was over 5% at Mt. Hood, and on one day when extinction was over 10% at Mt. Hood. Since Wanapa is about 30 miles closer to the Gorge and Mt. Hood, it is very likely that Wanapa will have an even more significant adverse impact on these areas than would Wallula.<sup>5</sup>

The DEIS at page 6-4 misrepresented and ignored the results of these recent visibility studies conducted as part of the NEPA reviews of the Wallula and Plymouth power plants, alternately claiming there were either "no" predicted exceedances or "only two" exceedances of the 10% threshold, and only 2 exceedances of the 5% threshold, when in fact these additional studies predicted dozens of exceedances of the 5% threshold. Nor did the DEIS explain the significance of these findings, especially the importance of the 10% exceedances, which is the significance threshold which mandates a additional review and studies of potential mitigation under NEPA.

BPA and EFSEC. Wallula Power Project and Wallula-McNary Transmission Line Project. Final Environmental Impact Statement, August, 2002. (DOE/EIS-0330), especially Table 3.2-12

# Responses to Letter 10

10-17 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

10-18 See response to Comment 2-1 for cumulative effects analysis, including visibility, for Class I areas.

## Letter 10 Continued

10-18 All of the data presented in this section of these comments is based on firing of natural gas only by the power plants that were studied. If oil is fired in some of them, as is permitted, the impacts on haze will be magnified.

### **PRIOR CUMULATIVE IMPACTS MODELING MAY BE UNDERSTATED**

The DEIS-referenced BPA study, and the Plymouth and Wallula EIS discussions of cumulative impacts, all underestimate the existing and impending cumulative impacts. Those modeling exercises did not even list all likely significant projects, neglecting to even list the Umatilla Depot incinerator, the Pacific Rim Ethanol plant at Moses Lake, the Hanford Nuclear Reservation's Waste Treatment Plant and the recently completed expansion of the Boise/Wallula pulp and paper mill, among other developments. These projects will add another 1000 TPY of NOx, and other pollutants to the regional air shed and will certainly contribute to this already-documented cumulative impact on Class I areas, to which Wanapa will undoubtedly also contribute.

10-19 There are thousands of tons of proposed and existing NOx and other pollutant emissions that will increase haze in the vicinity of the project, including the Boardman, Oregon power plant's emissions of 17,762 TPY. A comprehensive emissions inventory should be included in the DEIS.

There is a total of another 6000 TPY of proposed and existing NOx emissions in the vicinity of Wanapa. Few existing Washington sources are counted in this inventory, so this figure is drastically understated. An EIS should be prepared that would include a comprehensive NOx area inventory, and which would model the cumulative air quality impacts on Class I areas, from sources including the sources listed in the endnotes, and additional Washington sources.<sup>2</sup>

### **ADDITIONAL CUMULATIVE IMPACTS FROM VOC AND CO EMISSIONS ON VISIBILITY WERE NOT MODELED**

The additional impacts on visibility from VOC emissions were apparently not modeled in either the earlier BPA studies, including the studies referenced in the Wanapa DEIS. VOCs contribute directly to the secondary formation of visibility-reducing organic aerosols, and CO acts as a weak form of VOCs (10 tons of CO have about the same effect as 1 ton of VOC). For this reason, the BPA's and other studies on the cumulative air impacts from power plants, has underestimated the potential impacts on haze from power plants. The DEIS should have included an additional study that took into account the impacts from these two pollutants.

10-20 The Forest Service criticized the Plymouth DEIS air quality section for failing to study the impacts of VOCs in haze in the Gorge. In response, the preparers factored in the VOC impacts, and those results demonstrated that the Plymouth Plant would affect visibility by more than the .4% FLAG criterion on 17 days, rather than the 14 days previously predicted without taking VOCs into account.

### **OZONE**

Ozone monitoring at Wishram, which is at the east end of the Gorge, has detected near-exceedances of the Ozone standard in the last few years. The DEIS should have modeled the

## Responses to Letter 10

10-19 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

10-20 See response to Comment 2-1 for cumulative effects analysis, including visibility, for Class I areas and response to Comment 2-2 for Ozone impact assessment.

The guidance documents provided by Federal Land Managers and the available assessment tools do not include an evaluation of VOC and CO impacts on visibility modeling. The impacts of VOC are addressed, however, in an ozone impact assessment prepared for the project (see response to Comment 2-2). Additionally, a dispersion modeling analysis of the CO impacts from Wanapa on the area surrounding the facility was conducted and the results were shown to be below modeling significance levels.

## Letter 10 Continued

10-20

potential maximum cumulative impact on the ozone levels, from these new power plants' emissions of ozone precursors, including Wanapa and Plymouth and others, along with the new emissions from the Boise Wallula expansion, the Hanford waste treatment project Pacific Rim ethanol, and other nearby new emissions sources.

### **DEIS IGNORED SECONDARY EMISSIONS IMPACTS**

The DEIS did not study the contributions to air quality impacts from the ammonia emissions from Wanapa. Ammonia (and other nitrogen compounds) catalyze in the air to form "secondary particulate" which harms human health and severely degrades visibility. This is a well-recognized transaction that was discussed at length, for instance, in the recent DEIS on the BP Cogen.

The DEIS should have studied how much ammonia (and other nitrogen compounds) are already in the air in the plant vicinity, because how much ammonia is already there, determines how much damage the new ammonia will cause.

The DEIS should have described the reactions between SO<sub>3</sub>, NH<sub>3</sub>, and NO<sub>2</sub>, which form salts, some of which are emitted to the atmosphere and some of which deposit within the HRSG. Equations can be used to estimate a portion of the secondary PM<sub>10</sub> that is formed from ammonia slip. Secondary PM<sub>10</sub> can be formed by reaction of ammonia with SO<sub>3</sub> and NO<sub>2</sub> emitted by the gas turbines and present in the stack gases and plume as well as additional SO<sub>3</sub> and NO<sub>2</sub> that are present downwind in the atmosphere.

10-21

Additional ammonium nitrate could form from the reaction of NO<sub>2</sub> in the atmosphere with any emitted ammonia. This additional PM<sub>10</sub> may not have been included in the Project's emissions estimates and its impacts. Apparently the formation of secondary PM<sub>10</sub>, including ammonia nitrate, from the proposed project, was not considered in the EPA air permit application, so the combined PM<sub>10</sub> emissions will be more than estimated by the applicant.

The DEIS should have required disclosure of the secondary particulate emissions from this facility, because secondary emissions are not regulated by EPA and are not limited in the EPA air permit. Since this matter is a potentially significant impact, but outside of the later EPA purview, we ask that BIA/BPA require the calculation of these secondary emissions and disclose these impacts and offer mitigation. The other Wallula and Plymouth Haze studies also neglected to consider these ammonia impacts. For instance, the Wallula haze study said that it reviewed the formation of secondary aerosols from conversion of NO<sub>x</sub> and SO<sub>2</sub>. But the study never plainly stated that it added in the conversion of ammonia into its projected impacts.

NEPA requires a complete, comprehensive air quality impact study, including monitoring of existing air quality for a variety of pollutants, including ammonia, at Class I areas and the Gorge Scenic Areas.

Much of the nitrogen oxides from the smokestacks will fall to the earth and onto water bodies nearby as nitric acids and related compounds which damage plant life. NEPA requires a study

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**10-21** The project would emit ammonia from the turbine generator stacks at a maximum concentration of 5 ppm, per the draft air quality permit from the USEPA. This emission rate would result in a maximum annual ambient impact (at the receptor with the highest concentration of ammonia) of 1.99 parts per billion (ppb). Ammonia impacts from Wanapa at other locations are much lower than this amount. This maximum impact can be compared with typical background concentrations of ammonia in grassland areas of 10 ppb.

The primary mechanism for the formation of secondary particulate is the interaction of ammonia with nitrogen and sulfur compounds in the turbine exhaust. Since the secondary particulate by definition is not emitted directly and forms over a period of time based on chemical reactions between constituents in the atmosphere, it is most appropriately included only in far-field analyses such as the Class I area modeling studies. For the project, secondary particulate formation has been addressed in the CALPUFF dispersion modeling conducted for the evaluation of air quality and visibility impacts in the Class I areas and the Columbia River Gorge.

# Letter 10 Continued

10-21 about the impacts on vegetation and water quality from this air pollution.

### ALTERNATIVE POLLUTION CONTROL—ELIMINATE AMMONIA EMISSIONS AND THREAT OF AMMONIA RELEASE

The power plant will store, and emit ammonia for use in their SCR air pollution scrubbing system. This presents dangers to public health and to air quality. SCONOx is an alternative pollution scrubbing system that does not use ammonia. SCONOx should have been comprehensively discussed in the DEIS as an alternative to the proposed project. Study of Alternatives is the heart of NEPA.

Because use of SCONOx would reduce the transport, storage and use of ammonia at the plant site, and would reduce secondary air pollution, discussion of SCONOx as mitigation for the project's impacts should have been part of the DEIS.

### BENEFITS OF SCONOx NEED TO BE CONSIDERED

10-22 The SCR system proposed for use by the Applicants results in a number of environmental problems that are reduced or eliminated with the use of SCONOx. These problems include: (1) hazards from accidental releases of the ammonia used in the SCR system during its transportation and handling; (2) the formation of particulate matter from the oxidation of SO<sub>2</sub> in the SCR catalyst; (3) the formation of particulate matter from reactions between ammonia and SO<sub>2</sub>; (4) generation and disposal of the hazardous SCR catalyst at the end of its useful life; (5) inability to control NOx and CO emissions during startups and shutdowns; (6) increase in NO<sub>2</sub> from the use of dry low NOx combustors, and (7) secondary particulate formed from ammonia emissions

SCONOx would produce greater control of NOx and other pollutants, and eliminate ammonia emissions, and the threat of releases from storage and transport of ammonia. The EPA has recently ruled that SCONOx is considered technically "Available" for NOx control on natural gas fired turbine power plants. The DEIS should have described SCONOx as a method of mitigating the project's potential nuisance impacts from storage, transport and use of ammonia.

### AMMONIA RELATED PM<sub>10</sub> FORMATION ENDANGERS BIOTA

10-23 The majority of the ammonia emissions (slip) from the Wanapa plant will react with NOx to form ammonium nitrate, which is "secondary" PM10. This PM10 can be deposited on surrounding hills, located immediately adjacent to the site, and at more distant areas also. This is an especially significant impact, because the Federal Land Manager's IMPROVE air monitoring project in the Columbia Gorge show that almost 40% of fine particulate in the Gorge vicinity is made up of ammonia compounds; ammonium sulfate and ammonium nitrate. These same ammonia compounds total 50-80% of the visibility-reducing air pollutants in the Gorge vicinity. <sup>6</sup>

Van Harem, Frank. WDOE Visibility Coordinator. "Visibility Monitoring Data Analysis for the CRGNSA, 9/96-8/97." Handout distributed at Columbia River Gorge Commission Meeting, April 13, 1999.

# Responses to Letter 10

10-22 Non-ammonia selective catalytic reduction (referred to as SCONO<sub>x</sub>) is a recently developed technology that uses a potassium carbonate (K<sub>2</sub>CO<sub>3</sub>) catalyst to reduce NO<sub>2</sub> emissions. As noted by the commenter, there is no ammonia injection required for use of the SCONO<sub>x</sub> technology. This technology has been demonstrated on small turbines (up to 50 MW), but has not yet been successfully applied in the field to larger gas turbines. SCONO<sub>x</sub> has not been used to date with large (F-class) gas turbines.

As evidenced in the literature, one company, Alstrom, conducted tests with medium-sized gas turbines and concluded that SCONO<sub>x</sub> can be *scaled up* for use in large gas turbines without actually performing such test and evaluation of results with large size gas turbines. This manufacturer discontinued its manufacturing of large gas turbines due the failure of their performance SCONO<sub>x</sub> has not been used to date with large (F-class) gas turbines and a scale up of the equipment without any test and the manufacturer guarantee of its performance would lead to failure and make the project unfinanceable.

Wanapa must use the best available technology for pollution controls. During the PSD permit application process, SCONO<sub>x</sub> was analyzed and evaluated carefully to determine its application as the best available technologies for the NO<sub>x</sub> control. In addition to the lack of a successful large turbine application of SCONO<sub>x</sub>, it did not meet the economics criterion established for the application of the best available technology. The results of that evaluation demonstrated that SCONO<sub>x</sub> does not provide cost-effective control of NO<sub>x</sub> and that SCONO<sub>x</sub> would introduce a high risk for lack of proper performance in removing this pollutant (NO<sub>x</sub>). SCONO<sub>x</sub> cannot be guaranteed to perform effectively with the state of the art gas turbine technologies including the F-technology gas turbines used in large size plants such as Wanapa. The Selective Catalytic Reduction (SCR) technology proposed for the new turbines will reduce NO<sub>x</sub> emissions as well or better than SCONO<sub>x</sub>.

10-23 See responses to Comments 10-21 and 2-1.

## Letter 10 Continued

10-23 Impacts to soils is an additional concern. Although the Applicant modeled the impact of the Project on these soils and concluded that the increase in nitrogen would be small, the Applicant's analysis apparently failed to include the contribution of ammonia emissions to secondary PM10, most of which is ammonium nitrate. This additional PM-10 of nitrogen compounds from conversion of ammonia would increase the Project's reported contribution to soil nitrogen. The impact of this additional ammonium nitrate has not been evaluated and must be to fully evaluate the environmental impacts of the project.

Ammonia emissions are discussed further in the following comments. These types of reactions, are a potentially significant impact that should be discussed in the DEIS.

### **PM<sub>10</sub> FORMATION CAUSES VISIBILITY REDUCTION**

10-24 The fact that ammonia/PM reactions actually occur and cause visibility impacts is well documented in the technical literature. A noted atmospheric textbook, for example, contains this vivid description of the problem ( Pitts and Pitts, 1999,<sup>7</sup> p. 284):

"The formation of ammonium nitrate has some interesting implications for visibility reduction. In the Los Angeles air basin, for example, the major NO<sub>x</sub> sources are at the western, upwind end of the air basin. Approximately 40 miles east in the vicinity of the city of Chino, there is a large agricultural area that has significant emissions of ammonia...under typical meteorological conditions, air is carried inland during the day, with NO<sub>x</sub> being oxidized to HNO<sub>3</sub> as the air mass moves downwind. When it reaches the agricultural area, the HNO<sub>3</sub> reacts with gaseous NH<sub>3</sub> to form ammonium nitrate..the particles formed by such gas-to-particle conversion processes are in the size range where they scatter light efficiently, giving the appearance of a very hazy or smoggy atmosphere even though other manifestations of smog such as ozone levels may not be highly elevated."

### **AMMONIA**

10-25 The proposed power plant will use, handle, store and transport large amounts of ammonia. Ammonia is listed on the EPA's list of extremely hazardous chemicals. The State of Louisiana has recently tightened regulations governing handling of ammonia.

The use and storage of hazardous chemicals such as ammonia should be minimized. Nonetheless, the Wanapa plant proposes to transport, use and store large quantities of ammonia on site.

The DEIS should have described and addressed the possible consequences of transporting, piping, storing and emitting hundreds of thousands of pounds of ammonia at this facility every year.

<sup>7</sup> Barbara J. Finlayson-Pitts and James N. Pitts, Jr., Chemistry of the Upper and Lower Atmosphere: Theory, Experiments, and DEISs, Academic Press, San Diego, 1999.

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10-24 See responses to Comments 10-21 and 2-1.

10-25 Transport, storage and use of all chemicals, including ammonia, would be in accordance with all applicable laws, regulations and ordinances. These chemicals are currently used in all generating plants operating in the region. The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals.

A detailed analysis of the incidents of "Hypothetical Ammonia Releases," which is the most likely chemical release accident to occur at the facility with the potential for off-site impacts was included in the Environmental Impact Statement for the proposed Wallula Power Plant Project. Due to the proximity of the Wallula plant to the project area, and the similarity of their environments, the results of that analysis is applicable to the Wanapa project.<sup>1</sup>

<sup>1</sup>Web address for Wallula Final EIS.

# Letter 10 Continued

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10-25 There are two issues regarding ammonia. The first issue is the constant release of ammonia from this facility under normal operating conditions. The second issue is the risk of ammonia releases from the storage and transportation of this hazardous chemical.

### AMMONIA EMISSIONS UNDER NORMAL OPERATING CONDITIONS

10-26 Ammonia may be emitted from the project at 5 parts per million (ppm). Other ammonia sources in this area which could contribute to an ambient ammonia level, including other power plants, fertilizer production and use, and animal feed lot and processing facilities. The DEIS should have discussed controls for ammonia, and additional modeling that accounts for potential ambient levels of ammonia that would cumulatively join with the proposed facility's emissions.

### RISKS OF AMMONIA RELEASES

The plant will store hundreds of thousand of pounds of ammonia on site, and millions of pounds of ammonia will be transported to this site every year. But the DEIS does not describe the likelihood of a transportation accident, the numbers of truck trips bearing ammonia, the possible size of any ammonia releases from a truck accident, the neighborhoods and businesses that would be threatened by a release, or the risk and effects of a release from the ammonia tanks at the power plant, including the risk and effect of a tank failure.

The DEIS should discuss this troubling subject, of large scale ammonia releases from transport and storage of large amounts of ammonia on the site. Ammonia releases are fairly common. A study submitted to the Congress revealed there have been over 1000 ammonia releases over one nine year period, which caused 801 injuries, 9 deaths, and 61 evacuations of over 22,000 people.<sup>8</sup> For this reason we urge the DEIS to discuss ammonia hazards from storage and transport, and any requirements to comply with the CAA amendments governing storage reporting, and transport of ammonia and other hazardous materials.

10-27

For instance, there was a release of ammonia in August, 2001 from the Pratt & Whitney power plant in East Hartford, Conn., that caused the shutdown of nearby streets for five hours and led to the evacuation of 20 people. For this reason the commentors urge that the DEIS should have discuss ammonia hazards, and the ability to respond, from storage and transport releases, and any requirements to comply with the CAA amendments governing storage and transport of ammonia and other hazardous materials.

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

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Report to Congress Section 112(r) (10) Clean Air Act as Amended. EPA 550-r-93-002. December, 1993.

10-26 See the responses to Comments 10-21 and 2-1.

10-27 The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals. As the commenter accurately points out, most of the hazards and consequences listed by the commenter are associated with use of *anhydrous* ammonia and not aqueous Ammonia. A spill of aqueous ammonia would behave as any liquid spill and the emergency team would immediately responded to minimize potential impacts to environmental resources or the local population. The transportation, storage, and handling of the aqueous Ammonia would be in accordance with the applicable and governing laws, regulations, codes and standards. The use of SCONO<sub>x</sub> is discussed in response to Comment 10-22 above.

The facility would be subject to the USEPA's Accidental Release Prevention Program (ARPP) regulations for ammonia (40 CFR Part 68). The ARPP would require the facility to implement the following procedures to minimize the potential for accidental releases.

- Develop a quality control program to ensure that all equipment used in the ammonia system is designed according to industry standards.
- Develop standard operating procedures for operation, inspection, and maintenance of the ammonia system.
- Conduct annual worker training for the ammonia system.
- Conduct a Process Hazard Analysis for the ammonia system to identify equipment or operations with a potential for accidental release, then mitigate those identified problems.
- Develop an Emergency Response Plan for the ammonia system, describing alarms and procedures to repair leaking equipment.
- Submit a Risk Management Plan to the USEPA, predicting the downwind impacts caused by hypothetical accidental releases of ammonia.
- Conduct periodic audits of the accidental release prevention program.

## Letter 10 Continued

The DEIS evaluation should have studied alternatives on the types of ammonia to be stored and used, for instance the use of urea instead of ammonia, and alternative transport methods for ammonia. While the DEIS suggests that aqueous rather than anhydrous ammonia may be used, urea would be even safer.

The DEIS' evaluation should also study the potential impacts of large scale ammonia releases from different site locations, and the release impacts from different types of transport accidents. The alternative of siting the plant farther from populated areas and from the State Highway, to reduce the public's exposure from ammonia releases, should have been discussed.

### SOME RECENT RELEASES OF AMMONIA (not a complete list)

evacuations	injuries	location	gallons released
36	1300	Minot, ND	about 140,000
280	4	Washington, IND	Not provided
1000	65	Quebec	" "
1500	0	Morro Bay, CA	300
100-300	n/a	Wauwatosa, Wi	n/a
100	n/a	Columbus, IA	na

10-27

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

The US Chemical Safety and Hazard Investigation Board web site contains examples of recent releases, of ammonia, and the often tragic consequences. Many of those incidents described releases of anhydrous ammonia. But aqueous ammonia, which may be used at the plant, still presents a risk of release.

Discussion of use of alternative forms of ammonia, or no ammonia at all through use of a SNOx pollution reduction system, should have been required as part of a complete DEIS. This proposed development should have described in the DEIS how it will mitigate its potential ammonia-related impacts to the maximum extent possible. Wanapa has not demonstrated that it has mitigated the potential impacts of its use of ammonia to the maximum extent possible, for instance by use of alternative forms of ammonia, namely urea pellets.

### PM-10 AIR EMISSIONS

The subject of the health and environmental effects of PM-10 should be presented in depth in the DEIS. While EPA regulates PM-10 emissions, EPA will ignore PM-10 emissions that do not exceed the legal standards. But many recent studies identify adverse impacts from concentrations of PM-10 that are below legal limits. Since PM-10 concentration at those levels are not part of

10-28

## Responses to Letter 10

10-28 See response to Comment 6-2.

The project would have an impact on ambient concentrations of PM<sub>10</sub>. Based on dispersion modeling of the facility, it has been determined that the project's impacts would be below modeling significance thresholds at most locations in the vicinity. These significance thresholds are set at levels representing 2 percent of the annual National Ambient Air Quality Standard (NAAQS) for PM<sub>10</sub>, and 3.3 percent of the 24-hour NAAQS for PM<sub>10</sub>. The locations where an impact is modeled at levels higher than the modeling significance thresholds are shown in the figures provided with the response to Comment 6-2 for the two different averaging periods. The maximum impact from Wanapa at any location and time is 8.73 µg/m<sup>3</sup> on an annual average (17 percent of the annual NAAQS), and 28.52 µg/m<sup>3</sup> on a 24-hour average (19 percent of the 24-hour NAAQS).

The USEPA, as required by the Clean Air Act, sets the relevant NAAQS at levels that protect public health with an adequate margin of safety. The standards are scientifically based and undergo review at least every ten years, and include a public involvement process and review by the Clean Air Scientific Advisory Committee. Pollutants in the ambient air at levels below the NAAQS may still result in some health impacts in certain portions of the population.

A refined, or more detailed analysis has been conducted at locations where Wanapa shows a significant impact in the significance modeling analysis. This refined analysis, provided in the PSD application to the USEPA, demonstrates that the impacts from Wanapa, when added to the impacts from other nearby sources and background PM<sub>10</sub> concentrations, would remain below the NAAQS and PSD Increments even at the locations with the highest localized impact.

## Letter 10 Continued

EPA's regulatory authority, the DEIS should have reviewed this issue.

Many recently published studies demonstrate that PM-10 and TSP are far more harmful than previously considered. It appears from these studies that any increase in PM-10 and TSP levels will cause an adverse health impact.

In one study of the Seattle area, days of high particulate concentrations in the air were correlated with increased hospital visits for asthma. In another series of similar studies, days of high particulate concentrations were correlated with days of high death rates in Santa Clara, California, Steubenville, Ohio, Birmingham, Alabama, and Philadelphia, Pennsylvania, among seven separate studies on this topic. Particulate have been recently, convincingly implicated in harm to pulmonary function.

PM-10 will be emitted by the power plant smokestacks. Construction will also create about 1 ton of TSP per acre of disturbance per month, and over 100 acres will be disturbed. Construction equipment, truck and car traffic related to this project, both in the construction and operation stage, will be an additional PM-10 and TSP source.

10-28 But the DEIS, in its discussion of this topic at 3.4-15, did not even attempt to quantify these potentially significant PM-10 emissions, even though the plant's PM-10 emissions are already exceeding the significance thresholds. surface disturbance activity by itself, can create about 1 ton per acre of PM emissions per month, and the tailpipe PM emissions from the dozens of pieces of heavy equipment during this two year construction job will add to this already significant tonnage.

Some important conclusions from these studies is that harmful health effects occur even when particulate concentrations are below the legal limits, there is no apparent particulate threshold for adverse health effects, and that harmful health effects are apparently caused by very minor increase in particulate concentrations. This means that even though the Project will not cause violations of the PM legal limits it could still cause significant health impacts.

Again, this means that increases in PM-10 concentrations will not be limited by EPA, because the legal limits will not be violated. However, these many recent studies suggest there are adverse impacts from PM-10 increases that are below the legal limits. Since EPA will not regulate these increases, we ask Forest Service to require the applicant to address mitigation for its PM-10 increases, perhaps by assisting in reductions of PM-10 emissions from other sources, such as road dust. There are important environmental impacts from PM-10 emissions, also.

### **ADDITIONAL AGENCIES SHOULD HAVE BEEN INCLUDED AS COOPERATING AGENCIES**

10-29 NEPA urges federal agencies to seek a cooperative posture with state agencies, in its section titled Elimination of duplication with State and local authorities (40 CFR 1506.2 (b):

" (Federal) Agencies will cooperate with State and local agencies to the fullest extent

## Responses to Letter 10

10-29 The scope of the project is unique in that a portion of the project is exempt from EFSC (the plant site) because of the location of the project on tribal land. The BIA's obligation under NEPA is to address the entire project so that impacts of the components are disclosed. However, consistent with many other projects, authorizations must also be obtained from other federal as well as state and local agencies for the project to proceed. The BIA, the BPA, and the Reclamation Records of Decision would document that these other approvals must be obtained prior to the beginning of construction. The project, although not directly under EFSC jurisdiction, would still comply and exceed EFSC environmental trust fund requirements over the life of the facility.

As NEPA requires, all federal, state and tribal agencies and interested and affected publics have been kept informed of the process. Direct solicitation for comments from the agencies involved including the State has been made.

## Letter 10 Continued

possible to avoid duplication between NEPA and State and local requirements."

A joint NEPA document, with local agencies as cooperating agencies, could better study the individual and cumulative impacts, and appropriate mitigation measures, in a single comprehensive document. This type of review would provide a more useful analysis of these impacts and meaningful mitigation measures.

10-29

EPA will issue air and water permits. EFSC will issue a Site Certificate. The Department of Reclamation has oversight over the reservoir. The Army Corps will issue wetlands fill permits. All of these permitting agencies should cooperate and conduct an efficient environmental review. Having BIA and BPA go it alone with a separate EIS will not allow for a comprehensive scrutiny of the project that would protect the environment and allow for adequate mitigation.

In contrast, the Washington State permitting agencies acted as cooperating agencies with the BPA in the NEPA project review for several power plants, including the Wallula, Plymouth, Starbuck, and Mercer Ranch projects. Specifically, the DEIS' failure to involve the state water resources agencies in this process, may have been a factor in the DEIS' neglect of the true impact of a large water withdrawal from the Columbia River. These State agencies have been grappling for years with this very issue and the acknowledgment that the River may be oversubscribed.

### **PIPELINE IMPACTS NOT COMPLETELY DISCUSSED**

The proposed power plant and its support facilities include a ten mile natural gas pipeline. There are many other natural gas pipelines around the country, and in the Northwest, that were constructed according to federal standards. But in the Northwest alone, natural gas pipelines have blown up five times within the last five years. The DEIS should describe these potential impacts and additional mitigation measures to make sure this problem does not reoccur.

10-30

For instance, A gas pipeline near Bonneville Dam, recently exploded and burned on February 27, 1999. The roar from the explosion was heard for two miles. The 300 foot high fireball was so huge it was visible in Madras, even though the explosion was miles away. Route 14 in Washington was closed to protect the public. Press accounts state that earth movement from recent heavy rains may have been responsible for the pipeline break. The fire destroyed a resort hotel that was under construction and a nearby dwelling.

Near Kalama, Washington, a natural gas pipeline broke in February, 1997. Again, a 300 foot high fireball blazed into the sky. And just one day earlier, the same pipeline exploded and burned near Bellingham, Washington.

In March of 1995, that same pipeline had ruptured and blew up near Castle Rock, Washington. After that 1995 explosion, the company removed soil from 300 feet of the pipeline, to relieve any stress. But less than two years later, it blew up again. Again, soil movement was the cause of the pipeline breakage, according to published accounts.

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## Responses to Letter 10

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Natural gas pipeline accidents can result in evacuation of local population, property damage, and personal injury. The potential for pipeline accidents is determined by a number of events, including human activity near the pipeline, corrosion rates, incident history, operational regime, adequacy of maintenance, inspection and surveillance programs, and length of pipe. The impacts of an incident also are governed by a number of factors, especially the diameter of the pipe, operating pressure, and proximity of humans to the pipeline.

Most of the northwest and national incidents described in the comment occurred on main natural gas transmission lines that are usually 24 to 36 inches in diameter, transport large volumes of gas at high pressure (typically 2,500 psi) and have long distance routes, often through highly populated areas. As a consequence, the potential for a more severe incident is greater than for smaller pipelines located in less developed areas. The proposed gas pipeline for the Wanapa project would be approximately ten miles long, 24 inches in diameter, and would operate at a maximum pressure of 600 to 800 psi. The pipeline route would be partially co-located with existing utilities (other pipelines, roads) throughout its length. New right-of-way sections would be mostly located across farmland and rangeland. Agricultural land that would be crossed would remain in agricultural use. In combination, these factors reduce the likelihood of a severe incident along the Wanapa pipeline.

Based on historical data, the potential for an accidental release along any particular portion of the pipeline is statistically extremely low. The statistics presented in **Table 3.11-2** were derived from the U.S. Department of Transportation's (USDOT) incident database, a database that summarizes pipeline incident data throughout the U.S. and is continually updated. As mentioned above, the potential for a release is further reduced by the fact that the pipeline would be located in sparsely populated areas and in existing rights-of-way. The recent enactment of the Pipeline Integrity Management Rule for natural gas pipelines also should result in the further reduction in pipeline incidents, due to increased pipeline inspections and mandatory repair criteria.

The pipeline would be constructed in accordance with federal USDOT regulations, which mandates safety standards for pipeline design and construction. These standards are designed to minimize the potential for pipeline failure and accidental release. Construction of the pipeline is in accordance with these standards, the location of the pipeline route, and the lower operating pressure combine to minimize the potential for an accidental release that could impact environmental resources or the local population.

Natural gas pipelines in the U.S. are the safest mode for transporting natural gas. Statistics from 1989 to 2000 indicate that on average, almost 3, 24, and 200 times more people die each year in barge accidents, railroad accidents, and truck accidents, respectively, than die in all pipeline related incidents (natural gas and petroleum products). On a comparative basis, the entire natural gas infrastructure in the region of the facility is much safer than other forms of transportation to which residents of the area are exposed.<sup>1</sup>

<sup>1</sup>Peter F. Guerrero, Director, Physical Infrastructure Issues, United States General Accounting Office, Testimony Before the Subcommittee on Energy and Air Quality, Committee on Energy and Commerce, House of Representatives, *Pipeline Safety Status of Improving Oversight of the Pipeline Industry*, Tuesday, March 19, 2002, GAO-02-517T.

## Responses to Letter 10

### 10-30 Cont'd

The commenter states, "...in the Northwest alone natural gas pipelines have blown up five times within the last five years." and the number of incidents: "...February 1999, two incidents in February 1997, March 1995, and two 2003 episodes."

Construction of what is today the interstate natural gas system began in the early 1900s. The federal standards concerning this system have evolved with the industry. The failures cited in the Northwest are associated with one type of pipeline installed almost 50 years ago. The project pipeline would comply with all applicable regulations and modern safety standards for new pipeline construction.

A reliable analysis shows that the newer and recently constructed pipelines which were installed under the stringent safety standards, are operating trouble free. For example, it is worthy of notice that all natural gas pipeline episodes in the Northwest, (except the 1999 incident) occurred on the same 46-year-old 26-inch mainline owned by Northwest Pipeline.<sup>1</sup> Further, the same aging issue also caused the 1999 failure.<sup>2</sup> In contrast, the slightly newer Gas Transmission Northwest (formerly PGT) pipeline system has had no significant pipeline accidents in its 40 years of operation.<sup>3</sup>

Comparison of the safety of a new 10-mile pipeline built with the latest in technology and under the most stringent modern standards of safety to anomalies in a system with relatively few failures across its 180,000 miles<sup>4</sup> of aging interstate pipeline may yield inaccurate results. The developers of the project would require the construction of the project pipeline to be in accordance with the most recent applicable regulations, laws, codes and standards developed to insure safety and avoid the incidents that happened to the old pipelines which were built without such laws regulations, codes and standards and safeguards in place.

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<sup>1</sup> Pipeline Safety Section History, Washington Utilities and Transportation Commission Pipeline Safety Section Natural Gas Leak History, <http://www.wutc.wa.gov>

<sup>2</sup> *Seattle Times*, December 20, 2003.

<sup>3</sup> [www.gtn.negt.com/safety/our\\_role.htm](http://www.gtn.negt.com/safety/our_role.htm)

<sup>4</sup> [www.ingaa.org](http://www.ingaa.org)

## Responses to Letter 10

Mitigating Differences in the Wanapa Pipeline. The project's gas pipeline is only 10 miles in length compared to over 1,500 miles for Northwest or 612 miles for NGT. The project pipeline runs through fairly level open terrain, unlike its interstate counterparts that run through remote areas and rugged terrain with little or no access. Therefore, unlike the enormous, interstate pipelines, the project pipeline's entire length would be inspected. This results in the ability of the project pipeline to internally inspected 100 percent of its 10-mile system as compared to Northwest's 17 percent<sup>5</sup> and NGT 12 percent<sup>6</sup> and to hydrotest a much higher percentage of its 10-mile system, as compared to Northwest's 11 percent<sup>7</sup> and NGT's 1 percent.

From the start of construction, the project's 10-mile gas pipeline would use the latest technologies in metal, coating, corrosion protection, welding methodology and other construction techniques. The improvements in technology since construction of the pipelines cited as dangers in the Northwest (e.g., modern fusion bond epoxy coatings versus coal tar coating or modern strong carbon steel engineered to meet standards set by the American Petroleum Institute versus cast iron)<sup>9</sup> should greatly mitigate the dangers presented in the EIS comments.

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<sup>5</sup> **Washington State Pipeline Inspection and Integrity Review Summary of Preliminary Finding (Table: System Integrity Test)**, [www.ops.dot.gov/bellingham1/WAstatefinalsummary.htm](http://www.ops.dot.gov/bellingham1/WAstatefinalsummary.htm)

<sup>6</sup> Id.

<sup>7</sup> Id.

<sup>8</sup> Id.

<sup>9</sup> [www.naturalgas.org](http://www.naturalgas.org)

From the perspective of the impacts on public health and the response needs of surrounding communities, the addition of 10 miles of new natural gas pipeline to the hundreds of miles of older pipelines already existing around these communities, would have no noticeable incremental impact on public health or to the region's preparedness requirements.

The commenter cites one example of a construction backhoe that caused a leak in a Northwest Natural Gas pipeline requiring the evacuation of seventy-five people. Once again, the addition of 10 miles to the hundreds of miles of pipeline the region would have no noticeable incremental impact. Further, the Northwest Natural Gas system is a distribution system, and as such, normally would be a much greater risk of construction damage than the Wanapa system. Northwest Natural must mark and monitor 12,000 miles<sup>1</sup> of gas distribution systems, while Wanapa must mark and monitor only 10 miles. New procedures introduced under the Pipeline Safety Improvement Act of 2002 should help mitigate the risks of third-party damage.

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<sup>1</sup> [www.nng.com](http://www.nng.com).

## Letter 10 Continued

The Northwest Pipeline through western Washington had two large scale explosions and fires caused by pipeline failure during 2003, mostly recently within the last few months.

There have been a total of 12 large natural gas pipeline explosions, since 1978 in the Northwest, including other ruptures in Stevenson, Washington, La Grande, Oregon, and Montpelier, Idaho.

A few years ago, a construction backhoe caused a leak in a Northwest Natural Gas pipeline recently in Rainier. Seventy five people were evacuated. There is other evidence regarding the potential impact on public health and safety from natural gas pipelines.

During 2000, at least six people were killed in a natural gas pipeline explosion near Carlsbad, New Mexico, and another six were injured. Landslides in Ventura county, California ruptured several natural gas pipelines in February, 1998, again after heavy rain. Between 1965 and 1986, there have been 250 pipeline failures in the United States as a result of stress corrosion cracking, caused by a combination of water, soil types, and gas temperature within the pipelines.

At least twenty-one people were killed since 1995 from natural gas pipeline accidents.<sup>9</sup> A Transwestern Pipeline natural gas pipeline exploded on August 20, 1994 in New Mexico, near the Rio Grande River, damaging a bridge. An October, 1994 explosion of a pipeline in Torrance, California, injured 30. A December, 1989 pipeline rupture caused by a farmer's plow, triggered the evacuation of 600 people in Butler, Illinois.

In March, 1994, a natural gas pipeline exploded in New Jersey, killing and injuring scores of people and creating a 30 foot deep crater and a fire that destroyed eight buildings and severely damaged six more buildings. A Chemical Safety and Hazard Investigation Board data base search revealed 18 major gas pipeline explosions since June, 1998 in the United States

All of these pipelines were constructed to federal standards, and monitored by federal agencies. The DEIS should have explained, how with all the current federally required mitigation measures and careful engineering, pipelines can still blow up, and how the proposed pipeline lateral can be made safer.

The DEIS did claim in Table 3.10-2 there would likely be only .08 accidents over 30 years of service on the project's 10 mile pipeline, based on "historical statistics." There was not a single reference provided in the DEIS to buttress this assertion and there was no source presented for these statistics. The Northwest Pipeline through western Washington and Oregon has suffered from almost 30 significant releases of gas, including large explosions and fires, since 1994, according to published accounts. At that incident rate, (1 incident per year per 100 miles of pipeline) it would be probable that the Wanapa lateral will suffer at least three large gas releases during thirty years of operation.

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New York Times, 4/9/97, p. 1.

## Responses to Letter 10

Beginning in 2000, the federal government began enlisting the states in cooperative effort to improve pipeline safety by allowing more states to oversee a broader range of interstate pipeline safety activities. State pipeline safety inspectors are an invaluable resource for the Office of Pipeline Safety (OPS) because they are familiar with pipeline safety issues unique to their states.<sup>1</sup>

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<sup>1</sup>Guerrero, *Id.*

On December 17, 2002, the Pipeline Safety Improvement Act of 2002<sup>1</sup> was signed into law. Congress crafted this legislation as an amendment to the 1994 Pipeline Safety Law, largely in response to pipeline ruptures in Carlsbad, New Mexico and Bellingham, Washington. The act applies to, among other facilities, interstate and intrastate natural pipelines and local distribution companies.

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<sup>1</sup>Pipeline Safety Improvement Act of 2002, 49 U.S.C.A. § 60101 et. seq.

This Act:

- Institutes mandatory inspections with periodic re-inspections of all U.S. oil;
- Permits the USDOT to order corrective action of a pipeline facility, including physical inspection, testing, repair, or replacement;
- Requires implementation of integrity management programs by the end of this year;
- Bolsters enforcement provisions by allowing for civil penalties for safety violations in an amount between \$25,000 and \$100,000 for each violation, and in an amount between \$500,000 and \$1,000,000 for a related series of violations;
- Directs USDOT to encourage operators to adopt and implement certain best practices for notification of leaks and ruptures ("one-call" systems);
- Directs the National Institute of Standards and Technology and the Departments of Transportation and Energy to work with an advisory committee to develop a plan that addresses critical research and development needs to ensure pipeline safety, thus ensuring continued progress in pipeline safety technology and knowledge; and
- Established public education programs to advise municipalities, schools and other entities on the use of the one-call notification system, possible hazards from unintended releases from a pipeline facility, what to do in the event of a release, and so forth. Considering the quantity of natural gas and other pipelines already existing in the area, the project would cooperatively merge its procedures into those already established.

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<sup>1</sup>Armgardt, *President Bush Signs Pipeline Safety Improvement Act of 2002 Into Law*, [www.articles.corporate.findlaw.com](http://www.articles.corporate.findlaw.com)

# Letter 10 Continued

10-30 These events could cause loss of life and property. Pipeline explosions are significant impacts. Additional protective measures, and the types of emergency responses, such as fire protection and health care emergency treatment, that must be provided to these explosions and fires and their victims, should be discussed and implemented. The problems that can cause this type of explosion should have been carefully explained at length in the DEIS.

**ABILITY OF EMERGENCY SERVICES TO RESPOND TO PIPELINE RELEASE WAS NOT DISCUSSED**

10-31 Even if the possibility of a pipeline release is slight, the ability of local agencies to respond to a remote natural gas pipeline explosion should also have been discussed, especially since the Wanapa plant and its associated pipeline lateral are in isolated areas and it will take time for emergency services to respond.

10-31 The DEIS should have described the likely scenario of service incidents on the pipeline serving the power plant, perhaps by describing several of the recent explosions on this pipeline and at similar pipelines. The types of agency responses that would be required, and the adequacy of the local agencies to respond, should also be discussed.

Descriptions of a range of several recent incidents should be provided, so that readers and persons submitting comments can be appraised of the possible impacts of service incidents. This is appropriate because service incidents can be expected over the life span for the pipeline lateral.

**POWER PLANT ACCIDENTS**

The DEIS failed to discuss the potential for accidents and explosions at this proposed facility. On occasion, similar power plants have experienced fires and explosions that have damaged property and killed people.

10-32 Just five days ago, on October 8<sup>th</sup>, 2002, a massive explosion at the Florida Power & Light natural gas fired Palm Beach plant rocked two counties, followed by a hydrogen-fed fire. The explosion shook houses and rattled windows, and was as loud as a sonic boom. In January, 2002, there was a hydrogen explosion and fire at the natural gas fired BC Hydro plant in Port Moody, BC.

10-32 Less than two weeks ago, on October 1, 2002, there was a nine-alarm fire at the Sithe power plant in Boston, that began in a hydrogen generator. The fire and explosion caused \$10 million in property damage.

Hydrogen will be used and stored at Wanapa Power. But this potential impact from explosives and fires from caused or fed by hydrogen, and the ability of local emergency services to respond, was not adequately discussed in the DEIS.

At the Sithe blaze, 180 firefighters had to respond. The natural gas fired turbine at the Doswell power plant in Virginia recently suffered a catastrophic fire and explosion. It took 75 fire fighters to quell the resulting fire. The DEIS should have discussed what will happen if hundreds

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10-31 The facility and the pipeline are within ten miles of the towns of Umatilla and Hermiston. The project would make the necessary arrangement with both of these cities' fire and emergency response teams to make fire and emergency services available for response to an incident. The pipeline route does not have any sections that have poor accessibility (e.g., "remotely" located) – the entire length (10 miles) could be readily accessed by emergency equipment from nearby roads and along the rights-of-way in the event of a release or incident.

Transportation of flammable gas would be done in a safe, efficient and effective manner. As with any responsible operator, a proper emergency response plan developed in coordination with local communities would be in place. Given the presence of other laterals to power generation facilities almost identical to the project and the hundreds of miles existing pipeline running through the area, no significant changes should be required. The project would integrate itself into the existing emergency response system.

10-32 Power plants are considered safer than most major industrial facilities. While fire and explosion accidents occasionally have occurred at power plants, these plants are designed and operated according to strict building, engineering, and operating codes and standards to minimize the potential for serious incidents. The plant would hire the most skillful operators and would conduct safety trainings to minimize human error in causing accidents. Staff of the Wanapa Energy Center would include a risk management and compliance officer.

*Risk of Fire and Explosion.* The proposed project would use natural gas and distillate fuel oil for equipment combustion firing, lubricating oil for equipment operation, and mineral oil for transformer operation. The natural gas fuel would be used for powering the four combustion gas turbines, duct firing in the four HRSGs, and building space heating

Natural gas would pose a fire and/or explosion risk because of its flammability. Although natural gas would be used in significant quantities, it would not be stored onsite. Risk of fire and/or explosion would be reduced through adherence to applicable laws, ordinances, regulations and standards, and the implementation of effective safety management practices in all areas of the generation plant. Fire prevention and suppression measures that would be included within key areas are listed in the paragraphs that follow.

## Responses to Letter 10

### 10-32 Cont'd

The generation plant fire protection system would include:

- A dedicated firewater storage supply in the service water storage tank, sized in accordance with National Fire Protection Association (NFPA) 850 to provide 2 hours of protection from the on-site, worst-case single fire (NFPA 850, Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations);
- An electric jockey pump and electric motor-driven main fire pump to increase the water pressure in the power plant fire mains to the level required to serve all water fire fighting systems;
- A diesel engine-driven fire pump to pressurize the fire loop, if the power supply to the main fire pump fails;
- A dedicated underground firewater loop piping system with fire hydrants and the fixed suppression systems supplied from the firewater loop;
- Fixed fire suppression systems installed at determined fire risk areas such as transformers, turbine lubrication oil equipment, and the cooling towers;
- Sprinkler systems installed in the fire pump building as required by NFPA; and
- Hand held fire extinguishers of the appropriate size and rating located in accordance with NFPA 850 throughout the facility.

The combustion gas turbine-generator units would be equipped with

- Gas detectors that alarm when combustible gas in the combustion gas turbine unit enclosures reaches approximately 25 percent of the lower explosive limit;
- Automatic shutdown controllers for the natural gas supply trip valves if the combustion gas turbine concentration reaches 60 percent of the lower explosive limit;
- Vent fans in the combustion gas turbine enclosures to ventilate any collected gas; and
- Thermal fire detectors and smoke detectors located throughout the combustion gas turbine generator enclosures; actuating one sensor would provide a high temperature alarm on the combustion gas turbine control panel; actuating a second sensor would trip the combustion gas turbine, turn off ventilation, close the ventilation openings, and automatically release gaseous carbon dioxide to quench the fire.

## Responses to Letter 10

The steam turbine-generator units would be supplied with

- Bearing preaction water spray systems that would provide fire spray water to the steam turbine-generator bearings in case of a fire; and
- Fire detectors and an automatic water-deluge water spray system for the steam turbine-generator lube oil areas.
- Each major transformer would be supplied with
- A deluge spray system in case of a fire;
- Concrete foundations with crushed rock and curbs to contain a fire; and Block walls as fire breaks between transformers.

The cooling towers would be supplied with a dry-pipe water spray system in case of a fire.

To control overpressure of the natural gas piping systems downstream of the valve station, relief valves would be installed with discharge to a safe location. The released natural gas should rapidly dissipate into the air. A system alarm would sound in the control room. No natural gas would be released to the atmosphere from upstream of the control valve station.

A comprehensive communication plan would be developed to coordinate responses to fire and explosion emergencies at the project site. This comprehensive plan would be part of the fire prevention plan during operation. At least 90 days before the start of operation, a meeting would be held that would include the plant operations and maintenance contractor, the developer, and Fire District to coordinate all operational response requirements and communication details.

In addition to the safety systems, risk to the public and private property would be further reduced by the Wanapa project's location within a sparsely populated area. No residential or other occupied structures are located immediately adjacent to the project facility. The closest residential structure, which is the Two Rivers Correctional Facility, is approximately 1 mile from the plant. Given the sparse population in the vicinity of the plant, the requirements for plant design, its operation under applicable safety codes, and the presence of safety systems on site, the potential risk to environmental resources or the local population is low.

Hazardous materials that would be used during the operation of the proposed project are listed in Section 2.3.1.3. Hazardous materials such as paints and lubricants would be stored in the fenced area to be located in a safe area. Any hazardous waste materials generated during construction or operation would be periodically removed by and transferred to a licensed hazardous waste disposal area by a waste disposal contractor.

## Letter 10 Continued

of fire fighters are needed to respond to a problem at the isolated, rural Wanapa location. There was no discussion of whether nearby fire departments even possess the types of modern, sophisticated equipment, such as foam applicators that can administer foam from above the fire, that will be needed to fight a fire that is fed by large quantities of natural gas, diesel, lube oil, hydrogen, ammonia and other toxic materials.

There were other explosions and fires at power plants recently. An explosion and fire rocked the Black Hills Power and Light power plant in Wyoming, in June, 2002. A back-up generator blew up and caused a "major" fire at the Allegheny Energy plant in Pennsylvania, in July, 2002. Firefighters from at least five communities had to respond to the blaze. A pressure relief valve activation at the Mirant plant in Zeeland, Michigan in August, 2002 caused diversion of traffic, to avoid released gasses.. Three workers were killed at a fire in the O'Brien Newark, New Jersey Cogeneration power plant fire recently. At least 20 other fires have been recorded over the last 10 years at power plants, causing another death and \$417 million in property damage. The most severe fires often involved the release of lube oil, which ignited. Lube oil will likely be stored at Wanapa, although it was not discussed in the DEIS.<sup>10</sup>

10-32

Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil. The dangers from use and storage of these materials was not discussed in the DEIS. These kinds of serious accidents, and the ability of local emergency response units to respond, are significant impacts that should have been discussed in the DEIS.

There were 272 to 557 equipment failures and accidents per year at power boilers and pressure vessels since 1992, causing almost 200 injuries and 29 deaths, and another 145 to 387 failures, and another 270 injuries and 54 deaths, from unfired pressure vessels, according to Power Magazine, Jan-Feb., 2001, p 53.

Because Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil, some of these hundreds of annual accidents at power plants cause injuries, and losses of life and property beyond the power plant boundaries, and require a large response of emergency personnel, as previously described. The dangers from the use and storage of these materials, and the ability of local fire departments to respond, was not discussed in the DEIS. These kinds of serious accidents are significant impacts that should be discussed in an EIS.

### **CUMULATIVE EFFECTS OF INCREASED USAGE OF NATURAL GAS**

10-33

The EIS did not discuss the adverse impacts from the increased exploration and processing of gas in Canada, in part sparked by the development of these this project. Discussions of Canadian impacts is mandated by Presidential findings during the Carter Administration regarding the scope of NEPA-covered projects. A description of Cross-border impacts are also appropriate,

<sup>10</sup>Most of these narratives are from the Chemical Safety Board's web site.

## Responses to Letter 10

10-33 Although the commenter cites no authority for the assertion of a Presidential mandate, research indicates that the reference is likely Executive Order 12114 passed by President Carter on January 4, 1979. This Executive Order only sets forth a requirement for federal agencies to establish procedures to address impacts of certain actions. Section 3.1 explicitly limits the Order to establishing these federal agency procedures and states that the Order does not create any cause of action. The use of the Order to expand its intent to include the Wanapa project is incorrect.

However, even if the Order were applicable, Wanapa would not be required to address impacts of increased production. Of the actions requiring agency procedures set forth in the Order, the only provision potentially applicable in this situation would be Section 2-3 (b) "major Federal actions significantly affecting the environment of a foreign nation *not participating with the United States and not otherwise involved in the action* [emphasis added];"

The Wanapa project utilizes existing gas transportation capacity; as such, no environmental decisions are required to be discussed for pipelines in Canada. The commenter implies that the project's presence in an existing, fully developed, export-import market fully approved by both the Canadian and U.S. governments of 9.5 billion cubic feet of gas per day (9,500,000 decatherms (Dth)/ day) would create significant environmental issues. Even if this implication was true, the Executive Order applies only when the foreign nation is not involved. Canadian natural gas exploration and production is heavily regulated at both the federal and provincial levels. Exports and import to and from the U.S. are governmentally approved and an integral part of the energy system of both countries. The Canadian government is fully engaged in all aspects of this market from exploration through export. Therefore, even if the increased market for natural gas had significant environmental impacts, this Executive Order would not apply because the Canadian government fully participates in the action and would have addressed any environmental concerns presented in Canada.

Finally, Section 2-5 (i) explicitly exempts "actions not having a significant effect on the environment outside the United States as determined by the agency." The Wanapa Energy Center would be an extremely minute participant in the U.S.-Canadian gas market. Even assuming all the natural gas consumed by the project was imported from Canada, the project's maximum consumption of 250,000 Dth/day represents less than 1 percent of Canada's 17,400,000 Dth/day production.<sup>1</sup> Nonetheless, as stated earlier, Canada has a well developed scheme to protect the environment from potential issues created by increased production. The project does not create any significant environmental impacts outside the U.S., and therefore, falls within the exclusion of Section 2-5 of the Order.

<sup>1</sup> [http://www.capp.ca/default.asp?V\\_DOC\\_ID=690](http://www.capp.ca/default.asp?V_DOC_ID=690)  
(2002 production numbers from the Canadian Association of Petroleum Producers).

## Letter 10 Continued

10-33 considering that the Canada Energy Board requires assessments of impacts in the United States, when evaluating proposals for Canadian pipelines.

### **COOLING TOWER DRIFT**

The cooling towers are PM-10 and TSP sources, to the degree which the cooling water contain solids, which are emitted from the cooling tower exhaust as particulate. A large power plant using water high in solids content can emit tons per year of PM-10 and TSP. Cooling tower emissions contain salts, metals, water treatment chemicals, and other contaminants, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

10-34 An air quality expert examined the cooling tower emissions from Goldendale Energy, a 250 MW plant, and provided calculations to determine the amount of “drift” that will be produced. When those calculations are scaled to the Wanapa plant, then a potential 100 ton/year of particulate, including salts would be emitted. The DEIS calculates far lower figures, but does not provide the basis for their calculations. The DEIS should have provided those calculations for double-checking, and should examine the potential for higher emissions than what is predicted in its own best case modeling.

Even with the lower predicted figures, measurable adverse impacts are predicted from cooling tower drift and salts deposition. Switching to full air cooling would also reduce PM and TSP emissions, since a cooling tower will no longer be needed.

The DEIS should have provided data, such as the TDS of the circulating water, the percentage of cooling tower drift, the circulating rate of the water, and the numbers of cycles of circulation, so their figures on the cooling tower drift can be verified. The DEIS should have calculated the emissions of metals, water treatment chemicals, and other contaminants that are present in the cooling water, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

### **LEGIONNAIRES DISEASE**

10-35 The DEIS did not provide a table of materials stored on site that listed biocides known to be effective against Legionnaires Disease. This disease breeds in moist, warm climates, including cooling towers such as those to be used by the plant. It has been spread through the discharge of steam from cooling towers. In March, 2001, for instance, two Ford employees died in Ohio after exposure to Legionnaires’ Disease, spread by the facility’s industrial cooling towers. Legionnaires Disease organisms have also been found in the CEGB power plant’s cooling tower water, near Stafford, England. Since it is not apparent that Wanapa plans to use appropriate chemical treatment of its cooling tower system to stifle development of the relevant bacteria, there is a threat of Legionnaires Disease from this facility. This should be discussed in a revised DEIS.

### **POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)**

10-36 The alternative of burying power lines associated with this project should be discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of

## Responses to Letter 10

10-34 The cooling tower would be equipped with drift eliminators with highest commercially available drift elimination efficiency (0.0005 percent of circulating water flow). In addition, to reduce the PM<sub>10</sub> contribution of the drift, the air permit would include TDS limits in the cooling tower (see response to Comment 10-12). This TDS limit, to reduce PM<sub>10</sub> would make it necessary to operate the tower at lower cycles of concentration. The PM<sub>10</sub> emission from the cooling tower would be within the limits of the air permit. The USEPA checks the PM<sub>10</sub> calculations in order to establish limits. Air-cooled plant considerations are discussed in response to Comment 10-3.

10-35 The microbes that cause Legionnaire’s disease may occur in heating, ventilating and air conditioning (HVAC) systems that incorporate moist or water-cooled sections and components. These HVAC systems can have cooling towers associated with them; however, the towers are usually utilized for non-contact cooling, where the cooling tower water is not in direct contact with the HVAC components that move air (the cooling water does not directly contact the air). The projects’ cooling towers would be treated with sodium hypochlorite, which is a highly effective microbiocide. Uncontrolled microbiological growth in a cooling system can cause serious interference with heat exchange and associated operating equipment so it must be controlled. The project’s cooling system would be operated to meet all applicable laws and regulations and the cooling water could not be utilized for HVAC systems.

10-36 The project would transmit its power across the 500-kV lines. Burial of the 500-kV lines are not feasible. Reasonable circumstances for constructing transmission lines under ground would be marine crossings or dense urban areas. The additional equipment required, such as insulating fluids, high-pressure pumps, and temperature-monitoring equipment, would significantly increase costs of construction. In addition, the relative difficulty of maintaining and repairing underground transmission facilities make an underground line less reliable.

The commenter suggests that the new line would create an avian collision hazard. However, studies have found that such problems occur only in very specific, localized situations where birds in flight must frequently cross a power line within their daily use area. (Edison Electric Institute, 1994. Mitigating Bird Collisions With Power Lines: The State of the Art in 1994. Washington, D.C.)

The commenter also suggests the line would cause significant visual impact and increase human exposure to electromagnetic fields; however, the line would be located on mostly unpopulated land. Finally, underground construction would cause substantially more ground disturbance than overhead construction. Underground construction is not a reasonable alternative for a 500-kV line because it offers no environmental advantages to overhead construction in this situation, would be significantly more expensive, and would be less reliable with potential for harm and loss of life.

## Letter 10 Continued

## Responses to Letter 10

these projects, and may reduce EMF exposure, and the impacts to avian species which collide with above ground power lines.. Bird Mortality from the new power lines and EMF exposure are other potentially significant impacts that should be discussed in the DEIS, and power line burial should be discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas.

### **POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)**

The alternative of burying power lines associated with this project should have been discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of this project, and may reduce EMF exposure, and would reduce the impacts to avian species which collide with above ground power lines.. Bird mortality from the new power lines is a significant impact that should have been discussed in the DEIS, and power line burial should have been discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas, including the 2.5 acres of potentially impacted wetlands.

10-36

While the DEIS at 3.3-23 does recommend avoidance of partitioning foraging and resting habitat, the proposed new lines' Alternative 1 borders the nearby Wanaket Wildlife area. Other alternative routes pass over 4 wetlands (p. 3.3-23). The DEIS states at 3.3-10 that "Waterfowl also represent an important biological component of the Wanaket Wildlife Area," and that bird counts have totaled as many as 162,610 during 1986-7. Even if habitats are not partitioned, the proximity of new transmission lines to areas, including open waters, that are heavily used by many birds, is a significant adverse impact that may constitute a taking of habitat.

While Transmission Line avoidance of habitat is important, in all cases the transmission lines will be relatively near the Wildlife Area. But the DEIS did not discuss burial of the transmission lines as an alternative project design. In one study of 2,000,000 examples of non hunting related waterfowl mortality, about half 3000 non-hunting deaths were due to striking wires. The study's author recommended that wires in areas of high waterfowl use be buried.<sup>11</sup>

Another study of high voltage lines crossing a slag pit near the Kincaid Power Plant, found that 200 of 400 waterfowl were killed by colliding with these lines. Mallards and Coots constituted 62% of the killed fowl.<sup>12</sup>

A third study concluded that the increased construction of power plants and associated

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<sup>11</sup>Cornwell, CW. 1986 Needless Duck Deaths. Conservation Catalyst 2(4):15-18.

<sup>12</sup>Sanderson, GC and Anderson, WL. 1981. Waterfowl Studies at Lake Sangchris, 1973-77. Illinois Natural History Survey Bulletin 32 (article 4): 656-689.

## Letter 10 Continued

transmission lines may pose a significant hazard to birds in the plants' vicinity.<sup>13</sup>

There are many examples of burial of high voltage power lines of considerable length. Some example of actual and proposed burials of large pipeline include the 345 kV line that would be buried for 1700 feet to go under the Namekagon River near Trego, Wisconsin.

Sierra Pacific is burying a 14,000 volt line for about 2000 feet near downtown (Lake) Tahoe City, according to the company's June 9, 1999 press release.

Sierra Pacific is also burying a 120,000 volt (120kV) line for about 1700 feet near Carson City, Nevada, according to the company's April 19, 1999 press release.

Sierra Pacific's longest underground line is 2.6 miles, according to their Media Relations department.

10-36 The California Public Utility Commission's consultants, Aspen Environmental, prepared a study of an all-underground route for a 230 kV line near Pleasanton, California (Pleasanton Weekly. "Objectors, Proponents speak out on PG&E Power Line Plan." 2/16/01)

The Sumas II Power Plant has proposed a buried 230 kV line for 1.4 miles, in Abbotsford, Canada, as part of its trans-border proposal. (Canada Newswire. "NSB Receives a Revised DEIS from Sumas Energy II to Construct an International Power Line." October 2000)

The Sargent & Lundy engineering firm's website lists several underground transmission lines for which they provided engineering, including a 115/138-kV line, a 230 kV line in Washington Dc, a 1800 foot 115-kV line in Baltimore, five 230-kV lines in China, two 69 kV lines in Iowa, a 1300 foot 138-kV line in Tennessee, and a one-mile, 138-kV line in Salt Lake City.

This litany of buried transmission lines indicates that this is a practicable, feasible and economic alternative design for this portion of the project. It would reduce the impact on avian species, and would reduce the visual and land use impact of the project. For this reason a burial alternative, should have been presented in the DEIS.

### **SOLID WASTES**

10-37 Water treatment for a large power plant can generate as much as 15 tons per month of wastes, called filter cake. There are other waste streams, including spent catalyst, which is a hazardous waste. Catalyst wastes could be avoided by used of the SCONOX scrubber system. These impacts

<sup>13</sup>Krapu, GL, 1974. Avian Mortality from collisions with overhead wires in North Dakota. Prairie Naturalist 6(1): 1-6. Abstracts of these three, and additional studies were found at [http://www.energy.ca.gov/reports/avian\\_bibliography.html](http://www.energy.ca.gov/reports/avian_bibliography.html)

## Responses to Letter 10

10-37 The primary source of solid waste from a natural gas-fired power plant with SCR air emission control systems are spent catalyst from the SCR and sludge generated by the water treatment system. Other wastes are generated in small quantities and include office waste from plant personnel and solvents, paint and used oils from plant maintenance.

The largest volume of waste would be from the water treatment system. The raw water treatment system at the project would be a vendor-supplied system that would generate sludge from the treatment of water. These wastes are not considered hazardous waste and would be transported and disposed of off-site by a licensed contractor. Maintenance wastes, some of which are hazardous, would be removed and disposed of off-site by a licensed contractor. Spent catalyst from the SCR, which is removed periodically, also is a hazardous waste and would be handled by a licensed contractor. Since none of these wastes would be disposed of on-site and licensed contractors would handle all of these wastes, there would be minimal risk of these wastes being released at the facility.

See response to Comment 10-22 related to the issue of SCONOX.

# Letter 10 Continued

10-37 were never described adequately in the DEIS. The materials contained in this wastes, its destiny, and its impacts on landfill capacity should all have been discussed.

**STORM WATER RUNOFF AND SPILLS**

The project will include the creation of several acres of impervious surfaces. This will cause the generation of millions of gallons of storm water runoff. This water will be tainted with oil, grease, and other contaminants present on the site and its parking lot and roof. The DEIS should have describe adequately the quality of this runoff, its destiny, and its potential impacts on ground and surface waters. The DEIS should have described to what degree it will treat the storm water before it is allowed to infiltrate into the ground water.

10-38 While an oil/water separator will be present, the DEIS should have identified the degree to which storm water will be channelized through the separator. The DEIS should describe the fate of wastes that are separated from the storm water. The DEIS should describe the project's compliance with typical State Storm Water Management rules. For instance, use of oil/water separators is actually criticized as having limited application, in Washington's storm water guidance manuals. The DEIS should describe why a separator was appropriate for this location, or why alternative methods of storm water pollution were not studied.

A list of all miscellaneous cleaners, lubricants and gases with quantities should have been available in the DEIS. Some glaring items missing are Acetylene, Argon, Radioactive materials for X-ray equipment, Gasoline, Carbon Tetrachloride, Hydrogen, Propane, Ethylene, Dynamite, Halon, etc. A list of all materials used on previous construction and procedures to handle them must be submitted.

**GLOBAL WARMING**

10-39 The DEIS did not inform its reviewers that the plant will emit millions of tons of carbon dioxide, a known and potent greenhouse gas. This failure to provide this basic information is a NEPA violation. Instead the DEIS provides a misleading discussion suggesting that the project was "efficient." The DEIS also inferred that the project would possibly meet State of Oregon standards for CO2 emissions, without informing reviewers that even if it met Oregon standards, Wanapa would still be required to pay tens of millions of dollar in CO2 mitigation fees. The DEIS then bluntly terminates its one-paragraph discussion of this important topic by stating "No mitigation measures are proposed."

This in not a legally adequate discussion. The DEIS is obligated to discuss the magnitude of Wanapa's CO2 emissions, and the types of mitigation payments that would be legally required by Oregon if this plant were subject to State regulations. If no mitigation is forthcoming, at least reviewers would be aware that the Wanapa plant is going to escape millions of dollars in CO2 mitigation payments, that all other thermal power plants in Oregon, and future plants in Washington will have to pay.

# Responses to Letter 10

10-38 Accumulated storm water from the site would be routed to a detention pond. The primary contaminant would be suspended solids with minor amounts of oils and other materials. The storm water pond would be lined so the potential for contamination of groundwater would be negligible.

The risk of oil contamination of storm water is greatest in the power block area where the transformers and turbine lube oil tanks are located. All storm water from these and other such areas would be routed through an oil/water separator to remove and collect any oil. Water from the oil/water separator would flow to the retention pond. The oil/water separator would be regularly inspected for proper operation and a licensed contractor would remove the collected oil on a periodic basis.

The project would obtain a Storm Water Discharge Permit from the USEPA Region X and would develop and implement a Storm Water Pollution Prevention Plan. This plan and implemented Best Management Practices (BMPs) would meet all requirements of the permit.

Miscellaneous solvents, cleaners and lubricants that would be used for maintenance activities at the plant would usually be stored and used in small consumer quantities such as those purchased in hardware stores. Large quantities of these materials would not be used at the project facility.

10-39 See response to Comment 10-3.

Emissions of carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide from the project have been estimated at the rates shown in Table [redacted] below when operating at maximum firing rates.

**Table [redacted]  
Greenhouse Gas Emissions from Wanapa Energy Center**

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP) 100-year	Annual Emissions, CO <sub>2</sub> Equivalent (1,000 tons)
CO <sub>2</sub>	4,594.6	1	4,594.6
Methane	0.28	21	5.8
N <sub>2</sub> O	0.0055	310	1.7
<b>Total</b>			<b>4,602.2</b>

No mitigation measures for CO<sub>2</sub> are required under NEPA. However, the project intends to mitigate for CO<sub>2</sub> emissions through the Wanapa Environmental Foundation.

# Letter 10 Continued

## SOCIO-ECONOMIC IMPACTS DURING CONSTRUCTION

The developer has not made any commitment to maximize local hire of its construction work force. This means that potentially one-half or more of the construction workers, or as many as 500 workers, given the experience in the Calpine/Hermiston job, could be imported into the area at the job's peak. Many studies show that on a lengthy job of this nature, more than half of the married workers will bring their families. This means that hundreds of children could be added to local schools for up to a year or more. There will be impacts on housing, jails, libraries, health care, and other social services.

The DEIS should describe the potential socio-economic impacts during the construction phase of a power plant or large industrial project, as revealed in public and private studies of the power plant in Boron, California, and the USS-Posco steel mill in Pittsburg, California. The Wyoming Industrial Siting Council considers that if only 60% of imported construction workers bring their families, that is a low "moving in" rate. The DEIS says at 3.9-14 that only 30% of the construction workers will be hired locally. If 60% of the construction workers bring their families, there will be hundreds of additional children in local schools for the two year life of the project. This and other socio-economic impacts, and meaningful mitigation measures, should have been described in the DEIS.

The DEIS at 6.3.5 admits that there will be traffic impacts; but these estimated nature of these impacts, including the potential of over 100s of Cars every day during peak construction periods was never discussed, nor were any mitigation measures presented.

While the DEIS at 6.3.6 states that state noise standards will be met at the property line, there are additional standards to be met at the nearest receptor. The DEIS does not describe the noise impacts at the nearest residences or noise receptors.

The DEIS claims that the project will contribute taxes to the local and regional economy. The project will not be obligated to pay any property taxes, and testimony presented at prior public meetings described situations under which the burdens on local services caused by the power plant, especially during construction, will not be mitigated by future government revenues.

# Responses to Letter 10

10-40 See Response to Comment 6-6

Construction traffic would be coordinated with local authorities so that traffic congestion would be avoided. Due to the plant's proposed location in a remote site, there would likely be no traffic impacts in and around the project facility.

Based on the information from the nearby Coyote Springs project constructor, which was built by the Washington Group in 1996 and 1997, the following information is available regarding labor figures. On the Coyote Springs project, over 60 to 65 percent of the labor work force commuted daily either locally or from the Tri Cities area (which is considered local). The remaining 35 to 40 percent stayed in motels or RV parks. The average stay for a worker was less than 1 year. Washington Group indicates that very few of the craft or construction personnel brought their families with them, resulting in no impact to the local schools. These families did, however, contribute to local businesses by frequenting local restaurants, convenience stores, hotels, motels, trailer and RV parks.

The project would comply with the State noise standards. In addition to meeting state noise standards, the plant would not impact existing ambient noise levels locally. The nearest noise receptors are more than 1 mile away at the Two Rivers Correctional Facility and a residence over 2.5 miles away; these receptors are not expected to be susceptible to any plant noise.

Regarding the property tax issue, see response to Comment 11-2.

10-40

# Letter 10 Continued

## ENDNOTES

### 1. Sources for Copper Discussion

April, 2002. Parametrix. Biological Review. Tri-County Model 4(d) Rule. Response Proposal. Prepared for Tri-county Salmon Conservation Coalition.

Stratus Consulting. Lipton, J. Hansan, JA. Welsh, PG. Cacela, D. Critical Body Residues for Metals: Evaluation of Relationship between Copper Accumulation and Effects in Rainbow and Bull Trout. Boulder, Colorado.

Materna, Elizabeth. Temperature Interaction. EPA Region X Water Quality Criteria Guidance Development Project.

EPA. Gold Book; Water Quality Criteria, 1986.

Baldigo, Barry and Baudanza, Thomas. Copper Avoidance and Mortality of Juvenile Trout in Tests with Copper Sulfate Treated Water. USGS. Report 99-4237.

Golding, S. Ecology publication 95-305. Metro Renton Wastewater Treatment Plant Class II.

Dietrich, Andrea. Evaluation of Pollutants in Source and Process Waters used in Shellfish Aquaculture. Virginia Tech.

### 2. SOME NEARBY NOX SOURCES

#### BOARDMAN POWER PLANT

17762 TPY (Tons per year) of NOX.

This is a coal fired power plant near Boardman, Oregon.

#### COYOTE SPRINGS POWER PLANT

This plant, near Hermiston, Oregon, has one turbine emitting 287 TPY of NOX. It was permitted in 1995. Another turbine was permitted in 1995, which is under construction. It will emit another 287 TPY.

#### HERMISTON POWER PARTNERS

This plant was permitted for 270 TPY of NOX in 1995. Later permit amendments bumped them to 314 TPY. It is now operating.

#### US GENERATING

This 500 MW power plant, shows 270 TPY of NOX emissions. It was permitted about five years ago.

#### PIPELINE COMPRESSOR STATIONS

The Northwest Pipeline, and the Pacific Gas Transmission natural gas pipelines, both run through the Columbia River area. Both pipelines utilize several compressors/pumps that are large NOX sources, including the Roosevelt compressor station in Klickitat County.

#### PG&E

#### NOX EMISSIONS COMPRESSOR INVENTORY

Ione: 621 TPY.

# Letter 10 Continued

Kent	261 TPY
Starbuck	177 TPY
Wallula	85 TPY

#### NORTHWEST PIPELINE

Their pipeline runs along the Columbia from Clark County, Washington (Washougal) to Hermiston, and branches northeast towards Spokane, and southeast towards Boise. Oregon Department of Environmental Quality (DEQ) files states this pipeline has compressor stations every 50 miles. An Oregon DEQ emissions inventory did list the following nearby compressor stations:

Stanfield	15.2 TPY of NOX.
Meacham	585 TPY, according to their permit renewal in 1996.
Rosalia	Recent 85 TPY increase

There are other compressor stations along the pipeline route in Washington on the Northwest Pipeline, with large NOX emissions, including the Washougal and Klickitat/Roosevelt stations.

The NW pipeline compressor in Baker County, Oregon, increased its NOX emissions in 1997 from 131 to 257 TPY.

Compressor station known total: 2100 TPY of NOX, not counting Baker City, Plymouth, or Roosevelt. These compressor stations were not apparently included in the cumulative air impacts analysis.

#### OTHER EXISTING NOX SOURCES IN NORTHEAST OREGON AND SOUTHEAST WASHINGTON

<u>NAME</u>	<u>NOX IN TPY</u>
UW/Pullman	250
Boise/Wallula	recent 658 tpy increase-1700 ton total
Kinzua	153
Boise	>385 La Grande
Boise	>250 Elgin
Co-Gen II	187 Prairie BPA and Benton County
	900-odd total

Both of the smaller Boise facilities were significant NOX sources, that conducted several expansions and increased their NOX emissions, since 1984 to the present. Their actual NOX emissions are not known, since they did not get the required permits from DEQ prior to these expansions. The EPA has a Notice of Violation pending against both facilities. These two facilities did not submit to the PSD process--yet.

#### UNDER 100 TPY-NOX

Joseph Lumber	36	Joseph
Dee Forest	53	Hood River
Grant Western	38	John Day
Simplot	97	Hermiston
Lamb-Weston	70	Hermiston
	300-odd total	

#### PROPOSED NEW POWER PLANTS AND NOX SOURCES

##### WALLULA

This 1300 MW project will emit about 434 ton/year of NOX and 1400 ton/year of total criteria air pollutants, and another 380 ton/year of ammonia, which could contribute to another 1600 ton/year of secondary particulate formation.

# Letter 10 Continued

## GOLDENDALE SMELTER CLIFFS PROJECT

The BPA recently issued a ROD for a new turbine at this facility, which will emit about 100 TPY of NOx. This facility, and the Boise/Wallula Mill expansion was left off of the cumulative impact-air quality list.

## GOLDENDALE ENERGY

This 249 MW power plant will come on line in 2004, producing about 77 TPY of NOx.

## AVISTA/LONGVIEW

This 300 MW plant will be across the street from the Weyerhaeuser mill. It will emit about 100 ton/year of NOx, and another 200 ton/year of other pollutants. Its construction was recently halted but it is about 70% complete.

## UMATILLA AND MORROW GENERATING

These proposed plants by PG&E National Energy will generate about 1000 MW and produce about 500 TPY of NOx. The Umatilla plant is fully permitted.

## PACIFIC RIM ETHANOL

This proposed alcohol refinery near Moses Lake will emit about 100 TPY of NOx and about 350 TPY of total criteria pollutants. It was not cited in the cumulative air impact analysis.

# Letter 10 Exhibits

## EXHIBITS

### ARTICLE ABOUT DIAMOND'S OTHER AIR COOLED POWER PLANT

"MITSUBISHI SUBSIDIARY SEEKS TO BUILD NEVADA PLANT"

### ARTICLES ABOUT OVERDRAFTS ON THE COLUMBIA RIVER

"Columbia River Vision"

"Locke Announces Statewide Drought Emergency"

"Is Columbia Tapped Out?"

"Group Seeks Columbia Water-rights Limits"

"Washington Farmers Lease Water Rights to Help Fish"

### ARTICLE ABOUT RECENT PIPELINE EXPLOSIONS

"NATURAL GAS PIPELINE SHUT DOWN"

### DOCUMENTATION OF NEW/EXPANDED NEARBY POLLUTION/NOX SOURCES

Hanford Waste Treatment Plant

Rosalia Compressor

Boise Cascade/Wallula

### DOCUMENTATION OF OZONE READINGS NEAR VIOLATION LEVELS

1-hr. readings of .079, .078, and 8-hr. readings of .062, .076, compared to new 8-hr. standard of .085.

Mitsubishi Subsidiary Seeks to Build Nevada Plant

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### **Mitsubishi Subsidiary Seeks to Build Nevada Plant**

LCG, Mar. 4, 2002--Diamond Generating, a subsidiary of Mitsubishi, the Japanese conglomerate, hopes to build a gas-fired generating plant near Goodsprings, Nevada, starting in early 2003.

While many US-based power developers have scaled back the number of projects they are actively pursuing due to a drop in power prices and lender concerns over some power producers' high levels of debt, Bill Davis, director of development of Diamond Generating, said, "there is still an increase in electric load requirements (in the western United States)." The plant would be named Ivanpah Energy Center, and would have a capacity of 500 megawatts.

The plant, which would be dry-cooled, would utilize 30 to 50 acre feet of water for cooling annually, from partially treated gray water generated by the Southern Desert Correctional Center in Jean. A typical dry-cooled plant requires 250 to 300 acre feet. The land on which Ivanpah would be built would be leased from the Bureau of Land Management.

A series of public meetings are scheduled concerning the plant. If the plant receives all required approvals, Diamond hopes to start operations by March 2005.

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# Letter 10 Exhibits

The Center for Environmental Law & Policy's

## Columbia River Vision

Strong and Sustainable Management of Washington's Waters

November 2000



CELP's Columbia River Vision

Page 1



### The Water Withdrawal & Diversion Dilemma

The Washington State Department of Ecology (Ecology) just came perilously close to permitting a large water diversion that would have allowed the Cities of Kennewick, Pasco, Richland, and West Richland (the "Quad Cities") the right to take 178 cubic feet per second (cfs), or 115 million gallons of water per day (mgd), out of the mainstem of the Columbia River. The river is already over-appropriated for consumptive water use, and not enough water remains instream to meet fish-critical needs. While federal agencies, the State of Idaho, and individual family farmers and water users have been working to augment flows, the State of Washington sits ready to permit further water use—another 100+ applications for new water from the Columbia are pending before Ecology right now.

With commitments made to salmon restoration in this state, Washington needs to reconsider its position on allowing further consumptive diversions and withdrawals from the Columbia River, and close the Columbia to further appropriation. The State should be working collaboratively with other entities in assessing the flow needs of listed salmon species, and in trying to augment flows to ensure that these needs are met. This state can ensure water for both people and fish if it works more creatively around commitments to restore and preserve the resources under its stewardship.

### CELP's Concern<sup>1</sup>

Many of Washington's streams, rivers, and aquifers are currently over-appropriated and lack sufficient flows to meet the needs of fish. The Columbia River represents just one of these over-appropriated river systems. The Center for Environmental Law & Policy (CELP) became concerned with the potential for decreased Columbia River flows in 1997, when the Washington State legislature lifted a permitting moratorium and paved the way for the State to permit further water use from the Columbia.

CELP is particularly concerned with the precedent the State will be setting by proceeding with water permitting on the Columbia. At a time when the federal government, tribes, scientists,

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<sup>1</sup>CELP questioned Ecology's authority to permit additional withdrawals from the Columbia in relation to the Quad Cities application. Along with pointing out concerns over the cumulative effects of water withdrawals and diversions, CELP also pointed out that the application itself was technically invalid. Ecology had actually cancelled the application years earlier when the Quad Cities failed to live up to the terms of their preliminary permit. Despite the fact that numerous substantive reasons existed for Ecology to deny this application, the agency hung its hat on this

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environmentalists and others agree that salmon recovery must include increased flows for fish, the State of Washington sits ready to unilaterally spawn a significant snag in coordinated Columbia River salmon recovery efforts. In doing so, the State will be ignoring its responsibilities as a steward of a public resource, as well as a governmental entity that must ensure its actions do not further the decline of threatened and endangered species.

CELP believes the State can be a "better actor" by halting any further Columbia diversions and withdrawals, and implementing more creative solutions to find water for both people and fish. CELP's Columbia River Vision: Strong and Sustainable Management of Washington's Waters, including an overview of the state of the Columbia River and the State's water permitting role, follows:

## The Columbia River's Decline

*All Columbia River Basin salmon stocks are in a state of perilous decline, especially Upper Columbia spring chinook and steelhead throughout its range. Without substantial intervention, there is a greater than 50:50 chance that most of these stocks will be extinct by the next century.*<sup>2</sup>

## The Flow Dilemma

The development and operation of the numerous dams on the Columbia and Snake Rivers historically has greatly impacted salmon survival:

*Storage dams have eliminated spawning and rearing habitat and have altered the natural hydrograph of the Snake and Columbia rivers, decreasing spring and summer flows and increasing fall and winter flows. Power operations cause fluctuation in flow levels and river elevations, affecting fish movement through reservoirs and riparian ecology and stranding fish in shallow areas. The eight dams in the migration corridor of the Snake and Columbia rivers alter smolt and adult migrations. Smolts experience a high level of mortality passing through the dams. The dams also have converted the once-swift river into a series of slow-moving reservoirs, slowing the smolt's journey to the ocean and creating habitat for predators. Water velocities throughout the migration corridor are now far more dependent on volume runoff than before the development of the mainstem reservoirs.*<sup>3</sup>

technicality and announced formally in June of this year it lacked authority to act on it. The Quad Cities subsequently filed suit against Ecology over this decision. At nearly the same time, the Columbia-Snake Irrigators' Association, a consortium of agri-business interests, sent Ecology a Notice of Intent to Sue, insisting that Ecology begin processing water permit applications on the John Day and McNary pools within 60 days. Certainly, this issue is a hotbed of competing political views. This White Paper advocates for sound management and legal principles to win out over such political pressures, to ensure strong and sustainable management of the State's waters.

<sup>2</sup>Conservation of Columbia Basin Fish: Draft Basin-Wide Salmon Recovery Strategy, vol. 1 at pg. 15 (Federal Caucus, 2000) (hereinafter "Federal Conservation Strategy").

<sup>3</sup>Draft Biological Opinion on Operation of the Federal Columbia River Power System at § 5.3.1 (NMFS, 2000) (hereinafter "2000 BiOP").

It seems the federal government is unwilling to commit to dam removal at this time, opting instead for improvements in dam operations with the aim of achieving a more normative river flow. Whether the dams are ultimately removed or remain in place, successful salmon recovery depends upon a sufficient quantity of water being available to flow down the Columbia and Snake Rivers. Water quantity problems affect water temperatures, smolt travel time, and sedimentation rates—key parameters that greatly impact salmon survival and recovery.<sup>4</sup>

As the agency responsible for salmon recovery in the Columbia and Snake Basins, the National Marine Fisheries Service (NMFS) released a Biological Opinion in 1995 on operation of the federal hydropower system.<sup>5</sup> In its '95 BiOP, NMFS concluded that proposed operation of the federal hydropower system was likely to jeopardize the continued existence of listed salmon, and identified immediate, intermediate, and long-term actions to avoid jeopardy.<sup>6</sup> The first immediate action involved increasing flows in the Columbia and Snake Rivers, with the goal of meeting target flows that NMFS developed.<sup>7</sup> The target flows that apply for the Snake and Columbia Rivers are as follows:<sup>8</sup>

	Lower Granite Dam (Snake River)	McNary Dam (Columbia River)
SPRING	85,000-100,000 cfs	220,000-260,000 cfs
SUMMER	50,000-55,000 cfs	200,000 cfs

Flow augmentation is already occurring—the U.S. Bureau of Reclamation (BOR) in conjunction with the State of Idaho and individual water users in Idaho have augmented flows by 427,000 acre-feet per year every year since 1993.<sup>9</sup> However, despite efforts to meet targeted levels, the above salmon flow objectives have not been met over significant periods of time. In fact, under current river operating conditions "sufficient flows cannot generally be maintained to protect migrating juvenile salmon."<sup>10</sup> Even in record-breaking water years, flows have continued to fall far short of targeted levels: Despite record high snowfall and resulting runoff volumes in 1997, for example, weekly flow objectives were not achieved in either the Snake or Columbia Rivers during most or all of August.<sup>11</sup>

<sup>4</sup>*Id.* at § 5.3.2.

<sup>5</sup>Biological Opinion on Operation of the Federal Columbia River Hydropower System and Juvenile Transportation System in 1995 and Future Years (NMFS, 1995) (hereinafter "'95 BiOP").

<sup>6</sup>*Id.*

<sup>7</sup>*Id.* at 95-104.

<sup>8</sup>*Id.* at 104.

<sup>9</sup>2000 BiOP at § 3.2.2.6.

<sup>10</sup>See Letter from Howard Shaller, Project Leader, U.S. Fish and Wildlife Service, to David McDonald, City Planner, City of Pasco, Feb. 1, 2000.

<sup>11</sup>See 1997 Fish Passage Center Annual Report at x.

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Measured flows failed to meet summer flow objectives at Lower Granite Dam:<sup>12</sup>

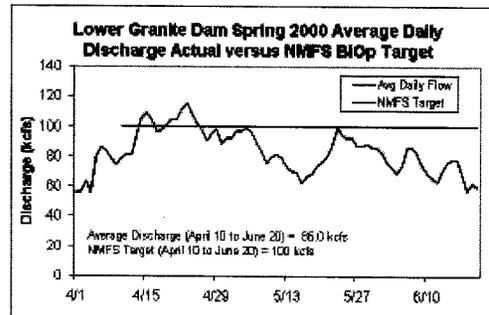
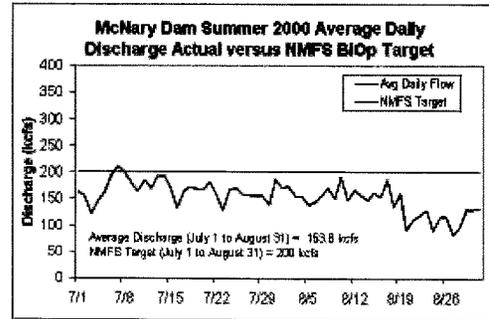
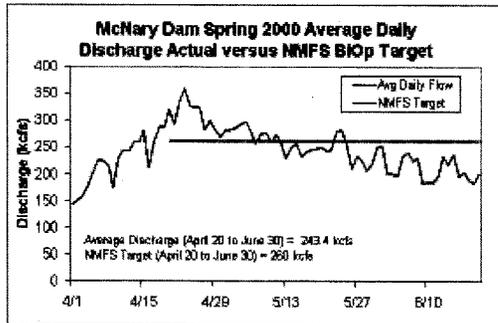
- Over 2/3rds of the time in 1999
- Nearly 1/2 of the time in 1998
- Over 1/3rd of the time in 1997
- Over 2/3rds of the time in 1996

At McNary Dam, measured summer flows fell short of target levels:

- Nearly 1/4th of the time in 1999
- Over 3/4ths of the time in 1998
- Over 1/4th of the time in 1997
- 2/5ths of the time in 1996

Target flows were not met on average at either McNary or Lower Granite Dams for both the spring and summer seasons of this year as well, as shown below.

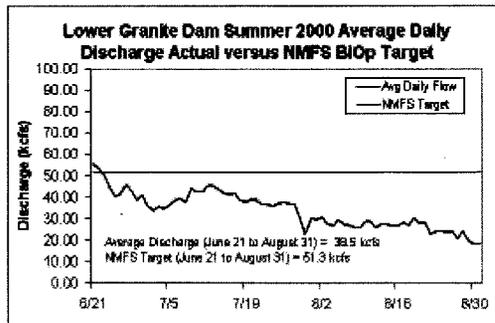
*Graphs below reflect low flow conditions in the Columbia and Snake Rivers for the Year 2000. As is evident, target flows were not met on average for both spring and summer.<sup>13</sup>*



<sup>12</sup>See Memorandum in Support of Plaintiff's Motion for a Preliminary Injunction, or in the Alternative for Summary Judgment and a Permanent Injunction at 7 (May 18, 2000), *Trout Unlimited et al. v. NMFS et al.*, U.S. District Court (Or.), Civ. No. 00-262 MA.

<sup>13</sup>Graphs are courtesy of the Fish Passage Center, see *infra* note 16.

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The federal government's Year 2000 update to its plan for recovering salmon in the Columbia and Snake Rivers continues to place great importance on augmenting river flows to meet target levels.<sup>14</sup> Under NMFS' directive, state, federal, and private players have already spent millions of dollars in efforts to augment flows. Yet these efforts are still falling far short from achieving salmon flow objectives. The federal government states that, in order to achieve a more normative river, "significant amounts of additional water targeted to enhance flows during fish migration are needed."<sup>15</sup> As well, the Fish Passage Center<sup>16</sup> estimates that additional augmentation flows beyond quantities currently provided are necessary to meet spring and summer target flows—on the order of another 1 to 1.5 million acre-feet per year.<sup>17</sup>

## Current Water Rights: "That's a Lot of Water...."

As things stand today, state-permitted water use significantly reduces flows in the Columbia, affecting fish habitat and reducing fish production. A staggering amount of water is currently tied up in water right certificates and claims—mostly for irrigation which depletes river flows in months when water levels are already at their lowest. Alarming, the river's current flows also do not present an accurate baseline—a number of water permits have been granted by the State and flows will continue to decrease as permittees gradually use the full amount of their water rights. Granting any further withdrawals will just serve to exacerbate an already precarious situation.

<sup>14</sup>See 2000 BiOp.

<sup>15</sup>Federal Conservation Strategy, vol. 1 at pg. 79.

<sup>16</sup>The Fish Passage Center (FPC) is an entity created to provide fish passage management recommendations regarding spill, flow and fish facilities operations to the federal Fish and Wildlife Managers. See the FPC web site at [www.fpc.org/Index.htm](http://www.fpc.org/Index.htm).

<sup>17</sup>See Memo from Dusica Jevremovic, Fish Passage Center, to Michelle DeHart (Jan. 18, 2000).

As mentioned previously, water quantity problems greatly affect water quality—by affecting water temperatures, pollutant concentrations, and sedimentation rates.<sup>18</sup> While much of the water used for irrigation is eventually returned to the river, still: (1) crops consume a large proportion of water used; (2) diversions and withdrawals remove water from the river and streams from May to September, and return flow is not only delayed but difficult to measure, and (3) return water carries with it pesticides and higher nutrient levels.<sup>19</sup>

The Bureau of Reclamation recently calculated the total amount of irrigation water rights<sup>20</sup> claimed or granted by the State to date.<sup>21</sup> The figures are surprising to say the least: Over 200,000 cfs (or nearly 8 million acre-feet per year during the season from April to October) for both surface and groundwater irrigation rights have been granted above McNary Dam; and over 110,000 cfs (or roughly 4 million acre-feet per year during the season from April to October) for both surface and groundwater irrigation rights have been granted above Lower Granite Dam.<sup>22</sup>

These water extractions collectively account for nearly 40% of the average natural Columbia River flow in low flow years at McNary Dam during the irrigation season.<sup>23</sup> Consequently, a staggering portion of the river is already being used under these certificated and claimed water rights. Perhaps most alarming—Ecology has also permitted roughly 150 water rights that are not reflected in these figures and remain partially "inchoate"—meaning that Ecology granted a water user the right to take a specified amount of water, but the user has yet to fully use or "perfect" the full amount of water granted. Some of these permits date back to the 1960's and a few of the permittees have failed to even begin the construction allowing them to appropriate their requested diversions. These permits collectively authorize extraction of over 1600 cfs from the Columbia, or roughly another 330,000 acre-feet per year on top of the amount already being used under the water rights discussed above.<sup>24</sup>

The existence of these inchoate rights mean that the current flows in the Columbia, which are already below established flow targets for much of the fish-critical season, are a false baseline:

- Current flows in the Columbia River fail to reflect the large portion of water already permitted, but not fully put to use; and
- Columbia River flows will continue to decrease—even without the State permitting further water use.

<sup>18</sup>2000 BiOp at § 5.3.2.

<sup>19</sup>Id.

<sup>20</sup>Claims and certificates.

<sup>21</sup>See Cumulative Hydrologic Impacts of Water Resource Development in the Columbia River Basin, Final Report Prepared by U.S. Bureau of Reclamation Pacific Northwest Region for National Marine Fisheries Service at Appendix B ("Summation of Water Rights and Withdrawals Above Lower Granite and Above McNary Dam") (June 1999) (hereinafter referred to as "the BOR Cumulative Effects Report"). The BOR used 1994 data on state water rights to do these calculations. The calculations represent the amounts granted on certificates, and the amounts stated on water right claims.

<sup>22</sup>Id.

<sup>23</sup>See Biological Opinion on Inland Land, Inc. at ii (NMFS, 1997) (hereinafter "NMFS Inland Land Opinion"), summarizing findings from the BOR Cumulative Effects Report.

<sup>24</sup>See Appendix A. This figure includes consumptive uses only. Permits under which a permittee has already filed a proof of appropriation were excluded. Consequently, this figure represents the total amount of water that has been permitted for consumptive use, but not yet fully perfected.

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Moreover, the total amount of water requested in applications currently pending before Ecology represents another 900 cfs.<sup>25</sup> Many of these applications were filed during the permitting moratorium: Were Ecology to begin approving applications for new water, many more applications would very likely be filed. Each individual diversion request may seem like a drop in the bucket when compared to the great flow of the Columbia. Yet considering the unbelievably large portion of the river that has already been appropriated one diversion at a time, coupled with the inability of the river to meet flows necessary for fish—it becomes painstakingly obvious that the river is already over-appropriated.

Too much of the natural flow of the Snake and Columbia Rivers is already tied up in state-certificated water rights, permits and claims. Allowing subsequent diversions will only hinder the State's ability to meet flow objectives in the future. As discussed below, the State is governed by an obligation to ensure that management of public waters serves to protect river, stream, and aquifers at levels necessary for the health of fish and wildlife: Ecology should be working to meet flow objectives, not hinder others' efforts along these lines while simultaneously increasing the difficulty of meeting flow objectives in the future.

## Common Sense and The Law

Ecology's position in planning to permit further Columbia withdrawals is inconsistent with the State's commitment to help restore salmon, and thwarts the numerous and ongoing efforts underway to augment flows. The State has both responsibilities under the Water Code and under commitments made to the public and other jurisdictions to promote salmon recovery.

### Common Sense

Ecology really must work collaboratively with other state and federal entities to protect Washington's waters. The Snake and Columbia Rivers traverse both state and international boundaries, and provide habitat for numerous ESA-listed species.<sup>26</sup> Collaborative efforts do not entail federal supremacy or an abdication of state authority, but instead a recognition that the waters of the state must be sustainably managed, coupled with a commitment to do so.

Unfortunately, permitting further water use from the Columbia River will counter numerous ongoing salmon recovery efforts. Specifically permitting further diversions and withdrawals in Washington will directly counter the following salmon recovery efforts:<sup>27</sup>

### Federal, State, Tribal and Individual Water Users' Efforts to Augment Flows:

- The BOR has been providing, and proposes to continue providing, 427,000 acre-feet of water per year from the Upper Snake River Basin to benefit flow conditions during

<sup>25</sup>See Appendix B. This figure represents all consumptive uses that would impact flows.

<sup>26</sup>Endangered Species Act, 16 U.S.C. § 1531 et seq.

<sup>27</sup>These actions are examples of major initiatives that will be counteracted by further Washington State permitting activities on the Columbia and Snake Rivers. The lists are not exhaustive.

the salmon migration season from April through August (termed "flow augmentation").<sup>28</sup>

- "To provide this water, the BOR has reacquired some 60,000 acre-feet of reservoir storage space in its Upper Snake River basin reservoirs and has assigned about 100,000 acre-feet of previously unassigned space to flow augmentation. The BOR has also leased 38,000 acre-feet of storage space in Palisades Reservoir as part of a 5-year agreement with the Shoshone Bannock Tribes of the Fort Hall Indian Reservation and has acquired 17,650 acre-feet of natural flow rights in Oregon for flow augmentation. The BOR proposes to acquire any remaining water needed to meet the 427 kaf goal from willing lessors in Idaho's water banks. Using this strategy, the BOR has successfully provided about 427 kaf annually from upper Snake River basin reservoirs and natural flow rights since 1993."<sup>29</sup>
- The State of Idaho enacted legislation specifically designed to grant the BOR access to Idaho's water banks.<sup>30</sup> This means that Idaho irrigators—individual family farmers, ranchers and water users—are choosing to sell or lease their rights to improve flow conditions downstream.
- The Idaho State Department of Water Resources instituted a moratorium against further consumptive withdrawals from the Snake River Basin.<sup>31</sup>
- The BOR is also purchasing water rights from individual farmers, ranchers, and water users in the Yakima Basin in order to enhance flows for fish in the Yakima River—a major tributary to the Columbia.

### International Agreement(s) to Augment Flows:

- Under the Columbia River Treaty and Non Treaty Storage Agreements, Canada (B.C. Hydro) stores and releases 1 million acre-feet of water per year to improve the likelihood of achieving salmon flow objectives in the mainstem Columbia.<sup>32</sup>

### The State's Own Salmon Recovery Initiatives:

- The Washington State Legislature set up the Governor's Salmon Recovery Office in 1998, to support Governor Locke's Joint Natural Resources Cabinet in shaping a statewide strategy to recover salmon.<sup>33</sup>

<sup>28</sup>See 2000 BiOP at § 3.2.2.6.

<sup>29</sup>Id.

<sup>30</sup>See Idaho Code § 42-1763B

<sup>31</sup>This moratorium basically applies to the Snake River Basin from the Eastern boundary of the Snake River to the King Hill gauging station, and from the King Hill station to the Western border. Information gained from Pam Scaggs, Idaho Department of Water Resources, Oct. 20, 2000.

<sup>32</sup>See 2000 BiOP at § 3.2.2.7.

<sup>33</sup>See The Salmon Recovery Home Page at [www.governor.wa.gov/esa/index.htm](http://www.governor.wa.gov/esa/index.htm).

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- The Joint Natural Resources Cabinet subsequently released a Statewide Strategy to Recover Salmon in 1999.<sup>34</sup> This Statewide Strategy recognizes that:

*Lack of stream flow to sustain healthy production levels is a key factor contributing to the poor status of wild fish stocks. Streams and rivers in several basins used by salmon are over-appropriated, meaning more water is being withdrawn for uses such as irrigation, when flows are naturally low and when fish need water.*<sup>35</sup>

To address these flow problems, the State plans to focus on restoring flows and putting water back instream for fish. The State plans to do this by:

- Halting the issuance of any new water rights until instream flows can be set for priority watersheds;
- Making flow restoration the primary objective in watersheds where existing uses diminish flows for fish; and
- Aggressively pursuing opportunities to use public funds to lease or purchase senior water rights to put water back instream for fish.<sup>36</sup>

Permitting further withdrawals will also run directly counter to the State's obligations under the State Water Code, Chapter 90.03 RCW, and other applicable law:

## State Water Law

Ecology is governed by many different directives in managing water use in the state. It is the stated policy of the State, for example, to promote use of water while at the same time ensuring that enough water is retained instream to protect natural rights and values.<sup>37</sup> Under a separate legislatively-declared fundamental, Ecology must protect the quality of the natural environment and work to enhance it, by ensuring adequate stream flows for fish, wildlife and other environmental values, and by ensuring high water quality.<sup>38</sup> Further mandates require Ecology to consider public interest concerns more specifically: Ecology must, for example, reject a water right if it proves detrimental to the public interest.<sup>39</sup> This "public interest" language obligates Ecology to protect the natural environment, and to consider the needs of threatened and endangered species.

<sup>34</sup>Extinction Is Not An Option: Statewide Strategy to Recover Salmon, Washington State Joint Natural Resources Cabinet (1999) (The State's stated objective is to "[r]estore salmon, steelhead, and trout populations to healthy and harvestable levels and improve the habitats on which fish rely." The Strategy was designed as a long-term vision or guide for salmon recovery in Washington.)

<sup>35</sup>*Id.*

<sup>36</sup>*Id.*

<sup>37</sup>RCW 90.03.005.

<sup>38</sup>RCW 90.54.020 ("Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish,....and other environmental values"; "Waters of the state shall be of high quality.").

<sup>39</sup>RCW 90.03.290.

Consequently, in granting any water rights request, Ecology must ensure that (1) the requested use of water is for a beneficial purpose; (2) there is water available to satisfy the request; (3) the available water will not impair existing rights; and (4) granting the permit will not be detrimental to the public interest.<sup>40</sup>

Ecology cannot meet these mandates if it permits further water use from the Columbia River, however. Flows are already insufficient to ensure salmon survival and recovery. Considering the fact that federal, state, and private entities are working to augment flows to meet flow objectives, the obvious conclusion is:

**Water is simply not available for further appropriation. Allowing further extractions based on the concept that each by itself has an immeasurable effect is also against the public interest. Ecology lacks the vital information on water use and the cumulative impact of current and future diversions and withdrawals to permit any further water extraction from the Columbia River.**

## Lack of Vital Information on Water Use and Cumulative Effects

Ecology is required under a 1993 law to meter all water use from rivers with depressed salmon stocks.<sup>41</sup> This includes both new and previously existing water rights and claims.<sup>42</sup> Drafted as part of a larger salmon recovery package, the statute logically recognizes that the first step in water management is to know how much water is being used and by whom.

Without this basic information, it is difficult or even impossible to assess the cumulative impacts of water use on river flows, and to gauge whether further extractions would exacerbate flow problems. Ecology must consider cumulative impacts in light of all planned or reasonably foreseeable future actions, prior to granting any new water rights.<sup>43</sup> Consequently, Ecology must understand and consider not only the cumulative effects of current water use, but the likely cumulative effects of future water demand on the quality and quantity of flows in the Columbia and Snake Rivers as well.

<sup>40</sup>*Id.*

<sup>41</sup>RCW 90.03.360.

<sup>42</sup>*Id.*

<sup>43</sup>*Okanogan Highlands Alliance et al. v. Department of Ecology*, PCHB Nos. 97-146, 97-182, 97-183, 97-186, 99-019, Finding of Fact #24, 2000 WL 46743 (Jan. 19, 2000). See also *Fleming et al. v. Department of Ecology*, PCHB Nos. 93-320, 94-7, 94-11, 1994 WL 905610 at \*5 (1994) ("The public interest includes an examination of the net benefits from diversionary uses and retention of waters within streams. In this regard consideration should be given to the cumulative impact of similar requests that might be made in the future.")

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Ecology failed to implement required metering under this 1993 law, however, and currently does not meaningfully monitor (meter) water use under existing water rights in the Columbia Basin.<sup>44</sup> Ecology also has not completed any studies to assess the cumulative impacts from either current water extraction or foreseeable future water extraction in the Columbia and Snake Basins. Consequently, Ecology does not know the extent of actual water use impacting the Columbia and Snake Rivers, and cannot sufficiently assess the cumulative impacts of state-permitted water diversions and withdrawals on river flows.

While the Quad Cities pointed out that the impact of their diversion would only reduce the river by less than one inch over a 30 year period, and decrease smolt survival by only .0002 to .003 percent<sup>45</sup>—this application was just one of more than 100 applications pending before Ecology for Columbia River water. Were Ecology to justify approving any of the 100+ requests based on an assertion that each water extraction in itself will have only a small effect on river flow, water use could be permitted right to the point where the river runs dry. As Ecology staff outlined in an internal e-mail, "[t]he concept of 'measurable' effects is a red herring...because under the shield of that argument we could permit an infinite number of 'unmeasurable' depletions to dry up the river, having never had a 'measurable' effect on the (consequently extinct) fish."<sup>46</sup> Also, NMFS points out that "[a]s the interior Columbia Basin grows and develops it is foreseeable that demand for water will continue to grow as well...to allow additional future withdrawals to proceed, on the logic that each one by itself has a small impact, would undermine one of the major improvements in habitat conditions and further degrade the environmental baseline."<sup>47</sup>

State law provides that the waters of the state are owned by the people of the state, and managed for the people by the state.<sup>48</sup> As mentioned above, Ecology, as the agency entrusted with managing the state's water resources, must protect the quality of the natural environment and, where possible, work to enhance it by ensuring adequate stream flows and water quality for fish and wildlife.<sup>49</sup> With little-to-no information gathered as to the extent of state-permitted

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<sup>44</sup>Indeed – state-wide. Ecology's failure to implement this statute was recently challenged by CELP and other groups: Thurston County Superior Court Judge Richard Hicks, in a February ruling of this year, stated that metering "is a necessary step to bring us out of the dark and into the light" as the state deals with managing "this most precious resource." Judge Hicks denied a motion by the Department of Ecology to dismiss claims by CELP and other groups that Ecology failed to properly implement the metering statute, and found that Ecology violated the statute by failing to require the metering of new and existing surface water rights. Judge Hicks also granted partial summary judgment in favor of the environmental groups ruling that existing groundwater rights must be metered where salmon are at risk, and scheduled a fact finding hearing to determine whether Ecology must give priority to water metering work. *American Rivers et al. v. Department of Ecology*, Thurston County Superior Court No. 99-2-00480-6.

<sup>45</sup>See Supplemental Final Environmental Impact Statement, Diversion of Water from the Columbia River by the Cities of Kennewick, Pasco, Richland, and West Richland (June 2000).

<sup>46</sup>See E-mail from Ken Slattery, Department of Ecology, to Keith Phillips, Water Resources Program Manager, Department of Ecology, Sept. 8, 1999.

<sup>47</sup>NMFS Inland Land BiOP at 13.

<sup>48</sup>RCW 90.03.010.

<sup>49</sup>RCW 90.03.005; RCW 90.54.020.

water use, and consequently no meaningful understanding of the cumulative impacts of water use on river flows, Ecology possesses insufficient information to continue to permit further water extraction from the Columbia River—a river with poor flows that harbors numerous ESA-listed species.

As well, permitting further water use would be inconsistent with Ecology's own internal policies and legislative funding directives:

## *Ecology's Inconsistent Positioning*

Ecology recently presented a "Vision" outlining the agency's plans for future management of the state's waters.<sup>50</sup> As one integral part of this Vision, Ecology intends to assess the needs of the natural resource base, including flows necessary for fish and wildlife, and ensure that these needs are satisfied. Notwithstanding this common sense approach, Ecology is about to quash its own Vision by permitting more water use from a river system unable to meet flows necessary to protect fish and wildlife.

Ecology's internal policies illustrate the agency's management inconsistencies: Under one particular policy, Ecology is funded for and initiating a pilot program to buy "Water for Fish."<sup>51</sup> The legislature provided Ecology with \$1 million in the 1999 legislative session to fund a program to purchase or lease water rights—specifically so that Ecology could preserve and enhance flows in areas where not enough water exists to satisfy the needs of fish.<sup>52</sup> Ecology instituted a policy the year before this, however, detailing a plan to assist people applying for a water right *in finding water*.<sup>53</sup> Ecology is also developing a plan *right now*, specific to the Columbia Basin, in which Ecology plans to aid applicants seeking Columbia River water in finding marketable and senior water rights that can be transferred for mitigation purposes ancillary to extracting more water from the river.<sup>54</sup>

Since the Columbia is currently not meeting target flows at critical times of the year, the resource base is certainly not being "satisfied." Also, this lack of satisfaction is expounded by the fact that a portion of the current flow of the river will continue to decrease as permit holders perfect their water rights. The Columbia River, consequently, is already over-appropriated. To achieve its vision of "satisfying the natural resource base" and responsibly managing the river, Ecology should be trying to obtain water rights for transfer to instream use, with the goal of meeting flows for fish. Conceivably, however, an applicant seeking water from the Columbia could actively pursue, and with Ecology's aid, find marketable water rights

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<sup>50</sup>This vision statement was presented to CELP by Keith Phillips, Water Resources Program Manager, Department of Ecology, in 1999. See also Ecology's website at [www.ecy.wa.gov/programs/wr/plan/vis-stat.html](http://www.ecy.wa.gov/programs/wr/plan/vis-stat.html).

<sup>51</sup>See Focus: Buying Water for Fish – Pilot Program, on Ecology's website at [www.ecy.wa.gov/biblio/0011003.html](http://www.ecy.wa.gov/biblio/0011003.html)

<sup>52</sup>*Id.*

<sup>53</sup>See Department of Ecology Water Resources Program Policy 1010 (POL-1010) (1998).

<sup>54</sup>Information gained from a meeting with Tom Fitzsimmons, Director, Department of Ecology, August 28, 2000.

# Letter 10 Exhibits

for use as mitigation that would allow the applicant to pull more water from the river. Ecology's aid would be as facilitator—funneling senior, valid water rights *towards* applicants seeking new water, and *away from* opportunities to increase flows to achieve target levels. The following bullet points clearly and succinctly lay out Ecology's management inconsistencies:

- Ecology plans to start processing applications for new water from the Columbia. The agency plans to allow applicants to take more water out of the mainstem even when the river is running too low to meet target flows set for fish.<sup>55</sup>
- Ecology plans to help applicant's find marketable water rights to buy and use as mitigation water to offset impacts from new diversions.<sup>56</sup> While we applaud efforts to mitigate such impacts, Ecology should be ensuring flows are met prior to becoming a water broker for private interests.
- Ecology is actually funded by the Legislature (\$1 million) to find salable water rights in fish critical basins and put the water back instream. Yet, as noted above, they are now planning on funneling these same rights to water users to allow for more water extraction.

### *So this all begs the question:*

Is Ecology, and indeed the State of Washington, committed to its stated Vision of satisfying flows for fish? Will Ecology responsibly manage the State's waters so that permitted use of rivers is sensible and sustainable? Or will Ecology help promote further water use at a time when information is lacking and flows are already too low to even sustain current salmon populations, let alone healthy populations?

#### **WHAT NEEDS TO BE DONE:**

**Closing the Columbia to further diversions and withdrawals is a necessary first step toward ensuring the State does not further exacerbate an already-precious situation.**

**The Columbia River is already over-appropriated. The State needs to stop, assess the situation and the needs of the resource, and then figure out sustainable and innovative ways to find water for people while saving enough water for fish.**

<sup>55</sup>d.  
<sup>56</sup>d.

## **How to Find More Water for People and Still Save Enough Water for Fish**

Roughly 3 million people live in the Columbia Basin, and by the year 2040 this figure is projected to double to 6 million.<sup>57</sup> This burgeoning population growth clearly presents a daunting challenge to municipalities and others that must plan ahead to ensure adequate supplies of potable water and resources will be available for twice as many people as exist today. We understand the concerns of those planning for such immense growth in their jurisdictions. But we also feel that the traditional approaches of planning for growth have not been good enough to find water for people while simultaneously saving enough water for fish. Growth cannot continue to occur unchecked, and we need to carefully plan our communities and the impacts from those communities well into the future, keeping an open mind to new solutions that can preserve the resources we depend upon. Changes in fundamental concepts relating to water use and water supply can provide innovative solutions to finding water for both people and fish.

### *Stepping Outside of the Box:*

The cost of water will begin to reflect its scarcity. Once we decide what limits exist to increasing water extraction from the Columbia Basin, we may not only realize we are unable to find more water to divert and withdraw—but that we need to backpedal in order to protect the Basin's water budget at levels which protect the resource overall. Water use in the state has been a free enterprise up until recently: The only fee involved for gaining a water right has been a filing fee paid to the Department of Ecology. As we are realizing the natural limitations of water basins to provide water for people while simultaneously maintaining functionality for fish and other wildlife, we are starting to see rising costs associated with increased water use. Applicants for new water in water-limited basins must now spend money seeking out and paying for existing water rights—to fulfill their needs either by transferring the rights to cover their intended uses, or to serve as mitigation water for proposals to appropriate new water from a given source. These salable rights are becoming, or are soon to become, a hot commodity—and the price of such senior, valid water rights will begin to increase with scarcity. What will be the price of the last salable right, after all other salable rights that fit demand/supply conditions are sold? How much will it be worth to find new water fifty years from now, when people have paid increasingly large sums of money to find salable rights right up until the point where the price of the next salable right is not worth the contemplated exchange for a new use?

While promoting the sale and transfer of existing rights over the granting of new water rights presents one solution, this solution cannot solve all water supply problems and thus cannot exist in a vacuum. We need to create innovative efforts in water conservation and water management that can directionally change our concepts of water use into this next millenium.

<sup>57</sup> *Big River News* at 3 (Natural Resources Law Institute, Fall 2000).

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## The Conservation Potential

Great potential for water conservation and innovative water management exists in the Columbia and Snake Basins—indeed, statewide. This potential exists across the board, for all major water users including irrigators, municipalities, and industry alike. By assessing and implementing current cost-effective conservation, and by shifting to technologically feasible and innovative conservation in the future, we can create new sources of supply and avoid placing further reliance on our over-appropriated streams, rivers and aquifers.

To provide just a few examples of cost-effective conservation techniques: (1) irrigators could use best irrigation practices to realize greater irrigation efficiencies—switching to drip irrigation, for example; (2) industries could start reusing water; and (3) municipalities could find greater efficiencies by updating their systems to reduce lost-or-unaccounted-for water. To begin the process of shifting towards conservation, for example, municipalities would need to complete comprehensive conservation potential assessments, with the goal of using conserved water as a new source of supply.

The City of Seattle completed a Conservation Potential Assessment in 1998, noting that, historically, “water supply planning and development has followed a predictable path of tapping a single large water source every 30-50 years to meet growth in regional water demand. Today reliance on any single option to meet future demand is an increasingly high-risk gamble due to environmental, political, and demographic uncertainties.”<sup>58</sup> The results of Seattle’s conservation assessment were encouraging: cost-effective conservation can realize savings of “up to 31 million gallons per day (mgd) or 16% of water use in the peak season...over the next 20 years with no reduction in customer’s ability to use water nor in their satisfaction with water services.”<sup>59</sup> Implementing technologically feasible conservation nets an additional savings of 12 mgd—for a total of 43 mgd saved over the next 20 years.<sup>60</sup>

## Into the Future

This leap away from further water extraction and towards fundamental changes in supply and demand management advances a vital idealistic shift in managing water use overall. Current water law and management in Washington is witness to the continued allocation of water to people, without preservation of a resource base for fish and wildlife. If we ensure satisfaction of the natural resource base *first*, we can then implement more innovative ways of managing and using water, allowing for a high quality of life while simultaneously preserving the natural environment fundamental to our identity.

Nature envelops mankind, and even stating that water must be reserved for “people and fish” separates one entity into incomprehensible parts. CELP believes that by satisfying the needs of nature, we satisfy our own needs. A balance exists to everything in this world, and we have been given both the intelligence and the ability to preserve this balance.

Let’s do just that.

<sup>58</sup>Water Conservation Potential Assessment: Final Report (Seattle Public Utilities, 1998).

<sup>59</sup>*Id.*, at 1, 4.

<sup>60</sup>*Id.*

## APPENDIX A

The following list includes all permits listed as “Columbia River permits” in Ecology’s water rights tracking system. Permits with proofs of appropriation filed were not included. Consequently, the permits included in the list below are those for which the permittee has yet to fully perfect their water right.

It is important to note that some of the permittees listed below have yet to even begun or complete the construction necessary to fully perfect. As is evident, some of these rights were also granted nearly 40 years ago and many are well beyond their expected completion date.

### Columbia River Permits<sup>61</sup>

CONTROL #	APPLICANT	CFS	AFY	priority	expected
21138(F)	Cox	12.80	3264	1973	1999
21138(H)	Wyatt	0.48	121	1973	2001
21138(J)	Smith	1.01	255	1973	1999
21138(N)	Northwest Farm Credit	0.66	170	1973	1999
21138(T)	Perkins	0.42	106.3	1973	1994
21138(U)	Smith	0.25	63.8	1973	1999
21138(Z)	Orozco	0.08	21.3	1973	1999
21138(ZA)	West	0.25	63.8	1973	1999
21139(A)	Johns Farm Ltd.	12.01	3098.3	1973	1996
21139(B)	Gopher Broke Orchard	0.57	144.5	1973	1996
21139(G)	Wells	3.03	773.5	1973	1993
21139(L)	Fugachee Orchards	0.83	212.5	1973	1999
21139(N)	Orozco	0.73	187	1973	1999
13134	WA DNR & K 2 H Farms	27.00	4540	1962	1995
14583	Stimson Lane Ltd	66.80	13200	1966	2000
15042(A)	Stimson Lane Ltd	85.90	17180	1967	2000
15855	WA DNR & K 2 H Farms	3.00	1010	1968	1995
16312(A)	WA DNR & K 2 H Farms	242.00	46475	1970	1995
16571(A)	WA DNR & K 2 H Farms	587.76	112052.8	1971	1995
16571(D)	Watts	20.88	3982	1971	1994
16638(A)	WA DNR & K 2 H Farms	12.81	2743.3	1966	1995
25639(A)	WA DNR Laukers	112.58	27110.5	1977	1996
25639(B)	Watts Brothers Farm	19.05	4589	1977	1999
25639(C)	Winemakers LLC	7.89	1899	1977	1998
25639(D)	Watts	32.86	7912	1977	1999
25639(E)	Watts	32.86	7912	1977	1999
25639(F)	Winemakers LLC	9.15	2204	1977	1998

<sup>61</sup>Permit information gained from Ecology.

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## Appendix A

25639(G)	Nichols	27.87	6709.1	1977	1997
25639(H)	Beightol	9.36	2254.9	1977	1998
25639(I)	Mercer	30.89	7437.3	1977	2001
25639(N)	Columbia Ridge Orchard	7.89	1899	1977	1998
25639(P)	Mercer	18.41	4432	1977	1998
25639(S)	Mercer Ranches Inc	7.89	1899	1977	1996
25639(Z)	Mt. Adams Orchard	1.96	474.7	1977	2001
27335	Poirier	2.67	48	1981	1994
27518	Kennewick Port	10.00	3600	1981	1999
27890(A)	Chapman	0.53	96	1982	1995
27890(B)	R I F Dev. Co.	1.25	224	1982	1995
28168	Giles	1.30	260	1983	2000
28169	Giles	1.30	260	1983	2000
28500(A)	Gebbers Farms Inc	0.86	152	1984	1994
28683(A)	Homeland Fruit Co.	0.02	10	1985	1994
28881(B)	USARMY COE/Maryhill	0.44	24	1980	1995
28998(A)	John Hancock Mutual	3.50	942.4	1986	2003
28998(B)	Desert Hills Fruits	3.20	868	1986	2003
29870	Gebbers Farms Inc	3.78	800	1988	1999
29876	W N Orchards Nickell	7.80	1621.9	1988	1998
29942	Drinkwater	2.00	356	1989	1999
29971	Orozco	0.20	44	1989	1996
30053(A)	Mercer Ranches Inc	27.59	4943.4	1989	2000
30053(B)	McBride Hereford Ranch	1.96	320	1989	1996
30053(G)	Rocha	0.12	29.4	1989	1999
30053(I)	McBride	0.25	40	1989	1999
30053(J)	Meek	0.12	20	1989	1999
30053(N)	Mercer	0.25	58.9	1989	1999
30053(O)	Columbia Ridge Orchard	0.91	217.9	1989	1999
30053(P)	John Hancock Mutual	8.70	1424.8	1989	2000
30070	WA PARKS Chief Joseph	2.58	576	1989	1998
30124	Canoe Ridge Vineyard	2.20	742.5	1989	1996
30151	Wick	4.53	1200	1990	1998
30199	Stemilt Irrigation Dist.	6.70	1250	1990	1996
30205	Pariseau	11.10	2088	1990	2000
30217	Curry	0.23	40	1990	1997
30289	Stimson Lane Ltd	5.00	1540	1980	2003
30322	P & G Orchards	0.60	112.8	1990	1997
30388	Gebbers Farms Inc	5.70	1245.2	1990	1994
30389	Wick	5.70	1245.2	1990	1995
30391	Wick	3.40	900	1990	1996
30486	Zimmerman	0.09	14.8	1990	1996
30487	Zimmerman	0.17	25.4	1990	1996
30488	Zimmerman	0.09	14.3	1990	1996
30489	Zimmerman	0.23	39.2	1990	1996

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30490	Zimmerman	0.07	10.2	1990	1996
30491	Zimmerman	0.11	18.7	1990	1996
30492	Zimmerman	0.12	21.4	1990	1996
30493	Zimmerman	0.06	9.1	1990	1996
30494	Zimmerman	0.13	21.2	1990	1996
30589	Hansen	1.82	361	1991	1994
30634	Sandpiper Farms Inc.	34.00	4500	1991	1996
30728	Badger Mountain Irr.	25.00	5160	1991	2002
30738	Richerson	0.15	26.6	1991	1995
30791	Kopak Jr.	0.02	1	1991	1995
30834	Berg	13.37	2850	1991	1997
30847	Gebbers Farms Inc	1.99	495.8	1991	1997
30952	Pariseau	15.28	2617	1991	1997
30983	Gebbers Farms Inc	0.71	161	1991	1997
30997	Naumes Inc. Hunter	11.14	1385	1991	2000
30998	WA DNR & P & G Orchard	0.86	172	1991	1997
<b>TOTAL:</b>		<b>1630 cubic feet per second (cfs)</b>			
		<b>331,601 acre-feet per year (afy)</b>			

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CELP's Columbia River Vision

Appendix B

## APPENDIX B

The following list includes surface water applications from the Columbia River and ground water applications determined to be in significant hydraulic continuity with the river. This list does not include the Snake River. Also, the list may not be complete. The Columbia River moratorium was lifted in 1997 and recent applications may not have been designated in the same fashion after the moratorium was lifted. Even when the moratorium was in place, it is possible that not all groundwater applications in significant hydraulic continuity with the river were identified as such and designated in the proper database – a gap exists in priority dates of groundwater applications from 1995 to 1999, for example.

### Pending Columbia River Applications<sup>62</sup>

SURFACE APP # (S4-#)	APPLICANT	AMOUNT REQUESTED (CFS)
26814	Chelan Cty PUD	16
29956	Lower Stemilt Irrig.	2.45
30052	Mercer Ranches Inc.	0.02
30185	Richland City Myers	12.6
30465	Kennewick Irrig.	82
30584	Kennewick Public Hospital	49.5
30976	Quad Cities	178
31083	Lower Stemilt Irrig.	4.66
31106	Scheib	1.78
31110	Roper	0.07
31117	Metropolitan Life Ins.	1
31133	Douglas County PUD 1	0.07
31134	Douglas County PUD 1	0.33
31137	McBride Hereford Ranch	17.11
31148	Mercer Ranches Inc.	0.45
31174	Cooper	0.1
31175	Cooper	0.12
31197	Rains	0.16
31249	Shaw	0.06
31262	Moody	0.11
31263	Kessenich	0.11
31291	Ford	0.02
31319	Creveling	19.2
31365	Schlunegar Brothers	53.57
31366	Schlunegar Brothers	17.86
31424	Sinclair	0.16

<sup>62</sup>Application information gained from Ecology. Please note that these lists may not be complete due to Ecology's tracking methods. Figures thus represent the minimum of water requested.

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31460	Pariseau	15.6
31462	Magnussen	0.02
31481	Kennewick Irrig.	18
31536	Pariseau	2.67
31623	Kopak Jr.	0.5
31711	WA DNR & Clyde Bybee	8.89
31712	WA DNR Laukers	2.33
31714	Crane	3.56
31789	Crane	3.56
31806	Munn	2.33
31815	R I F Dev. Co.	0.41
31848	McBride Hereford Ranch	14.67
31867	Apple Mngt Co.	0.5
31870	West	11.5
31905	Harris Farms Inc.	12.3
31936	Nelson	0.28
32074	Reeves Brothers Orchard	1.5
32190	Miller	2.23
32336	Douglas County PUD 1	0.11
32367	Wenatchee Heights Re.	11.5
32392	Crane	4.46
32393	Crane	3.56
32394	Crane	4.45
32398	Crane	4.46
32399	Crane	2.67
32400	Crane	4.01
32401	Crane	3.56
32420	Douglas County PUD 1	0.11
32421	Douglas County PUD 1	0.09
32548	Crane	0.44
32577	WA DNR Laukers	3.9
32622	WA DNR Buchholtz	10.7
32678	Mercer	24.5
32682	McLean	3.79
32744	Newman	0.08
32774	Munn	131
32803	Columbia Gas Storage	0.89
32804	Mercer Ranches Inc.	1.5
32838	Priest Co. Inc. Priest	29.6
32900	Gebbers Farms, Inc.	7.13
32917	Columbia Gas Storage	8.9
32927	Bybee	8.35
32928	Hartley	4.9

TOTAL AMOUNT OF SURFACE WATER REQUESTED = 833.02 cfs or 373,884 gpm

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<u>GROUND APP.#</u> (G4-#)	<u>APPLICANT</u>	<u>AMOUNT (GPM)</u>
31089	Gunkel	600
31098	Shore Properties Inc.	5650
31138	McBride Hereford Ranch	7680
31186	Auvil Fruit Co. Inc.	3000
31210	Hale	89
31247	Chelan County PUD	600
31269	Boesel Construction	30
31374	Troutman Ranches	2000
31375	Troutman Ranches	800
31399	Nickell Orchards	200
31412	Davis	600
31516	Stansfield	150
31517	Sinclair	20
31518	Sinclair	25
31524	Orondo Orchards Inc.	690
31526	Benson	175
31574	Ross	290
31583	Malaga Water Dist.	1500
31621	Goodman	171
31690	Kain	80
31715	Davis	200
31721	Davis	250
31725	Brewster City	650
31742	Sundale Orchards Inc.	750
31753	Madden	100
31763	WA Parks Maryhill St.	900
31764	WA Parks Maryhill St.	100
31776	K B Alloys Inc.	75
31793	Auvil Fruit Co. Inc.	3850
31813	H P Montgomery Trust	2000
31832	Pateros City Parks	500
31858	Tiedeman	10
31859	Miller	315
31871	West	3500
31882	Knowles	30
32097	R I F Dev. Co.	920
32098	R I F Dev. Co.	20
32099	R I F Dev. Co.	50
32100	R I F Dev. Co.	330
32391	Crane & Crane Inc.	25
32839	Priest Co. Inc. Priest	455
32841	Priest Co. Inc. Priest	3653

**TOTAL AMOUNT OF GROUNDWATER REQUESTED = 95.89 cfs or 43,033 gpm**

**TOTAL AMOUNT OF WATER REQUESTED (surface and ground) = 928.9 cfs or 416,917 gpm**

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FOR IMMEDIATE RELEASE March 14, 2001

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Governor Gary Locke

OUR GOVERNOR

Office of Governor Gary Locke  
**FOR IMMEDIATE RELEASE - March 14, 2001**

Contact: Governor's Communications Office, 360-902-4136

OUR FIRST LADY

Alt Contact: Mary Getchell, Department of Ecology, 360-407-6157

## Locke announces statewide drought emergency

SERVING WASHINGTON

ALDER LAKE - The state of Washington can survive its worst drought in at least a quarter-century if neighbors help their neighbors, Gov. Gary Locke said today as he authorized the Department of Ecology to declare a statewide drought emergency.

THE NEWSROOM

He added swift passage of his proposed legislation to bring Washington's archaic water laws into the 21st century also would provide important new tools to fight the drought.

FYI WASHINGTON

Locke noted that the state's snow pack is at just 50 to 60 percent of average for this time of year, which will sharply reduce the amount of runoff into streams this summer. In fact, the flow in the Columbia River for April through September is expected to be less than 57 percent of average.

PUBLIC SCHEDULE

Just yesterday, more than 30 rivers in Washington experienced record low flows - all but one of which is in Western Washington. For example, the daily flow in the Columbia River at The Dalles was 42 percent of average; the Cowlitz River, 37 percent of average; the Skagit River at Mt. Vernon, 44 percent; and the Wenatchee River, 35 percent.

SEARCH

"This already is the worst drought in our state since 1977, and it's only March," said Locke. "We'll probably beat that record soon."

CONTACT

To illustrate how low water levels already are, Locke and other state officials announced the drought emergency from the shores of Alder Lake in eastern Pierce County - a shoreline that is widening as the water level falls rapidly.

HOME

"For anyone who thinks a major drought cannot happen in the Evergreen State, this drought is real and the effects are going to be real," said Locke. "We are facing an extraordinary situation that demands the full attention and cooperation of all citizens."

"We will need neighbors to share with their neighbors. If a city or a farmer has water that they can do without, then please consider loaning or leasing it to a city or farmer who doesn't have enough," said Locke. "Working together, we can keep our fish swimming, our farmers in business, and our citizens from going thirsty."

The emergency declaration immediately activates several tools the Department of Ecology can use to ease the effects of the drought: emergency water permits, temporary transfers of water rights and financial assistance.

Ecology Director Tom Fitzsimmons said his agency probably will grant few, if any, emergency water permits because there simply is no additional water to allocate in many parts of the state. Rather, he expects that temporary transfers of water rights will be the most-commonly used tool this year.

Ecology is using money from a special drought account to add staff to quickly process requests for water-right transfers. The transfers could be used to keep water in streams for fish, to provide water to communities that don't have enough water for their businesses and residences, or to help keep farm crops from dying.

To help determine where transfers are most needed, the Department of Fish and Wildlife is identifying where fish will be at greatest risk from the drought.

Also, the Department of Agriculture and the Conservation Commission will help match up farmers who have excess water with those who need water to save their crops. This "match-making" will be especially important for people who have interruptible water rights that may be cut off this summer because of low flows in the streams from which they draw their water.

The drought account currently contains \$5.1 million, which Locke said will be spent to purchase or lease water rights to keep rivers and streams from drying up; to make agricultural irrigation systems use water more efficiently; and to help cities and towns keep water flowing to businesses and homes.

The Governor's Office is working with the state's congressional delegation and the National Marine Fisheries Service to obtain federal money to expand this program.

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Other state agencies also are taking immediate steps to address the drought.

The Department of Health is surveying local water utilities to determine whether they anticipate water shortages this summer.

The Department of Natural Resources is advising forest residents about how to protect their property from forest fires. The Office of Community Development is examining its many grant programs to determine whether additional money is available to ease the effects of the drought on businesses and communities. The Department of Ecology will step up its efforts to prevent illegal water use.

"These actions and this money will not take away all the pain or restore our normal water supply - the problem is too severe for that," Locke said. "We will minimize the pain as much as possible, but everyone needs to help by using water wisely and efficiently."

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### Related Links:

- Drought Declared in Washington
- Forest Fire Prevention
- Northwest River Forecast Center
- Water Supply Forecasts
- Natural Resources Conservation Daily Snow-Precipitation Update
- Washington Current Streamflow Conditions

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## River watch: Is Columbia tapped out?

By Mike Stark

Thursday, November 16, 2000

In a move to help imperiled salmon runs, a Seattle-based environmental group says Washington state should stop allowing water to be diverted from the Columbia River.

The Center for Environmental Law and Policy and other conservation groups on Wednesday petitioned the state's Department of Ecology, asking the agency to put a moratorium on new water withdrawals from the river.

If the state denies the request, a lawsuit is a possibility, according to Kristie Carevich, an attorney with the group.

The issue of flow and water rights continues to be a contentious one in the Pacific Northwest. For the past four years, flow rates have dipped below federal targets in the Columbia and Snake rivers, where more than a dozen salmon and steelhead species are listed on the federal Endangered Species Act.

Those targets are meant to estimate how much water is needed to push salmon toward the ocean. Slower water means temperatures in the river can rise, water quality suffers and young salmon have a tougher time migrating, Carevich said.

Meanwhile, Washington is under increasing pressure to allow more water to be diverted from the Columbia. There are about 400 applications pending for water appropriations, including many for eastern Washington farmers looking to irrigate their crops, according to the department.

Adding to the mix are lawsuits filed in late October by cities and irrigators in eastern Washington to speed up the processing of water rights applications.

The Department of Ecology closed the Columbia and the Snake to new water withdrawals in 1992 to study whether the river could support new water uses. The department hasn't completed its studies, but the state legislature in 1997 told state officials to start processing water requests again.

Carevich said it's a mistake to allow more water to be taken from the Columbia, especially at a time when British Columbia, Idaho and the federal Bureau of Reclamation are making efforts to return water to give endangered salmon a boost.

"It just doesn't make any sense," she said, adding that Washington is also funding measures to improve stream flows. "Yet it's about to go against that."

In a letter to Tom Fitzsimmons, the ecology department's director, the group said that further water appropriations would have the state "pushing these species closer to extinction and ignoring its responsibilities as a steward of Washington's water resources."

They say that the federal Fish Passage Center, created by the Northwest Power Planning Council to monitor fish counts and water flows on the Columbia and Snake, has documented a direct correlation between higher flows and salmon survival.

But Mary Getchell, a spokeswoman for the ecology department, said there are uncertainties in linking salmon survival with river flows.

"We absolutely believe that water that's cool and clean is necessary for the survival of

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salmon," she said. "But as far as in-stream flow, the science is unsettled on the Columbia River ... Those are very scientific policy issues that the Department of Ecology is wrestling with."

Carevich countered that the claim of uncertainty a delay tactic. "That dispute was created by a lot of people that want to hold off a decision." Getchell said the department will review the petition and then decide, with consultation from the legislature, whether to start a rule-making process to implement a moratorium. If so, it could take one or two years to come up with a final decision, she said.

The conservation groups, though, are calling for an immediate halt to water appropriations on the Columbia. A new report from the Center for Environmental Law and Policy, entitled "Columbia River Vision," says there simply isn't enough water in the Columbia and its tributaries to meet "fish-critical needs."

"This petition should be a wake-up call to those claiming that the Columbia Basin salmon can be recovered without significant change," said Rob Masonis of American Rivers, one of the groups that filed Wednesday's petition. "We should focus on identifying solutions to the challenges we face, such as improving water use efficiency and finding alternative means of providing the economic benefits of the lower Snake River dams."

Other groups filing the petition were Friends of the Earth and WaterWatch of Oregon.

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# Letter 10 Exhibits

Group seeks Columbia water-rights limits

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TRI-COUNTY ENDANGERED SPECIES ACT RESPONSE

## Group seeks Columbia water-rights limits

The Washington Ecology Department is considering requests from four cities for more access

By Nicholas K. Geranios of The Associated Press  
11/13/00

A Seattle-based environmental group is demanding that the state Department of Ecology allow no more water to be removed from the Columbia River system.

The great river of the West does not contain enough water to sustain endangered salmon runs, and demands for additional water rights should be rejected, according to the Center for Environmental Law & Policy.

The center will file a petition with the department this week asking that the agency fight lawsuits that demand more water.

"We're telling them that under the law, they cannot permit more water use," said Kristie E. Carevich, an attorney for the center.

A lawsuit was filed last month against the department by the city of Pasco and the Columbia-Snake River Irrigators Association. They want the state to accelerate the granting of new water rights.

The department has not seen the environmental group's petition and cannot comment, spokeswoman Mary Getchell said.

Getchell said the department would have to consult with the Legislature before enacting another moratorium on Columbia water.

In 1997, the Legislature told the department to start processing Columbia River water requests, which had been on hold since the early 1990s to help federally protected Snake River salmon.

The agency has not issued new water right decisions in central Washington.

This summer, the department appeared ready to approve a request by the cities of Kennewick, Pasco, Richland and West Richland for enough water to satisfy 50 years of growth.

The Center for Environmental Law & Policy challenged that request, and the state moved the case to the back of a long line. That was criticized as a way for the state to avoid making a precedent-setting decision.

The four cities contend their request would have lowered the water level of the Columbia by just 1 inch.

"Were the Ecology Department to justify approving any of the 100-plus requests based on an assertion that each water extraction in itself will have only a small effect on river flow, water use could be permitted right to the point where the river runs dry," The Center for Environmental Law & Policy said in a report released this month.

The report contends the department does not have a good estimate on how much Columbia River water is actually used by rights holders and cannot accurately measure the effect of future diversions.

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## Group seeks Columbia water-rights limits

It is known that substantially more water could be removed from the river under existing permits that aren't being fully utilized, the group said.

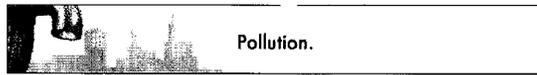
The possible removal of four Snake River dams to help salmon will not do enough for fish, the report said.

"Whether the dams are ultimately removed or remain in place, successful salmon recovery depends upon a sufficient quantity of water being available to flow down the Columbia and Snake rivers," it said.

Irrigation water removed from the river often is eventually returned loaded with farm chemicals, silt and other hazards to wildlife, the report said.

"Water quantity problems affect water temperatures, smolt travel time, and sedimentation rates -- key parameters that greatly impact salmon survival and recovery," it said.

# Letter 10 Exhibits



HOME IN-DEPTH INTERACT BUSINESS CENTER Site Index

## Washington farmers lease water rights to help fish

Tuesday, July 17, 2001  
By Environmental News Network

Mike and Kelly Moeur of Ellensburg, Washington and Robert and Shirley Stewart, who own property in Ellensburg, are leasing their water rights to the Washington State Department of Ecology to keep the water in streams for fish.

Much of the state experienced the driest winter in 71 years, prompting Governor Gary Locke to declare a drought emergency on March 14 that is still in effect.

Water flows are less than half of the average for this time of year in three of the state's major rivers including the Yakima River which runs through Ellensburg in central Washington. This year, the Yakima River will have only 44 percent of its average flow, officials predict. The rest of the state's largest rivers will have between 50 and 70 percent of their average flows.

For the past 30 years, the Moeurs grew timothy hay on their farm. This year, they have chosen not to withdraw water. Instead, they signed a temporary lease to keep approximately 408 acre-feet, or 13.2 million gallons, of water in Spring Creek and the Yakima River. The state Department of Ecology is leasing the water from the Moeurs for \$52,500.

For the past 25 years, the Stewarts also grew hay and pasture and raised cattle. Ecology will pay the Stewarts \$30,000 to keep approximately 232 acre-feet, or 7.6 million gallons, of water in the Yakima River this year.

Their water leases to the state were made possible by the first water law revisions in 30 years. The state has made water rights processing more flexible so water is available where it is needed most.

Two lines for water-right applications have been created -- one for new rights and one for changing or transferring existing water rights. This allows faster action on change or transfer requests that have been long stuck in line behind requests for new water rights.

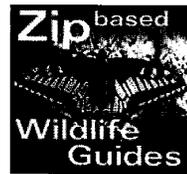
Family farms in rural areas are allowed to temporarily transfer their rights to other uses, helping others during the drought.

A tax incentive to conserve and re-use water was created. In addition, the taxes



Photo by Brian Pechter  
Courtesy U.S. Dept. of Agriculture  
**Aerial view of apple and pear orchards near Yakima, Washington.**

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paid-by utilities that conserve or reuse water go into the special fund to lease and buy water rights for endangered fish.

Talk Back  
Let us know what you think about this story in ENN's Forum Discussion Area.

"We should celebrate our collective success in securing long-needed water policy changes for people, farms and fish," Locke said. "It also should mark our collaborative, bipartisan commitment to move forward."

As a result, the Department of Ecology has \$3.5 million in state funds and authority to spend up to \$6 million in federal funds to purchase or lease water rights. People or businesses interested in donating, selling or leasing their water rights should contact Ecology's drought hotline at 800- 468-0261.

"We are so pleased that the Moeurs and Stewarts joined our efforts to help fish survive this year," said Ecology Director Tom Fitzsimmons. "Thanks to them and other people who are coming forward to offer their assistance, our fish populations have a better chance of making it through this incredibly difficult drought year."

Both fish and farmers are having a tough time this year. Farmers, who rely on about 75 percent of the water used in the state, are facing crop losses due to lack of water. Several runs of salmon and steelhead, already having a hard time surviving, are at even greater risk with low stream flows.

Governor Locke has made requests of U.S. Agriculture Secretary Ann Veneman to designate 13 Washington counties agricultural disaster areas due to devastating crop damage from June storms, and to declare six counties agriculture disasters as a result of drought. These designations would provide emergency low-interest Farm Service Agency loans to farmers and ranchers.

The July forecast by the National Weather Service indicates that the amount of water in several major Washington rivers will be significantly less than predicted in June.

The agency predicted that, from April through September, the amount of water in those rivers would be at least 40,000 acre-feet, or 13 billion gallons, less than the amount forecasted in June.

For the Columbia River, the region's largest, the estimated amount of water is down by one million acre-feet between the June and July forecasts.

"If the forecasts prove accurate, this is significantly less water than we were hoping would be in the rivers," said Doug McChesney, who coordinates the drought response for the Department of Ecology. "This forecast indicates that we may have serious low flow problems during the driest months, when water is needed both to irrigate crops and help fish migrate."

State officials are asking Washington residents to water their lawns every other day or let them go brown. Make sure water goes onto the intended plants and grasses, not sidewalks or driveways, officials advise.

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Natural gas pipeline shut down

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**SEATTLE POST-INTELLIGENCER**  
[http://seattlepi.nwsource.com/local/153387\\_pipeline20.html](http://seattlepi.nwsource.com/local/153387_pipeline20.html)

## Natural gas pipeline shut down

**Second rupture in eight months was too much for regulators**

*Saturday, December 20, 2003*

**By ROBERT MCCLURE**  
SEATTLE POST-INTELLIGENCER REPORTER

Safety regulators yesterday ordered the shutdown of a major high-pressure natural-gas pipeline serving Western Washington after it ruptured twice in eight months.

Williams Northwest Pipeline Corp. must inspect and replace portions of the half-century-old pipe, which runs from the Columbia River to Canada, roughly paralleling Interstate 5. The inspections and repairs must be finished within three years in the most populated areas, including Seattle and Bellingham, and be completed all along the 268-mile route within a decade.

Inspectors were taken aback that the most recent rupture occurred even though they had ordered a 20 percent pressure reduction following the first incident.

"It's pretty significant," said Kim West, senior pipeline engineer for the state Utilities and Transportation Commission. "Never has there been a pipeline have another incident after the pressure has been reduced."

The initial break occurred May 1 near Lake Tapps in Pierce County, causing the evacuation of about 30 homes, a grocery store and an elementary school.

Tests later showed that the metal had corroded under the stress of gas pressure.

Tests are not yet complete on the section of pipe that ruptured last Saturday in southern Lewis County between Longview and Chehalis. But a dark stain there "is indicative of corrosion," said the shutdown order by the U.S. Office of Pipeline Safety.

At least twice during the 1990s, leaks along the pipeline's route in Washington were attributed to corrosion. The pipeline in Oregon experienced 22 failures near Oregon City in 1994 under similar circumstances, the shutdown order said.

The shutdown is highly unlikely to affect delivery of natural gas because of other pipelines in the state, according to Williams, a natural gas transportation and production company that transports 80 percent of Washington's natural gas.

Williams also must inspect its other two major transmission lines, one running alongside the pipeline in question and the other a large spur that runs to Goldendale in Klickitat County.

"With two incidents in succession on the same section of pipe, needless to say, we're concerned and that's why we're going to do an inspection," said Williams spokeswoman Bev Chipman.

The break in the line near Lake Tapps caused a booming sound and the one last week caused a loud hiss, but in neither case did the escaping gas explode. That has happened in the past because of land movement and construction accidents, causing huge fireballs.

Chipman said that since the rupture at Lake Tapps in May, "We've been inspecting it pretty aggressively" and that the company had voluntarily idled the line by the time the shutdown order was made yesterday.

Damon Hill, a spokesman for the Office of Pipeline Safety, said the expensive replacement of pipeline won't be required in sections where the company can demonstrate through integrity tests that it isn't needed.

"We're not asking them to replace every inch of the pipeline," he said.

The shutdown takes on more gravity considering that Williams is the same company behind a proposed pipeline from Cherry Point near Bellingham to Vancouver Island, said activist Fred Felleman, whose environmental group Fuel Safe Washington is pursuing a legal challenge to the project.

Natural gas pipeline shut down

Page 2 of 2

The gas line would start near important herring-spawning beds at Cherry Point and traverse waters frequented by orcas and other marine mammals near the San Juan Islands.

"This is a corporate-mentality indication of their approach to safety -- fix it when it breaks," Felleman said. "It's not the kind of corporate mentality we want putting a line through the heart of the killer whale habitat."

"To me, their promises that they'll do good in their next project don't hold water," Felleman said.

Chipman responded: "We have done numerous environmental impact statements on both the Canadian side the United States side. They all show it would have no impact on the environment. ... We spend millions of dollars on integrity management. It's our number one priority."

The worst pipeline disaster in Washington occurred in 1999 in Bellingham. It involved a pipeline carrying liquid gasoline, not natural gas. Some 237,000 gallons leaked into Whatcom Creek and exploded, killing two boys and a young man.

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*P-I reporter Robert McClure can be reached at 206-448-8092 or robertmcclure@seattlepi.com*

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# Letter 10 Exhibits

Final Approval  
Waste Treatment Plant  
July 8, 2002

- 45 7. The United States Department of Energy has elected to take a federally enforceable limit on  
46 the number of hours 5 steam generating boilers, 4 hot water boilers, a diesel fire pump and 6  
47 emergency diesel generators will operate each year.  
48  
49 8. The project will result in a potential to emit up to 156.9 tons of NO<sub>x</sub> per year.  
50  
51 9. A caustic scrubber has been determined to be Best Available Control Technology (BACT)  
52 for the control of NO<sub>x</sub> emissions from the pre treatment facilities.  
53  
54 10. Selective Catalytic Reduction (SCR) has been determined to be BACT for the control of  
55 NO<sub>x</sub> emissions from the LAW vitrification plant.  
56  
57 11. SCR has been determined to be BACT for the control of NO<sub>x</sub> emissions from the HLW  
58 vitrification plant.  
59  
60 12. Low NO<sub>x</sub> burners plus flue gas recirculation has been determined to be BACT for the control  
61 of NO<sub>x</sub> emissions from the steam and hot water plant.  
62  
63 13. Reduced operation and an on-road diesel fuel with a maximum sulfur content of 0.05% has  
64 been determined to be BACT for the control of NO<sub>x</sub> emissions from the emergency  
65 generators.  
66  
67 14. Reduced operation and an on-road diesel fuel with a maximum sulfur content of 0.05% has  
68 been determined to be BACT for the control of NO<sub>x</sub> emissions from the diesel fire pump.  
69  
70 15. The project is located in an area that has been designated Class II for the purposes of PSD  
71 evaluation. The nearest Class I Areas are identified in Table 1 below:  
72

Class I Area	Distance
Alpine Lakes Wilderness Area	85 mi. (137 km)
Goat Rocks Wilderness Area	88 mi (142 km)
Mt. Adams Wilderness Area	95 mi (153 km)
Mt. Rainier National Park	95 mi (153 km)
Eagle Cap Wilderness Area	115 mi (185 km)

Table 1

- 73  
74  
75  
76 16. The project is located in an area that is currently designated in attainment for all national air  
77 quality standards and all state air quality standards.  
78  
79 17. The ambient impacts of the proposed increase in emissions were determined with the EPA's  
80 Industrial Source Complex Short-Term Model Version 3 (ISCST3).  
81

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Boise Cascade Wallula  
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3. The proposed modifications to the RF3 and HFB are subject to the following New Source Performance Standards (NSPS) in Title 40 of CFR, Part 60 (40 CFR 60):
- (a) The RF3 is subject to Subpart BB of 40 CFR 60 for Total Reduced Sulfur (TRS).
  - (b) The HFB is subject to Subpart Db of 40 CFR 60 for Oxides of Nitrogen (NO<sub>x</sub>) and is subject to Subpart D for Sulfur Dioxide (SO<sub>2</sub>).
4. Boise plans to replace the slaker with a new and more effective unit, resulting in an emissions reduction; the evaporators will have no direct emissions to the environment. Since neither the slaker nor the evaporators will cause any emissions increases, the changes do not trigger New Source Review (NSR) requirements or additional NSPS applicability. The slaker emissions reduction has not been relied upon in the issuance of the permit.
5. Boise submitted a PSD application to Ecology for the proposed project on August 29, 2001. After receipt of additional materials in 2001 dated September 28; October 5; November 5, 16, 21, 26, 27, and 30; December 12; and in 2002 on January 23 and February 1, 5, and 6, the application was determined to be complete on February 12, 2002.
6. Changes in emissions resulting from the proposed modifications and estimated emissions from the modified and affected units at the mill, upon completion of the proposed modifications, are presented in Table A below. The proposed modifications are expected to result in increased emissions of Carbon Monoxide (CO), NO<sub>x</sub>, Volatile Organic Compounds (VOCs), TRS, and PM<sub>10</sub> in quantities greater than the significant emission rates (SER) specified in 40 CFR 52.21(b)(23)(i) and WAC 173-400-113(1)(d) for Prevention of Significant Deterioration (PSD) and WAC 173-400-112(1)(d) for nonattainment NSR. Consequently, with the exception of PM<sub>10</sub>, the project must undergo review pursuant to 40 CFR 52.21 and WAC 173-400-110 for each of the above criteria pollutants. PM<sub>10</sub> emissions are addressed under a separate state regulatory order, to be issued concurrently with this order.

Table A			
Emissions Increases <sup>1</sup>			
Pollutant	Past Actual Emissions (Most recent two years actual emissions – 1999-2000) (tons per year)	Future Potential Emissions (tons per year)	Net Change in Emissions for PSD Applicability (tons per year)
NO <sub>x</sub> (nitrogen oxides)	1059	1717	658
CO (carbon monoxide)	604	2847	2244

# Letter 10 Exhibits

PSD Permit  
Boise Cascade Wallula  
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page 3

Table A Emissions Increases <sup>1</sup>			
Pollutant	Past Actual Emissions (Most recent two years actual emissions – 1999-2000) (tons per year)	Future Potential Emissions (tons per year)	Net Change in Emissions for PSD Applicability (tons per year)
SO <sub>2</sub> (sulfur dioxide)	1869	1869	0
VOC (volatile organic compounds)	990	1261	272
TRS (total reduced sulfur)	14.4	32	17.4

<sup>1</sup> Emissions increases presented in Table A are from those emission units that have been modified or affected as a result of this project.

7. The VOC emissions increases are contributed by the associated emission units in the pulping and washing operation. The modified units do not contribute to any VOC emissions increases.
8. Best available control technology (BACT) is required for any individual emissions unit that contributes to the emissions increase subject to PSD permitting and that will be modified as part of the proposed project. BACT will be used to control NO<sub>x</sub>, CO, and TRS from the RF3; and NO<sub>x</sub>, CO, and SO<sub>2</sub> from the HFB. The BACT limit for SO<sub>2</sub> emissions from the HFB is found in the accompanying state regulatory order; BACT limits for NO<sub>x</sub>, CO, and TRS are contained in this order.
9. The proposed pollutant increases resulting from the project will not significantly impact air quality attainment under state or NAAQS:
  - (a) The proposed modification will not cause or contribute to pollutant levels in excess of state or NAAQS.
  - (b) The proposed modification will not cause or contribute to air quality pollutant levels above PSD increment thresholds in 40 CFR 52.21(c).
10. Dispersion models used for evaluating the ambient air quality impacts were AERMOD and ISC-PRIME for nearby ambient air quality impacts and the CalPUFF/CalMET system for distant, Class 1 area impacts. None of these models are EPA guideline models, but have been determined to provide superior performance to the equivalent models approved for use by EPA in 40 CFR 51, Appendix W.

## Central Area (concluded)

### Ozone

#### 1-Hour Ozone for 1998 (ppm)

Station	Location	1-Hour Maximums					
		1 <sup>st</sup> High Date	Conc.	2 <sup>nd</sup> High Date	Conc.	2 <sup>nd</sup> Day High * Date	Conc.
2000001A	Wishram, Columbia River Gorge	8/4	.079	8/4	.078	7/27	.077

\* 2<sup>nd</sup> Day High – Second day with the highest 1-hour average.

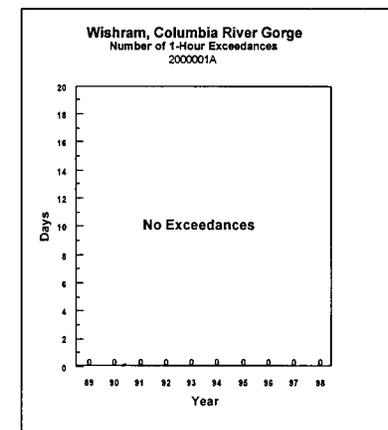
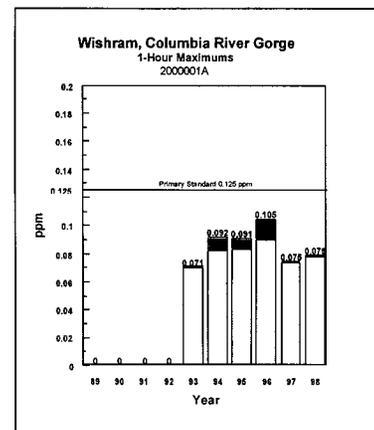
#### 8-Hour Ozone for 1998 (ppm)

Station	Location	8-Hour Maximums			
		1 <sup>st</sup> High Conc.	Date	4 <sup>th</sup> High Conc.	Date
2000001A	Wishram, Columbia River Gorge	.076	8/3	.063	7/26

#### Ozone for 1998

Station	Location	Period of Record	# Hours	# Days	% Valid Data
2000001A	Wishram, Columbia River Gorge	Apr-Oct	4516	188	88

### Ozone



# Letter 10 Exhibits

## Central Area

### Ozone

#### Ozone (ppm) for 1997 (8-Hour)

Station	Location	8-Hour Maximums			
		1st High Conc	Date	4th High Conc	Date
2000001A	Wishram, Columbia River Gorge	0.062	5/12	0.058	8/12

#### Ozone (ppm) for 1997 (1-Hour)

Station	Location	1st High		1-Hour Maximums 2nd High		2nd Day High*		# Hrs >.124	Exceedance Days
		Conc	Date	Conc	Date	Conc	Date		
2000001A	Wishram, Columbia River Gorge	.075	5/19	.074	8/14	.074	8/14	0	0

\*2nd Day High - Second day with the highest 1-hour average.

#### Ozone for 1997

Station	Location	Period of Record	# Hours	# Days	% Valid Data
2000001A	Wishram, Columbia River Gorge	Apr-Oct	5,090	214	99