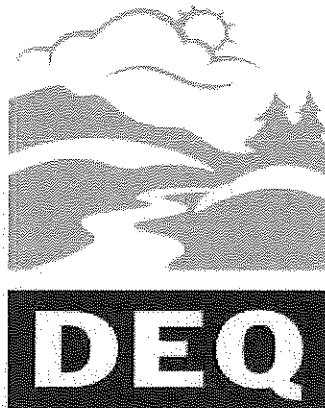


Part 3 of 3
OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 10/19/1989

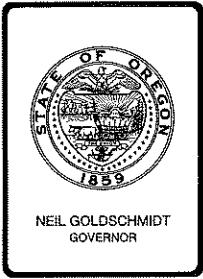


State of Oregon
Department of
Environmental
Quality

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Environmental Quality Commission

811 SW SIXTH AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

INFORMATIONAL ITEM

Meeting Date: October 20, 1989
Agenda Item: V
Division: Water Quality
Section: Industrial Waste

SUBJECT:

Update on Control Strategy for Container Nurseries.

PURPOSE:

At the March 2, 1989, EQC meeting, the Commission was told that the Department would present an update, at the November EQC meeting, of the strategy for controlling the pollutant discharges from container nurseries. Of particular interest was the permit or other look-alike vehicle which would be used for implementing the necessary controls. That is the purpose of this item on the agenda.

BACKGROUND:

The Tualatin basin is ideal for raising nursery stock. The nursery industry is a rapidly growing agricultural enterprise in the basin as well as other locations throughout the state. One area that has experienced exceptional growth over the past 10 years is "container nurseries". A container nursery is a nursery which grows trees and shrubs only in pots. When the trees or shrubs are small they are in small pots. As they get larger, they are transplanted into larger pots. This continues until they are marketed.

Growing areas are first graded and then the soil is covered with plastic or geotextile material, or is packed with a roller. Drain tiles are usually installed to collect irrigation and precipitation runoff. Normally, crushed rock is put on top of the drainage system and is used as a base in the growing area to facilitate drainage, operation of equipment, movement of stock within the nursery, and maintenance of irrigation pipes during the growing season. The packed soil may be treated with pre-emergent herbicides prior to laying down gravel.

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Page 2

The common irrigation practice is sprinkler irrigation. Some drip irrigation is used for extra large pots. Application of fertilizer is accomplished either by fertigation or direct application to the pots. The fertigation practice involves injecting liquid fertilizer directly into the irrigation sprinkling system. Direct application involves the manual application of slow release fertilizer granules to the pots.

Insecticides and herbicides are used occasionally to control plant disease and unwanted weeds during the growing of the nursery stock. During irrigation, some of the dissolved chemicals are carried to the tile drains and discharged directly to streams or to a recycle pond without the benefit of soil attenuation. When newly built growing areas are put into production, it is not surprising to find unacceptable quantities of herbicides and sediments in the irrigation runoff.

Some nurseries collect the irrigation runoff into a pond built at the lowest section of the growing area. Water is recycled from this pond to the irrigation system. Others construct the recycle pond by putting a dam across a stream. The drain tiles discharge directly into the in-stream pond and water is recycled to the irrigation system. Others do not recycle.

From time to time over the past few years, the Department of Environmental Quality (DEQ, Department) has received complaints concerning the quality and quantity of runoff from container nurseries. There have been claims on more than one occasion of damage to golf course greens when using irrigation water from ditches that received runoff water from a nursery. More recent complaints alleged that animals have died after drinking water from a ditch or pond which receives runoff from a container nursery. At least five complaints have been received this summer alone. Some complaints have been validated and some have not. Others are still being investigated. One farmer who organically grows vegetables and whose irrigation water may be impacted by runoff from a container nursery is very concerned about agricultural chemical residues which might get into his irrigation water.

In order to determine how many container nurseries there were in the state and how many of them were discharging to public waters, the Department conducted a survey of nurseries statewide in 1986. The results of the survey showed that out of the 1,577 nursery growers contacted, 819 responded to the survey and 232 were container nurseries. About 23 of the respondents indicated that they had direct discharges of irrigation runoff to public waters. Early in 1987, the Director of DEQ appointed a technical advisory committee to investigate the problem and recommend solutions. The technical advisory committee consists of representatives from

various state and federal resource agencies and the nursery industry.

Because of the enriched state of the Tualatin River, the Environmental Quality Commission adopted, in 1988, some special rules to address the discharge of nutrients to the sub-basin. The rule, Oregon Administrative Rule (OAR) 340-41-470 states: "In order to improve water quality within the Tualatin River sub-basin to meet the existing water quality standard for dissolved oxygen, and the 15 ug/l chlorophyll a action level stated in OAR 340-41-150, the following special rules for total maximum daily loads, waste load allocations, load allocations, and implementation plans are established." One component of these special rules is to set load allocations and waste load allocations for pollutants that the Tualatin River sub-basin can assimilate in order to improve and meet current water quality standards.

As part of these rules, the Environmental Quality Commission (EQC) established a compliance schedule for achieving the Total Maximum Daily Loads for ammonia-nitrogen and total phosphorus in the Tualatin River. Standards are to be met by no later than June 30, 1993. The Department, in cooperation with the Oregon Department of Agriculture (ODA), was to develop a control strategy to address the runoff from container nurseries within the Tualatin-Oswego Lake sub-basins by March 1989.

As part of the work plan to develop a control strategy, the Department monitored the discharge of selected container nurseries to define the impact of the irrigation runoff. The data showed that runoff from some of the monitored nurseries are not only discharging significant quantities of ammonia and phosphorus to public waters, but are impacting water quality with other pollutants in violation of state water quality standards. Some of these nurseries have been put on notice that improvements must be made.

CONTROL STRATEGY ALTERNATIVES

At the March 2, 1989, EQC meeting, a strategy was discussed with regard to controlling the discharges from container nurseries in the Tualatin Basin. The strategy discussed was to accomplish two things, as follows:

1. Address the immediate water quality problems caused by container nurseries discharging to recycle ponds constructed within surface streams and not meeting water quality standards.
2. Define the problems associated with container nurseries as related to the waste load allocations and the Tualatin sub-

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basin Total Maximum Daily Load and how the nutrient loads from the nurseries will be reduced to meet the basin standards.

The essential elements of the proposed strategy were to establish Best Management Practices (BMPs) for container nurseries which could be implemented state-wide. Through a grant from the Oregon Department of Agriculture, Oregon State University was to do some research on the fate of nutrients at nurseries to help develop BMPs. They are now in the second year of data collection. In addition, the Water Management Committee of Washington County, through the local Soil and Water Conservation District, proposed a program to conduct stream sampling within the basin to try to locate the most severe problems and then make recommendations on what needs to be done to correct them. Sampling is taking place at this time.

One of the essential elements missing from the strategy was the vehicle to be used for the implementation and enforcement of BMPs and regulatory controls. Normally the permit is used by the Department for that vehicle. However, the nursery industry is opposed to the use of a permit for this agricultural practice. The Commission directed the Department, along with the Oregon Department of Agriculture, to investigate other methods of control and come back to the Commission with a recommendation which would provide the same degree of accountability as a permit.

After giving considerable thought and study to a permit alternative, only one was found to provide the same degree of accountability. That was the Stipulated Consent Order. Although the Stipulated Consent Order is an enforceable tool and can be used in lieu of a permit, there are some differences which makes its use less attractive, as follows:

1. A fee schedule is associated with the permitting process. There is no fee schedule associated with the negotiation and drafting of orders. Therefore, if the order was to be used as a substitute for permits, the Department would receive no revenue to support this activity.
2. There is no established public participation process for orders. There is an established public participation process and appeal process for permits.
3. An order is usually considered as a temporary document to accomplish a goal within a specified period of time and then expire. A permit, on the other hand, is a document normally considered to be in force as long as the permitted facility

is operating. Activities allowed under permits are normally re-evaluated, revised if needed, and reissued every 5 years.

Based upon the above, the DEQ and ODA have decided that the vehicle to use for regulating discharges from container nurseries is the WPCF waste discharge permit. Some operations could be covered by a General Permit to be issued for container nurseries. Others would require an individual WPCF permit.

UPDATE ON CONTAINER NURSERY STRATEGY

The following is recommended as the final strategy for controlling the discharge of pollutants from container nurseries, not only within the Tualatin Basin but throughout the state:

1. Each container nursery with a discharge of pollutants to public waters will be required to submit a Water Quality Management Plan. The elements of the "Plan" are contained in Attachment A of this report.
2. The Water Quality Management Plan must show how and when BMPs will be implemented at the site. In the Tualatin Basin, BMPs must be implemented before June 30, 1993. That will be the date used for meeting BMPs statewide. Where severe water quality impacts are manifested, the schedule will be accelerated. The goal will be to implement BMPs as soon as practicable throughout the state. The Department is working with the Department of Agriculture on BMPs. A draft is included in this report as Attachment B.
3. Those container nurseries which cannot achieve total recycle of irrigation return flows by June 30, 1990, will be required to apply for coverage under a General Permit which will be drafted and issued for that purpose. The General Permit will require some minimal effluent monitoring and will have provisions for adding a compliance schedule for achieving the water quality management plan. The compliance schedule would require total recycle of irrigation return flows by no later than June 30, 1992. The General Permit would be distributed by ODA who would use part of the fees collected to review Water Quality Management Plans and to negotiate compliance schedules.
4. Those facilities which are now recycling with no discharge of irrigation tail water to public waters or who will commit to total recycle or reuse of irrigation tail water by June 1, 1990, will not be required to have a permit. Discharges of stormwater during unseasonably wet conditions and discharges during the winter months would be allowed.

5. Most container nurseries should be able to recycle all irrigation return flows so that no discharge occurs. However, if it is determined that some discharge of irrigation tail water will be necessary after June 30, 1992, as part of the BMPs for a particular facility, an individual Water Pollution Control Facilities (WPCF) Permit will be required. The WPCF permit would not only require a larger permit processing fee but would require much more monitoring and an annual compliance determination fee. The WPCF Permit will include extensive effluent limitations and monitoring requirements. Oregon State University is currently evaluating some of the nursery practices to determine the respective contribution of discharged nutrients from the various fertilization and irrigation practices. Hopefully, that research will provide some level of nutrients which can be expected to discharge when BMPs are followed. If BMPs will not reduce the nutrient load to acceptable levels, wastewater treatment may be necessary.
6. Because of in-stream recycle ponds or large volumes of tailwater discharging to small streams, some container nurseries both inside and outside of the Tualatin Basin are severely impacting public waters. These nurseries will be placed on an accelerated schedule for correcting water quality problems. It will be the intent of the Department or ODA to negotiate a compliance schedule for correcting those water quality impacts as soon as possible. If that cannot be accomplished, enforcement action may be necessary.

Water Quality Management Plans will be solicited from all container nurseries, beginning with those within the Tualatin Basin. The Department of Agriculture will negotiate compliance schedules and BMPs to be used at the individual nurseries. Those compliance schedules and BMPs will be attached to the General Permit issued to the individual nursery which is still discharging after June 30, 1990.

The Department will immediately initiate action for the necessary rule changes so that permits can be issued. It will be the intent of the Department to have all container nurseries in the Tualatin/Oswego Lake sub-basins and those others with known severe water quality problems on either a General Permit or individual permit by June 1, 1990. Container nurseries outside the basin but in other basins where TMDLs have been or are being developed would be next in priority.

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Approved:

Section:

Division:

Director:

Charles K. Ashbaker
Judith Taylor
Jim Hanan

Report Prepared By: Charles K. Ashbaker

Phone: 229-5325

Date Prepared: 27 September 1989

Charles K. Ashbaker:hs
IW\WH3661
Tualatin TMDL/Container Nurseries
27 September 1989

DRAFT

PROPOSED ELEMENTS FOR A CONTAINER NURSERY WATER QUALITY PLAN

(No runoff planned. If runoff occurs, see monitoring section)

MAPS:

- 1) Base maps for recording plan elements
 - a) Black and white vertical aerial photograph preferred
 - b) Assessor's maps
 - c) Maps generated by consultants
 - d) Scales for photographs should be 1"=660' for acreages over 40 acres and 1"=330' for acreages under 40 acres. Scales for assessor's maps may be 1"=400' or 1"=800'. Scales on consultant generated maps may be 1"=500' or 1"=1,000'.
- 2) Location or vicinity maps
 - a) USGS quadrangle topographic maps in the 7.5 minute series is preferred.
- 3) Map coverage should include area 1/4 mile from nursery property lines in all directions. It should also include and identify any streams or drainage ways that could receive runoff water from the nursery.

NARRATIVE:

- 1) General Information
 - a) This information should include the size of the nursery, general location and type of operation.
- 2) Irrigation Water
 - a) The narrative should describe the source of water, how it is diverted, how it is stored (if applicable) and how it is applied.
- 3) Drainage System
 - a) The drainage system should be described. Is it open, closed or combination. How was it installed?
- 4) Water Recovery System
 - a) Describe how it operates. If water storage ponds are a part of the recovery system, explain how the ponds were constructed and what measures were taken to prevent leakage from them. If the system overflows, where does the water go?
- 5) Chemigation
 - a) If fertilizers or other chemicals are added into the water, explain how this is accomplished. How do you monitor the residual chemicals in the recovered waters?
- 6) Cross Connection Prevention
 - a) If the irrigation system uses both clean and recovered waters, what measures are taken to prevent cross connection and backflows that have the potential of contaminating the clean water source?

- 7) Protection of Steams
 - a) If natural streams or ditches flow through or near the nursery property, what measures are taken to prevent discharge from the nursery into these streams?

BEST MANAGEMENT PRACTICES:

- 1) All best management practices planned or used should be listed as a separate part of the narrative and the estimated date that each will be installed. Wherever possible, all practices should be entered on the base plan map. (Example: If 10,000 feet of underground drainage tile is to be installed, enter the tile locations on the map.)
- 2) When practices have been installed and are in operation, record the installation date on the plan document.

SUPPORTING DOCUMENTATION:

- 1) Include all engineering plans relating to the handling of irrigation, drainage and recovered waters.
- 2) Include any practice specifications that are available for planned or installed practices.
- 3) Include any management plans or guidelines that have been developed for individual systems. Example: Irrigation water management plan that documents needs and how these needs will be satisfied by managing the irrigation system.
- 4) Any photographs that document installation of any of the practices or their operation.
- 5) Any water flow data or water quality data generated as a result of monitoring.

MONITORING PROGRAM:

- 1) If chemicals are added to the irrigation water, describe what type of monitoring is planned to determine concentration of chemicals in the water.
- 2) Describe method of measuring water diverted to the nursery.
- 3) Describe method of measuring water applied to propagation areas.
- 4) If runoff from the nursery property occurs, are flows measured?, is water quality monitored?, what water quality tests are being performed?

ODH \nps\contplan

Attachment B

CONTAINER NURSERY BEST MANAGEMENT PRACTICES

August 22, 1989

A. Irrigation tail water recirculation

1. During the irrigation season, to the maximum extent practicable, all irrigation return flows (tail water) shall be recirculated with no discharge back to public waters. Discharge during the irrigation season will be allowed in the event of unseasonably wet weather which exceeds the design capacity of the recirculation pond. The discharge shall be kept as small as possible and shall not exceed the amount of excessive rainfall.
2. Where total recirculation is not practicable, the following shall apply:
 - a. Irrigation tail water shall be recirculated to the maximum extent practicable.
 - b. No chemigation or fertigation shall occur at sites where any irrigation tail water discharges to public waters.
 - c. If irrigation tail water is used for another irrigation practice not associated with the container nursery, it will be considered equivalent to recirculation, provided no discharge to public waters occurs.
 - d. Discharge of irrigation tail water to public waters shall be regulated by a Water Pollution Control Facilities permit issued by the Department of Environmental Quality.
 - e. The permit will include discharge limits and monitoring requirements.
 - f. If the discharge of irrigation tail water is large in relation to the size of the receiving stream, some form of wastewater treatment may be necessary.

B. Recirculation Pond Construction

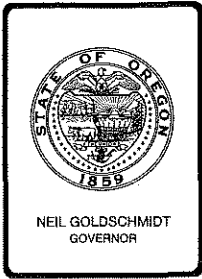
1. Recirculation ponds shall not be built within perennial streams. Any ponds already constructed within perennial streams shall be abandoned in accordance with a schedule negotiated with the Department.

2. Design criteria:

- a. Recirculation ponds shall be constructed with a maximum permeability of the sides and bottom not to exceed 2×10^{-7} cm/sec.
- b. Ponds shall be constructed with an emergency overflow to prevent dike damage in the event of overtopping.
- c. Recirculation ponds shall be designed with sufficient volume to hold all of the water which can drain back to the pond from the irrigation system plus all water which would be collected in a 10 year 24 hour storm event.
- d. Any pond which has a dike or dam over 9 feet in height or a capacity to hold at least 9.2 acre feet shall be approved by the Department of Water Resources.
- e. In some locations, monitoring wells may be required downgradient of recirculation ponds.

C. Soil Preparation in New Container Areas

(to be added later)



Environmental Quality Commission

811 SW SIXTH AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

ADDENDUM

Meeting Date: October 20, 1989
Agenda Item: V
Division: Water Quality
Section: Industrial Waste

SUBJECT:

Addendum to Informational Item on Update on Control Strategy for Container Nurseries.

DISCUSSION:

After having reviewed the Informational Item on container nurseries, the container nursery industry, including industry representatives who sit on the Department's Technical Advisory Committee for container nurseries, has given the DEQ some feedback on the report. Their general consensus was that the staff report was too negative toward the container nursery industry and that it lacked a discussion on achievements of the industry over the past year.

In addition, they are still very opposed to being regulated by permit and have expressed that they would be willing to pay fees for another way of regulation, if fees were the primary reason permits were chosen as the best way of regulating the industry.

SPECIFIC CONCERNS WITH EQC REPORT AS EXPRESSED BY THE INDUSTRY:

On page 2, paragraph 2 of the Informational Report, the potential for the discharge of pesticides is discussed. The industry points out that many container nurseries have no discharge and some discharge only during the wet season. At some nurseries, the irrigation tail water is being used for other off-site irrigation and in some instances it is being recycled and reused at the site. Those who use recycled water are very conscious of the level of pesticides and other chemicals in their irrigation tail water, since it is being collected and reused as irrigation water on their plants. If labeling instructions are followed, they feel that the amount of chemical remaining in the irrigation tail water

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will be minimized. Everyone is becoming more aware of possible water quality impacts.

Complaints received by the Department are briefly mentioned on page 2, paragraph 4. The industry considers it important to point out that many of the complaints have not been substantiated. That is true. Some have been determined to be invalid and others lack data to prove one way or the other. The examples were put in the report merely to indicate the level of public concern.

There is very little effluent data on container nurseries. The DEQ did some sampling on selected nurseries in 1988. The results of the sampling data were varied and ranged from high impact to no impact. In one case, the water leaving the nursery was better than the raw water being used, because of an upstream dairy which had caused water quality degradation. Because of the concentrated efforts of DEQ on the TMDL process, there was very little data collected in 1989.

A typo was pointed out in the last paragraph on page 2. The Technical Advisory Committee was appointed early in 1988 rather than 1987.

The committee pointed out an error in the report in paragraph 2, page 4. The study being conducted by Oregon State University is only in the first year of data collection rather than the second year.

CONTAINER NURSERY INDUSTRY ACCOMPLISHMENTS:

The container nursery industry have done much to educate the nursery industry on the management practices which can be employed to minimize the discharge of pollutants. They have done this at their local industry meetings and at their trade show. They are confident that there have been improvements made at many nursery sites the past 12 months. They are committed to eliminating or reducing, to the maximum extent practicable, the pollutants leaving their property. In fact, they find it beneficial to contain and recycle their wastewater.

Significant financial resources have been expended to address many individual producer challenges. The new container nurseries being constructed are doing it with containment of wastewater in mind.

It is important to note that the nursery industry has been an important resource for utilization of many of society's residual wastes. Sewage sludge and treated wastewater have been used by the industry in large quantities, in addition to compost and wood residues.

FEES FOR REVIEW OF MANAGEMENT PLANS AND PREPARATION OF ORDERS:

As the staff report indicated, the DEQ and the Oregon Department of Agriculture (ODA) determined that, of the two available methods of providing accountability, the permit was preferred over the Stipulated Consent Order. The primary reason is because, with the consent order, there was no method of defraying a portion of the costs to implement the program. Staff resources, either DEQ or ODA, would be required for reviewing the Water Quality Management Plans and negotiating compliance schedules. The industry has expressed a willingness to pay permit fees for the Order, in-as-much as the Order would be a permit substitute. With that being the case, there are certain advantages of the Order over the permit, in that no rule changes would be necessary because the program could be implemented within the current rules of the DEQ, including the current fee schedule. In addition, we would have the support from the industry in implementing the program. The value of that support would be immeasurable.

REVISED STRATEGY OF DEQ, ODA, AND THE TECHNICAL ADVISORY COMMITTEE:

After consulting with the Technical Advisory Committee and getting a showing of support from the industry, particularly with regards to the payment of fees, the DEQ and ODA are comfortable with using the Order as the vehicle to be used for regulating container nurseries, in lieu of using the permit as suggested in the original staff report. Therefore, we are prepared to implement the following:

1. Each operator of a container nursery which will have a discharge to public waters, between May 1 and October 31, after June 1, 1991, would be required to submit a Water Quality Management Plan which would include a proposed time schedule and methodology for eliminating the discharge of pollutants by June 1, 1993. A fee equivalent to the permit fee would be submitted with their "plan". The fee would be collected by or transferred to ODA, who would review the plan and negotiate the final schedule.
2. The time schedule and control measures would be incorporated into a Stipulated Consent Order. The Order would expire June 1, 1993. The order could also include some monitoring requirements.
3. Those container nursery operators who would commit to eliminating the summer discharge of pollutants by June 1, 1991, would not be required to have an order or pay the fee. They would be required to submit a management plan to show

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how they would accomplish the elimination of pollutant discharges.

4. Those facilities which have no discharges during the summer months at the present time would be required to submit nothing other than a statement confirming that they have no pollutant discharges.
5. Facilities with current in-stream ponds or other discharges severely impacting water quality, would also be put on a consent order, but the time schedule may be accelerated.

Approved:

Section:

Division:

Director:

Charles K. Ashbaker
Suzanne Taylor
Bill Ham

Addendum Prepared By: Charles K. Ashbaker.

Phone: 229-5325

Date Prepared: October 17, 1989

Charles K. Ashbaker:kjc
IW/WJ2338
October 17, 1989

GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431, FAX (503) 228-9473

October 9, 1989

Environmental Quality Commission (EQC)
William P. Hutchison, Chairperson
c/o Mr. Fred Hansen, Director
Department of Environmental Quality (DEQ)
811 S. W. Sixth Avenue
Portland, Oregon 97204

Dear Mr. Hutchison, Mr. Hansen and Members of the Commission:

Re: Ocean Proteins, Inc.
Charleston, Oregon
Notice of Violation and Intent to Assess
Civil Penalty: No. AQ-SWR-89-169

The subject notice was received in this office, as Managing Agent for Ocean Proteins, Inc., on October 2, 1989, which prompts my writing directly to the Commission, due to the seriousness of the entire situation, which in our opinion, is totally unjustified. Our reasons for feeling this way are outlined in the body of this letter, as well as the report prepared by our consulting engineers, Lambier/Stevenson Engineers, P.E., Portland (Enclosure #1). Lambier/Stevenson (LSE) has been involved since the inception of the corrective process which this office has implemented to-date.

Our sense of anger, outrage and total frustration as a result of having received the Notice, a copy of which is enclosed for reference (Enclosure #2) is aggravated in large part as we have repeatedly and continuously kept the DEQ informed as to the steps being taken by this office to respond to every requirement, time frame and request for information requested of us by the Department.

While some of the following information will repeat the content of our engineer's report (Enclosure #1), it is important, in my opinion, that various elements of the entire process that we have been subjected to be emphasized to show that at all times, without question or protest, Ocean Proteins, Inc. has responded positively and in a timely manner to the requests, instructions, requests for meetings, and scheduling requested by the Department.

Background Information

Ocean Proteins, Inc. is a fish meal processing plant, the only one of its kind in the State of Oregon, and one of only a handful on the Pacific Coast. The plant takes fish waste from the local processors in Coos Bay, Charleston and Newport, and disposes of the meal

in a manner that totally utilizes the waste and converts the waste into a high grade dry protein meal and liquid protein oil used for agricultural, livestock and various other feeding operations.

The problem which our plant addresses is the disposal of fish processing waste that totals millions of pounds every year, which is difficult for the fish processors to dispose of in a legal and economical manner.

The plant of Ocean Proteins operates under an Air Contaminant Discharge Permit that has an opacity limit of 20%. Mr. Bispham's letter (Enclosure #2) is incorrect in that the opacity limit under which the plant operates is 20%, as set forth in a letter from Mr. Hansen to this office dated March 28, 1989, a copy of which is submitted as Enclosure #3.

In 1987, Ocean Proteins was asked by the DEQ to conduct a source test on the emission stack, as the DEQ had observed visually, not measured, an opacity level which at that time was estimated to be in excess of the 20% limit which the plant was allowed to operate under (Enclosure #4). You will note that we responded to representatives of the Department within 11 days of the receipt of the Department's letter and further indicated that we were prepared to conduct the emission source tests immediately, as well as taking additional steps to mitigate the situation, in advance of scheduling the tests.

The source tests were completed and sent to the DEQ in November, 1987, pursuant to the requests of the Department. We were then asked to prepare an engineering analysis as to the alternatives as to what could be done to bring the plant into compliance with its permit, which had as a limitation the 20% opacity level. Such a report was prepared and sent to the DEQ on March 22, 1988 (See Enclosure #5).

At no time did we question, delay or take any action that could be construed as "dragging our feet" in attempting to resolve the problem. ON the contrary, we responded to each and every request of the Department and adhered to each step that representatives in the Coos Bay office had asked us to take and kept the regional office totally informed of the actions being taken.

During 1988, this office retained Lambier/Stevenson Engineers, P.E., to design a system to reduce the opacity from an observed sighting of 30% to the existing permit level of 20%. Without any consultation or warning from any representative of the Department, this office received notification from Mr. Ray Potts of the Portland office of the DEQ that the opacity limit was being unilaterally lowered from 20% to 10%, a change of 50%! No reason was given to this office, or any justification, even though the Department fully knew that we were in the design phase of compliance, attempting to meet the requirement of 20% for which no one, ever, had ever indicated once we began the design phase, that the parameters were going to change, let alone by a factor of 50%. The notification that a change was being made in the opacity limitation in an amended permit was given in December, 1988, even though we had been in the design phase and equipment submittal phase for several weeks.

Along with Mr. Greg Lambier, P.E. principal, Lambier/Stevenson Engineers, I met with Mr. Potts in late 1988 and early 1989 in an attempt to determine the reason for the opacity limit set forth in the original (i.e., 20%) having been reduced to 10%. Through our engineer, we specifically requested that the opacity limit be left at the level that we were found to be in violation of, that is 20% (See Enclosure #6).

October 9, 1989

Prior to this time, we had, on our initiative, sent the plans prepared by Lambier/Stevenson out to bid and obtained 4 different proposals in September/October, 1988. Those plans and specifications had always been based on meeting the opacity limit of 20%, although we were trying to better the permit limitations.

Since no one in this office, Ocean Proteins, or LSE knew the role that Mr. Potts was playing, we contacted our contact in Coos Bay, Mr. Reuben Kretzschmar, with whom we had been dealing, since the departure of the original DEQ regional supervisor, Mr. Bruce Hammon. Mr. Kretzschmar indicated he was not aware of any change in the permit limitations.

At this point, is it not unreasonable to ask the Commission as to whether we were wrong in seeking a solution that would meet the criteria of the Department that we had been found to be in violation of, i.e., 20% opacity? After all, our charge to the engineering firm whom we were paying and to the four (4) vendors bidding the project was to meet the 20% opacity limit.

Then, without notice or warning from the Department, our office on January 30, 1989 received a letter from Mr. Lloyd Kostow, Program Operations, an individual whom we had never met, spoken, had any discussions, and who had not been involved in our one (1) meeting with Mr. Potts, indicating that the opacity level on the plant was being unilaterally lowered to 10%. This was after our plans had been completed to meet the 20% permit requirement and after we had sent the plans, that we had shared with DEQ, to the vendors to bid on the project!

The reason given for the reduction by both Mr. Potts and Mr. Kostow was that "it was the prerogative of the DEQ under existing regulations" that a discharge permit could be changed!

Whether the regulation allows the Department to make a change in the parameters of any permit itself is, in my opinion, irrelevant and basically nonsense. At no time prior to our meeting with Mr. Potts in late 1988 in Portland had anyone indicated to us that the parameters under which we were working were going to be changed. Not one single word or indication! The Department knew that we had retained an engineering firm and were working on meeting the terms of the original permit since the summer of 1988. Those terms were established as meeting the conditions of the permit - an opacity level of 20%.

Thus, as I believe each of you would deem reasonable and prudent, I began a letter writing campaign to get the opacity limitation left at 20%.

How can anyone be told that one is in violation of a permit, instruct the violator to correct the situation to bring the plant into compliance with the already established permit limitation of 20% opacity, instruct the violator to correct the situation, anticipating that the violator will work to achieve the stated limitation, and then change the rules in the middle of getting equipment bids after having spent thousands of dollars to design a system that would achieve the original permit level of 20%, and then reducing the limitation by a factor of 50% without notification?!#

Finally, after nearly 2½ months of writing various letters and telephone calls between myself and Mr. Kostow, Mr. Hansen's letter of March 28, 1989 (Enclosure #3) was received.

I think, under the reasonable man test that would apply in any matter that went to litigation, it would be found that I acted prudently in not allowing equipment to be manufactured under the original objective of meeting the permit requirement of 20% when I was, after the fact, being told to meet an entirely new limit of 10%, after the system had been designed and gone out to bid.

Any delay during the 2½ months in early 1989 that I was attempting to get somebody, anybody, in the Department to listen to reason, in getting the manufacturing of the equipment to solve the problem underway must be assumed by those who changed the rules in the middle of our trying to meet the original requirement - and that responsibility is the DEQ's, certainly not this office's.

When Mr. Hansen's letter was received on March 28, 1989, we continued our previously stated commitment to solve the problem by releasing the manufacturer to build the equipment. I even took the step of sending to Mr. Kostow copies of our purchase orders and initial deposit checks (total over \$25,000.00) in order that he knew exactly what we were doing (Enclosure #7). Any reasonable individual could see at that time that the original time frames would not be met. Again, I didn't cause the delays; but any reasonable and prudent business person would not go forward while the entire issue of what opacity limit we were going to be asked to meet was being resolved by the Director of the DEQ!

Throughout this entire process, our engineering firm continued to keep Mr. Kretzschmar informed as to what was occurring, time frames involved and the general ordering process. Our engineer is willing to testify as such.

At no time in my conversations with Mr. Kostow or in our engineer's conversation with Mr. Kretzschmar, did anyone, anyone, from the Department express any concern about the time frames we were working under. In fact, we had the principal of the manufacturer of the equipment, Mr. Blaine Sorenson, Geoenergy International Corporation, communicate with the Coos Bay office of the DEQ.

In addition, I continued to keep Mr. Kostow informed with copies of plans and the overall status of the project (See Enclosure #8 as an example, dated June 16, 1989). Again, at no time did anyone from DEQ express concern, objections, or literally anything over the time frame. If certain dates or concerns over dates existed, then why were we not informed? Perhaps it is because everyone understood that any delays were as a result of the time it took to retain the original opacity level at 20%, which had been established from day 1. At no time did Mr. Kretzschmar or Mr. Kostow communicate any concern over the time frames we were working under, or instruct us to make a formal request for an extension of time.

For those of you on the Commission who have had an experience with heavy equipment manufacturing, especially specialized design equipment for emission control processes, you know that once the order has been placed, there isn't a great deal that those of us who place the order can do. Since Mr. Kostow through receipt of copies of checks on equipment order deposits knew that the order had been placed, and through our engineer's communications with Mr. Kretzschmar, I cannot see how we can now be threatened and subjected to threats of fines, civil penalties and the like.

The schedule disclosed to Mr. Kostow on March 7, 1989 (Enclosure #9) as transmitted to him in a letter of that same date, showed a completion of August, 1989, although we had not yet received any final word as to the opacity limit we were to meet, even though the original plans had been placed out to bid. Again, there was no objection from Mr. Kostow or Mr. Kretzschmar. No indication was received that any other formal notification of a schedule change was required other than what we had done. Nothing!

Adding a 2½-3 month delay for ultimate resolution by the Director for the opacity issue pushed project completion until late October/early November. The DEQ has always been aware of this based on our communicating to all parties in writing.

On August 17, 1989, some representative of DEQ visited the plant and proceeded to send this office a letter dated August 25, 1989, submitted as Enclosure #10. The following comments are offered to that letter:

- (1) Mr. Kertzschmar's letter of August 25 was responded to by our engineer, Mr. Lambier, immediately on August 29, 1989 (See Enclosure #11).

Mr. Kretzschmar's letter was of a total surprise as he has never communicated to me any displeasure whatsoever as to the progress we've been making and the time frames outlined in correspondence which has been sent directly to him in Coos Bay. Never!

In addition, Mr. Kretzschmar has known that the equipment being manufactured has been on order since March, 1989. We even pointed out to him that we had taken delivery of the fan component of the total equipment package, an integral part of the total improvements, and which is currently on-site in Charleston.

Mr. Kretzschmar never responded to Mr. Lambier's letter of August 29, 1989.

- (2) I personally responded to Mr. Kretzschmar's letter when I returned to the office from having been out-of-town, in a separate letter dated September 6, 1989, submitted as Enclosure #12).

I have never heard one word from Mr. Kretzschmar after responding to him, or the courtesy of receiving one telephone call from him.

To suddenly be hit with a Notice of Violation and Intent to Assess Civil Penalty is non-sensical.

Throughout the entire process, from the first day that we were notified of a potential violation in the opacity level of the plant, we have dealt with seven (7) different employees of the DEQ. We have been required to deal with a unilateral changing of the original opacity limit that we had been instructed to meet, which took 2½ months to resolve, after the system had been designed. We have repeatedly communicated and informed employees of the Department, even taking the unusual step of sending copies of deposit checks for equipment orders. We have not received any response communication except the recent threats.

Frankly, I can't do any more than what this letter shows we have done, and will not do any more than what I am doing now.

I will not be threatened after what we have done, are doing and what we have communicated, especially when we receive no communication in return except threats.

Financial Commitment

The sole shareholder of Ocean Proteins, Inc., is Mr. John Gray, a name synonymous with the environment in the State of Oregon. No one individual in his lifetime has done more for Oregon than Mr. Gray.

During the first 8 months of 1989, Ocean Proteins, Inc. has had net pre-tax profits before depreciation of slightly less than \$10,000.00. That is before depreciation! In other words, as you know, the company during the current calendar year did not generate sufficient funds to replace its own equipment.

That's not your problem, it's mine, but the Commission must begin to understand that the Department has to understand elementary economics and work with those who are trying to solve their problems such as Ocean Proteins is attempting to do, as evidenced by the enclosures to this letter. The total project to reduce the opacity from the original observation of 30% down to the permit level of 20% will cost in excess of \$100,000.00, including engineering fees, test reports and the like.

If the company were owned by any other citizen of this State, who did not have the commitment that Mr. Gray does as an individual, it would be necessary to shut the plant down, as it is not generating sufficient funds to build the new emission precipitator. The decision to proceed with the plan as we have repeatedly and continuously disclosed to numerous DEQ employees as set forth in this letter is certainly not an economic one, for if it were being evaluated on that basis, the plant would have been shut down long ago.

If the Department is going to seek the cooperation of the private sector, what more and what better example is there than what we are trying to do and what Mr. Gray is showing by contributing his personal capital in cash to rectify a situation in order to keep the plant open and meeting its 20% opacity limitation?

I would like the Commission, through the Chairperson or Director of the Department, to specifically tell me how we could have done anything more than what we are currently doing and as set forth in this letter:

- (1) The equipment is currently on a ship in transit from Sweden. I can't speed up the ship or customs;
- (2) How can I respond to Mr. Bispham's letter of September 29, 1989 (Enclosure #2) and its inconsistencies:
 - (a) He is totally incorrect in stating that we must meet a 10% limit. The limit is 20%, nothing less;

- (b) The Department has been informed for months as evidenced by this letter's applicable enclosures that we could not meet a July 1 deadline. For him to represent we haven't requested extensions does not address the facts;
- (c) His comments about the need to communicate immediately about any delays are extremely embarrassing to the DEQ based on what we have communicated in the past. We have dealt with so many different people I find it ludicrous for Mr. Bispham to insinuate that we have not communicated in a timely manner.

If there is an organization that has not communicated, even within its own organization amongst its own employees, the enclosures to this letter demonstrate that it has been the Department.

To not receive any type of response from the Coos Bay office, after both myself and our engineer specifically responded to the Department's letter of August 25, 1989 (Enclosure #10) is inexcusable;

- (d) Mr. Bispham is not in touch with the grain loading issue, as Mr. Lambier pointed out the DEQ's own miscalculation of that number in correspondence directed to the Department in December, 1988 (See Enclosure #1, page 2 of enclosure);
- (e) The violation will obviously continue until the equipment installation is installed. Mr. Bispham says that if it continues for five (5) days after this letter, the fine can be assessed, but then he says that we can have until October 31. Which is it, and frankly at this stage, basically what can I do if the equipment is in transit? What can I do if no one in the Department reads letters early in 1989 setting forth the schedule?

What can I do when opacity limits are unilaterally cut in half once the equipment has been designed without warning?

What can I do when no one in the Department expresses concerns over previously disclosed schedules and do not respond to correspondence sent to them by this office and our engineers?

How would each of you act, react, or attempt to comply? Have any of you been thorough a process such as I have described in this letter? What could I have done reasonably differently?

Frankly, I don't know what more to say. As one who worked in the early 1980's for the State of Oregon, I am at a total loss as to why we've been subjected to the most recent threats of Mr. Bispham, one more individual with whom we have had absolutely no dealings in the past. When I individually worked for the State in the Housing Division, I attempted to be responsive to the needs, requirements, and limitations of the private sector in order to get the job done, and with a realization that it was always the private sector that was providing the revenue stream to support State government and its employees.

If we had refused to take action, keep the Department informed and basically ignore the countless items that we have been asked to do and subjected to throughout this situation, I could understand and would support the issuing of threats, civil fines and penalties.

As I hope all of you know, Chapter 340, Division 12, Enforcement Procedure and Civil Penalties defines the goal of enforcement to be as follows:

- ".... (a) Obtain and maintain compliance with the Department's statutes, rules, permits and orders;
- (b) Protect the public health and the environment;
- (c) Deter future violators and violations; and
- (d) Ensure an appropriate and consistent statewide enforcement program...."

If we were not doing the best possible job of keeping 7 different employees of your Department informed as to what we have been attempting to do and actually taking the steps necessary to bring the plant into compliance with an overall plan which the DEQ has never objected to nor expressed any concern with, then I could see the threats.

To have Mr. Bispham close his September 29, 1989 correspondence by saying that "I look forward to your future cooperation" is insulting to say the least. My response to the Commission and Department is "I look forward to any communication from the Department, because I sure haven't received any in the past."

Please tell me where I have fallen down and how I have:

- (1) Not communciated;
- (2) Not taken any action;
- (3) Not ordered any equipment;
- (4) Not shared plans;
- (5) Not provided time frames;
- (6) Not had our engineers and equipment vendors communicate directly with the Department's employees.

I cannot nor will I do anything more than what our office is doing to get the job done which we originally set out to do, with what has become little if any assistance from the Department. No amount of threats from the department will speed the delivery of a ship currently somewhere between Sweden and Portland.

The most disappointing and discouraging thing in this unfortunate matter is the realization that there is a total lack of communication, not from this office to the Department, but from the Department down to the level where the problem is being rectified.

The other central issue is whether the Department will take an objective look at its own inner workings and ask itself, how could it help a company resolve the situation of opacity if it weren't through the economic philanthropy of an individual of the integrity of Mr. John Gray. Are we as a State saying that if an operating entity cannot afford to correct a deficiency, that we merely shut it down? Where are the processors going to get rid of their waste if Ocean Proteins goes away? Does anyone care? What is the financial impact to the fish processors or does anyone care?

The goals of enforcement as set forth above are clear. Should the Department elect to proceed under the threats contained in Mr. Bispham's letter, please be advised we will vigorously defend our position and seek any restitution of damages that would be incurred. In the interim, we will continue to install the equipment as it arrives in this country, with or without the help of the Department, which as can be seen from this letter, has been solely lacking.

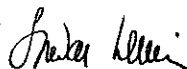
I am more saddened by the attitude of the Department than of my own anger and frustration in dealing with threats from those who have had no involvement or having any understanding as to what we have done and are continuing to do to meet our obligations to achieve the original opacity limit. We have always accepted the responsibility for correcting the situation, without question or challenge. How is that we can form institutional partnerships as set forth in the Governor's published summary, Oregon Shines, an Economic Strategy for the Pacific Century, forwarded as Enclosure #13?

I would welcome the opportunity of speaking with any of you or appearing before you in the applicable forum. We are addressing our responsibilities and correcting our shortcomings for which we assume total responsibility. It is time you determine how the Department can assist, not threaten, companies such as ourselves who live and work in this State. It is always ironic to me to see how much attention we pay to outside companies contemplating moving to Oregon, and yet, those of us who have been here, supply jobs and fuel state government through the taxes generated cannot get responses to our correspondence or reasonable assistance.

I hope I have struck a nerve which will make the system we all work under more equitable and smoother for those that follow us in the future and run into similar problems. There is no challenge to shutting people down; there is challenge to assist those of us who are trying to work within the system and still meet the regulations in a way that does not cause us to go out of business.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.



Edward L. Allis
President

ELA/jmg
Enclosures

cc: John D. Gray
Governor Neil Goldschmidt
Paul T. Bright
William E. Scarborough, Jr.
Greg Lambier, LSE, P.E.
R. Bruce Snyder, Hazard Management, Inc., P.E.
Fred Hansen, Director, DEQ
State Representative Jim Witty, Coos Bay
Paul Vogel, Executive Director, Port of Coos Bay
Larry Ivy, Deputy Director, Port of Coos Bay
Air Quality Division, DEQ
Environmental Protection Agency (DPA)
Reuben Kretzschmar, SW Region, DEQ, Coos Bay
Ray Potts, DEQ, Portland
Lloyd Kostow, DEQ, Portland
Department of Justice, State of Oregon
Thomas R. Bispham, Regional Operations Division, DEQ
Environmental Quality Commission:

William P. Hutchison, Chairperson - Portland
Wallace B. Brill - Medford
Emery N. Castle - Corvallis
Genevieve Pisarski Sage - Medford
William W. Wessinger - Portland

October 4th, 1989

Oregon State Environmental Quality Commission
C/O Grayco Resources

RE: Ocean Proteins Notice of Violation, No. AQ-SWR-89-169

Dear Commission:

Our client, Ocean Proteins, Inc. has received a Notice of Violation and Intent to Assess Civil Penalty, No. AQ-SWR-89-169, from the Oregon State Department of Environmental Quality for violation of its Air Contaminant Discharge Permit. Based on the facts there is no justification for this action. I would appreciate your review of the situation.

Ocean Proteins, Inc. is a fish meal process plant located in Charleston, Oregon. The plant reclaims waste products from nearby fish processors and processes them into a usable product; fish meal. The plant was cited for opacity violations in August of 1987. The citation, issued by Bruce Hammon, Environmental Analyst for the DEQ, required that the plant conduct source testing to demonstrate compliance with the permit requirement of 20% opacity. A source testing firm, BWR, was retained to conduct the necessary tests. Don Peters of the DEQ observed the testing and a report was submitted to the DEQ for review.

Source testing, conducted in October of 1987, indicated that stack emissions averaged about 30%. Based on these findings an air quality specialists, HMS, was retained to investigate the cause of the excessive emissions and potential solutions. A number of process modifications and trials were performed. The findings indicated that the opacity was resulting from condensed hydrocarbon compounds in the fish meal dryer exhaust. A report was submitted to the DEQ for review in March of 1988. Proposed solutions included a variety of modifications to the existing dryer exhaust gas treatment system.

An engineering firm, LSE, was retained to develop, select and implement alternatives for improving the dryer exhaust gas emissions control system to meet the 20% opacity requirement and other permit requirements. An analysis of treatment modifications and alternatives was conducted to determine the most effective approach for improving the system. The results of the study were presented in a report submitted to the DEQ for review in August of 1988. The findings indicated that no formal BAT has been established for fish meal plants. The recommended alternative included installation of a wet electrostatic precipitator, and replacement of existing ducting and fan.

A solicitation for proposals to supply the equipment was made in September of 1988. A copy of the solicitation was forwarded to the DEQ for review. Four proposals were received and compared. A summary of the results and an analysis of the proposals was submitted to the DEQ in October of 1988. A wet electrostatic precipitator, manufactured by Geoenergy, was recommended for the application. After reviewing the analysis of proposals, the DEQ regional office, represented by Reuben Kretzschmar, requested that a detailed description of the proposed improvements be submitted, in addition to the material already submitted, for review by the DEQ's air quality group in Portland.

A description of the proposed improvements, projected system performance, and approximate schedule were submitted together with the selected vendors proposal to the DEQ for review and comment in November of 1988. A possible error in the existing permit, for mass loading, was noted in the report. Equipment deliveries were estimated at 16 to 20 weeks.

LAMBIER STEVENSON ENGINEERS

319 S.W. WASHINGTON □ PORTLAND, OR 97204 □ (503) 223-4805

We were surprised to receive a revised ACDP permit from the DEQ in December of 1988. We contacted Reuben Kretzschmar and he advised us that the permit was revised in response to our most recent submittal. He had evidently not been aware that the permit was to be revised.

Reviewing the revised permit we noted that the new permit contained several errors. These errors were described in correspondence to the department in December of 1988. The errors included a mistake in the plant operations period, an error in the mass emissions calculations, an order of magnitude reduction in allowable grain loading and a halving of permissible opacity. The DEQ, Ray Potts, responded to the correspondence describing the errors by advising that in accordance with OAR, Chapter 340, Division 14, Section 30, that Ocean Proteins could request a hearing before the Commission by submitting a written request to the DEQ Director. No corrections to the permit were made.

In February of 1989 a request was submitted to Fred Hansen, Director of the DEQ, to review the situation and to revise the ACDP permit back to the original form used to guide the analysis, equipment selection and design of the proposed improvements. No justification or basis for the permit modifications had been presented by the DEQ and based on the engineers analysis and vendor information it appeared unlikely that new limits could be met. Ocean Proteins was hesitant to invest in additional air discharge treatment improvements unless some likelihood of success was possible. Our request was referred to Lloyd Kostow of the DEQ. No corrections to the permit were made.

In February of 1989 a formal request was submitted to the DEQ for a meeting with the Environmental Quality Commission to review errors in the Ocean Proteins ACDP permit. The DEQ, Lloyd Kostow, contacted Ocean Proteins by phone and advised them that the permit would be revised to allow the original 20% opacity to stand until the system had demonstrated ability to meet the more stringent requirement. An amended permit was received in March of 1989 confirming the previous communications. Errors in mass emissions calculations and grain loading were not corrected. The implementation schedule, originally prepared in November of 1988, was not revised to reflect the delay in project implementation resulting from the permitting errors.

A progress report was submitted to the DEQ in March of 1989, including Ray Potts, Reuben Kretzschmar, Lloyd Kostow and Fred Hansen. The progress report advised that Ocean Proteins was proceeding with installation of the wet electrostatic precipitator and other system improvements. A schedule was included, targeting August of 1989 for project completion. Both the cover letter and schedule noted that the schedule was aggressive and that the schedule may be exceeded based on availability of equipment.

A progress report was submitted to the DEQ, Lloyd Kostow, Ray Potts, and Reuben Kretzschmar, in May of 1989. The report included a description of progress and copies of equipment order information were included.

A progress report was submitted to the DEQ, Lloyd Kostow, Ray Potts, and Reuben Kretzschmar, in June of 1989. The report included copies of equipment drawings for the project.

In August of 1989 the DEQ, Reuben Kretzschmar, inspected the site and noted that the opacity was in excess of the permit requirement of 20% by three percent and that the wet electrostatic precipitator had not been installed. Ocean Proteins manager at the site, Paul Bright, discussed the project status with Reuben Kretzschmar. The DEQ, Reuben Kretzschmar, issued a Notice of Noncompliance and requested that Ocean Proteins advise the department why the equipment had not been installed yet.

Ocean Proteins, in accordance with the DEQ request, submitted a response to the Notice of Noncompliance to the DEQ, Reuben Kretzschmar. The response included a description of current progress, the projected schedule, and the reason that the project had not been completed within time frames outlined in the permit, errors in the permit and equipment delays. It was noted that the DEQ had received regular progress reports and had been regularly appraised of the schedule for completion and changes thereof. A copy of the final equipment drawings and vendors schedule update, showing progress to date was included.

A Notice of Violation and Intent to Assess Civil Penalty was issued by the DEQ, Thomas Bispham, in September of 1989. The Notice states that the precipitator had not been installed and that compliance with the 10% opacity requirement and grain loading had not been demonstrated. It indicated that legitimate schedule changes should be formally communicated to the DEQ on an immediate basis. The DEQ indicated that it is too late to request modifications to the permit and that if compliance can be demonstrated by October 31, 1989 it is unlikely civil fines will be issued. It further advised to make certain that no further violations occurred and that the DEQ would look forward to Ocean Proteins cooperation in the future.

In response to this final communication we offer the following response:

- 1) Ocean Proteins has pursued resolution of the original fish meal plant ACDP permit violation with dispatch, diligence and a sincere desire to resolve the problem. They have retained several experts to analyze and solve the problem. They have spared no expense nor balked at invoking the necessary improvements.
- 2) Ocean Proteins has had to maintain communications with at least 7 different DEQ personnel regarding the project. None of these people were fully aware of the project history or activity.
- 3) The DEQ revised the existing ACDP permit without notice, consultation or justification. The revisions are unreasonable and were made without justification.
- 4) The DEQ included errors in the permit, and despite notice at the highest level, have failed to justify or correct them. Despite errors in the permit Ocean Proteins resolved to proceed with solving the problem. We believe that the errors and permit revisions still require correction.
- 5) The DEQ failed to correct the permit schedule to correspond with the delayed permit. A revised schedule, which was clearly noted to be aggressive and subject to equipment availability, was formally submitted to the department in March of 1989. Subsequent progress reports have been made on a regular basis and have been widely distributed to the DEQ.
- 6) The delays in equipment order, resulting from the permit errors and the DEQ failure to address them in a timely manner, occurred at the expense of Ocean Proteins. The delays resulted in increased equipment costs due to material price increases (stainless steel) and additional internal and consultant expenses.
- 7) The wet electrostatic precipitator, selected as the most suitable equipment for this project, is an all stainless steel, custom fabricated, unit. The transformer, which is stainless steel, was custom fabricated in Sweden especially for this project. This equipment, because of it's size, the application, and the materials of construction is considered by the manufacturer to be unique. Delivery times of twenty weeks or more for this equipment is considered normal.

8) The precipitator fabrication is presently being completed in Medford, Oregon. The unit is expected to be delivered in the middle of October. The transformer was completed and is presently in transit from Sweden. It is expected to arrive in late October. The exact delivery date is unknown since the unit is subject to customs procedures, etc.

9) Other improvements necessary to complete the system are underway at the site. The DEQ representative, Reuben Kretzschmar, was shown the air handling fan which was at the site during his visit in August.

10) No complaints regarding plant emissions have been received since last fall. This is, in part, due to special effort on the part of Ocean Proteins and favorable weather conditions.

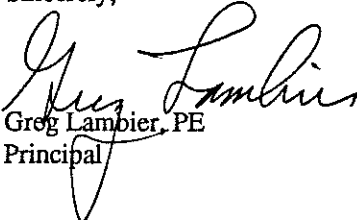
There is no basis for the present violation notice. The DEQ was clearly advised of the appropriate schedule requirements at least three times, in the final engineering report, the attached vendor proposal, and in March. Regular progress reports have been made. This conflict has resulted from a failure of the DEQ to perform properly, not Ocean Proteins.

In summary we feel that Ocean Proteins has been abused by the DEQ on this project starting with the issuance of the revised permit. We work with the DEQ on a regular basis, on a wide range of projects, and are aware that the DEQ's actions on this project do not conform with their usual standards. They appear to have deviated from good practice by not providing support for their technical interpretations, calculations and assumptions and failed to exercise due diligence and care in preparation of the permit and in response to formal requests for permit modification.

Lastly we would like to point out that this present exercise, resulting from a DEQ failure to make appropriate permit modifications and to respond to formal communications, represents a tremendous waste of resources. The subject equipment is expected to arrive within days, and the system is expected to be operational within a few weeks. The equipment is in transit and there is little, if anything, Ocean Proteins can do that they haven't already done to expedite completion of this project.

We would be pleased to meet with you to discuss this project and the current situation at your earliest possible convenience. We would like to see this situation amended. Grayco Resources, the parent company, and Ocean Proteins represent two of our more environmentally conscious, proactive, companies and do not deserve the treatment they have received from the DEQ.

Sincerely,


Greg Lambier, PE
Principal



Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

SEP 29 1989

CERTIFIED MAIL P 882 467 635

Ocean Proteins, Inc.
c/o William E. Scarborough, Jr.
Registered Agent
710 Third Avenue
Portland, OR 97204

Re: Notice of Violation and Intent
To Assess Civil Penalty
No. AQ-SWR-89-169
Coos County

On August 25, 1989, Ruben Kretzschmar, supervisor of the Department's Coos Bay Branch office, sent you Notice of Noncompliance No. ENF-AQ-SWR/CB-89-198 for several violations of Air Contaminant Discharge Permit No. 06-0102 noted during an inspection conducted on August 17, 1989. Specifically, you failed to complete installation of the wet electrostatic precipitator by June 1, 1989, and failed to demonstrate compliance with either the 10 percent opacity or 0.010 grains per dry standard cubic foot particulate emissions limitation by July 1, 1989 as required by the permit. You also failed to submit an annual monitoring report of the plant's production and the quantities and types of fuels used by January 15, 1989. Lastly, you exceeded the current 20 percent opacity limitation of your permit as Mr. Kretzschmar observed a 23.5 percent opacity from the fish meal dryer exhaust over a five minute period during that inspection.

Because you violated your permit, I am sending you the enclosed legal notice warning you that a civil penalty may be assessed if any cited violation continues or any similar violation occurs five (5) or more days after you receive this notice. The enclosed warning remains in effect indefinitely.

Civil penalties can be assessed for each day of each violation. Civil penalties are determined pursuant to Oregon Administrative Rule (OAR) 340-12-045. A copy of our enforcement procedure and civil penalty rules is enclosed.

In response to the Notice of Noncompliance, Lambier Stevenson Engineers submitted a letter on your behalf dated August 29, 1989, advising the Department of equipment delivery delays and an anticipated installation date of mid-October. Please be advised that when legitimate reasons for delay exist, they must be immediately communicated to the Department with a formal request for permit modification. This should have been done as soon as you were aware that you were not going to be able to meet those deadlines.

Ocean Proteins, Inc.
Case No. AQ-SWR-89-169
Page 2

It is too late for filing such a request at this late stage. However, the Department will choose not to assess a civil penalty for your failure to install and failure to demonstrate compliance with the 10 percent or 0.010 grains/dry standard cubic foot limitation provided you are in full compliance with all of the requirements of your permit by October 31, 1989. Please make certain there are no future violations of your permit.

The Department received your 1988 annual report on August 28, 1989. Please ensure that your 1989 report is submitted by January 15, 1990.

If you have any questions about this enforcement action, please contact Mr. Kretzschmar at 269-2721. I look forward to your future cooperation.

Sincerely,



Thomas R. Bispham
Administrator
Regional Operations Division

TRB:vk:b

GB8958L

Enclosures

cc: Southwest Region, DEQ
Air Quality Division, DEQ
Department of Justice
Environmental Protection Agency
Ocean Proteins, Inc.

1 BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

2 OF THE STATE OF OREGON

3 DEPARTMENT OF ENVIRONMENTAL QUALITY)
4 OF THE STATE OF OREGON,)

5 Department,)

6 v.)

7 OCEAN PROTEINS, INC.,)
8 an Oregon corporation,)

9 Respondent.)

NOTICE OF VIOLATION AND
INTENT TO ASSESS CIVIL PENALTY
No. AQ-SWR-89-169
COOS COUNTY

10 I. AUTHORITY

11 This notice is issued to Respondent, Ocean Proteins, Inc., an Oregon
12 corporation, by the Department of Environmental Quality (Department),
13 pursuant to Oregon Revised Statutes (ORS) 468.125(1) and Oregon
14 Administrative Rules (OAR) Section 340-12-040(1) and (2).

15 II. PERMIT

16 On July 17, 1985, the Department issued Air Contaminant Discharge
17 Permit No. 06-0102 (Permit) to Respondent. The Permit authorized
18 Respondent to discharge exhaust gases containing air contaminants from
19 Respondent's plant located at ~~8660 Guano Rock Road, Charleston, Oregon, only~~
20 in accordance with the Permit application and limitations contained in the
21 Permit. Addendum No. 1 to the Permit was issued to Respondent on March 2,
22 1989. The Permit expires on April 1, 1990. The Permit, as amended, was in
effect at all material times.

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1 III. VIOLATIONS

2 Class I Violations:

3 1. Respondent violated Condition 10c of the Permit by failing to
4 complete the installation of emission control equipment and/or on-site
5 construction or process modification work by no later than June 1, 1989.

6 2. Respondent violated Condition 10d of the Permit by failing to
7 demonstrate that the exhaust stack is capable of operating in continuous
8 compliance with Permit Condition 2b, by no later than July 1, 1989.

9 Class II Violations:

10 3. On August 17, 1989, Respondent's emissions from the fish meal
11 dryer exhaust exceeded an opacity of greater than 20 percent for a period
12 aggregating more than 3 minutes in any one hour. Specifically, from
13 2:00 p.m. to 2:05 p.m., Respondent's opacity averaged 23.5 percent.

14 Class III Violations:

15 4. Respondent violated Condition 8 of the Permit by failing to report
16 plant production and quantities and types of fuels used during 1988 by
17 January 15, 1989.

18 IV. CONSEQUENCES OF ADDITIONAL VIOLATIONS

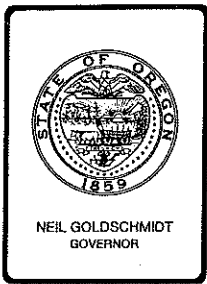
19 If five (5) or more days after Respondent receives this Notice, any
20 violation cited in Section III of this Notice continues, or any similar
21 violation occurs, the Department may assess a civil penalty against
22 Respondent. In the event that a civil penalty is imposed upon Respondent,
23 it will be assessed by a subsequent written notice pursuant to OAR
24 Chapter 340, Division 12. Respondent will be given an opportunity for a
25 contested case hearing to contest the allegations and penalty assessed in
26 that notice, pursuant to ORS 468.135(2) and (3), ORS Chapter 183, and OAR

1 Chapter 340, Division 11. Respondent is not entitled to a contested case
2 hearing at this time.

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9-29-89
Date

Tom Bispham
Thomas R. Bispham, Administrator
Regional Operations, DEQ



EWC. #3

RECEIVED

MAK 31 1989

GRAYCO RESOURCES, INC.

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

March 28, 1989

Grayco Resources, Inc.
Attn: Edward L. Allis, President
5331 SW Macadam Avenue
Portland, OR 97201

The Department has received your comments dated March 16, 1989, concerning the Ocean Proteins, Inc., Air Contaminant Discharge Permit Addendum issued on March 2, 1989. The Department agrees that should the new equipment only meet the not greater than 20% opacity limit, and the particulate measurements are within standards, you will have met the requirements of the permit.

Thank you for your comments.

Sincerely,

Fred Hansen
Director

FH:RP:x
AX766


GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431

August 25, 1987

Mr. Bruce A. Hammon
Environmental Analyst
Department of Environmental Quality (DEQ)
Southwest Region - Coos Bay Branch Office
490 North Second Street
Coos bay, Oregon 97420

Dear Mr. Hammon:

Re: AQ-Coos County
Ocean Proteins, Inc.
Permit # 06-0102

Thank you for your letter of August 10, 1987, which was received on August 14, 1987. The purpose of this letter is to specifically address the issues raised in your correspondence and inform you what we are doing to address your comments. The responses below respond in the same order of your letter:

1. We are prepared to conduct the emission source test immediately, however, we need your assistance in providing names of individuals and/or firms who can conduct such work.
2. As Paul Bright, Vice President - Operations, Ocean Proteins, Inc., may have mentioned during your visit, the truck referenced in your letter was already being scheduled to have an entire new interior made.

This may be confirmed by calling Day Metal Fabrication in Albany, Oregon, and speaking with Mr. Bob Day. Mr. Day's telephone number is 1-928-1641.

3. The truck referenced in paragraph 3 of your letter does not belong to Ocean Proteins, never has, and is not part of our operation. We did not fill the truck nor were we in the process of processing the waste material.

Second, the property between our operation and ORCA Pacific Products, Inc. is not ours, as it belongs to the International Port of Coos Bay - Charleston Boat Basin.

We do not control this property and, thus, cannot preclude vehicles from utilizing it. We do concur with your comments that the smells emanating from this truck were less than acceptable.

Paragraph #3 of your letter, therefore, does not apply to Ocean Proteins, Inc.

Mr. Bruce A. Hammon
Page Two
August 25, 1987

4. As you know, since I have sent your office, as well as the Port's, copies of my correspondence involving consultants recommended by the Portland DEQ office, we too are trying to reduce the emissions, which relate to Paragraph #1.

The relocation of the stack is not viable. We will look at the height issue in conjunction with reducing the overall emissions from the stack. To that extent, it was recommended that we contact Donaldson Company, Inc., specifically their Torit/Liquid Systems Division.

We have been in contact with Mr. John Peterson of Torit/Liquid Systems (1-206-883-3322) to determine if their division has equipment that would reduce the opacity situation to meet requirements. Mr. Peterson visited our facility on Friday, August 7, 1987, to review the situation.

Mr. Peterson is currently working with other members of Donaldson Company, Inc., the parent of the Torit division, to determine specifically whether they can help us. Your office will be informed of their recommendations.

I believe we are trying to be responsive to the requirements of the permit and the community. I will not tolerate, however, the comments of some residents in the area which have no validity. For example, there was a recent complaint in which individuals complained of a chemical irritation in their eyes. Upon investigation, it was determined that the plant was not utilizing chemicals of any kind in the scrubber system on that particular day.

Furthermore, I will not tolerate any verbal abuse directed to any employee of Ocean Proteins, Inc. from any citizen. We will always respond to your directives and continually seek your advice as to how we can do things better. We are a long term member of the community and will, thus, always conduct ourselves in a professional and responsive manner.

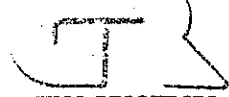
Should you have any questions as to the direction we are heading, please call. I will look forward to receiving your list of qualified people or companies to perform the applicable emissions tests within the specified time frames. Thank you for your patience and the professionalism with which you have always treated our firm.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg
cc: Paul T. Bright
V. Faye McAllaster
Larry Ivy
Frank Martin



GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431

March 22, 1988

Mr. Ray Potts
Department of Environmental Quality
522 S.W. Fifth Avenue
P.O. Box 1760
Portland, OR 97207

Dear Mr. Potts:

Re: Ocean Proteins, Inc.
Charleston, Oregon

As you know, Ocean Proteins, Inc. had been asked to have a formal test done of its emission stack located in Charleston, which had been conducted by BWR Associates of Medford. A copy of that report had been sent directly to your regional office in Coos Bay in November, 1987.

A follow-up report was to have been prepared by Hazard Management Specialists of Portland following that report (BWR Report). A copy of their report was received in this office earlier this month, and we have been making inquiries in the professional engineering community to determine our next course of action to bring the plant into compliance. A copy of Hazard Management's report is enclosed for your information and files.

I am meeting with representatives of the Port of Coos Bay on Wednesday, March 23, to discuss our plan of action. I am further scheduled to meet with various engineering personnel during the week of March 28 to determine a specific plan of action and to determine the time frames for securing the proper equipment to add to our system. I am also scheduled to meet with the providers of some of the equipment referred to in the Hazard Management Report to determine the availability of such equipment and its costs, including acquisition and installation.

My intent is to be able to have more specifics available for your review within the next 2-3 weeks, once I have had an opportunity to determine whether the equipment recommended will indeed result in the plant meeting the opacity requirements of its permit with your office.

In the interim, should you have any questions, please do not

Mr. Ray Potts
March 22, 1988
Page 2

hesitate calling me directly at 228-9431. Thank you for your patience and offers to assist us in meeting the requirements of the basic permit.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg

cc: Paul T. Bright

Enc.

March 9, 1988

M E M O R A N D U M

To: Edward L. Allis, Grayco Resources

From: R. Bruce Snyder

Subject: Ocean Proteins Plant - Permit Status and Emissions
Control Review

Introduction

HMS Environmental was retained by Grayco Resources to investigate conditions at its Ocean Proteins Company Fish Meal Processing Plant in Charleston, Oregon. The plant has been cited by DEQ for violations of Emissions Standards and for complaints regarding plant odors. HMS was referred by LSE Engineering who was originally contacted by Grayco, as being the logical source of services regarding emissions from the plant, while LSE could provide any subsequent process evaluation and suggest engineering changes.

We visited the site in October, 1987, talked with Paul Bright, Vice President in charge of production for the facility and prepared a memo to you covering that site visit.

This report presents a review of the BWR Associates Source Test conducted in late October, 1987, compares the data from the source test report with the requirements of DEQ's air contaminant discharge permit for the facility and presents an analysis of the present plant processes and

Edward L. Allis

March 9, 1988

Page 2

systems and their relationship to the report results and permit requirements. Finally, a list of potential alternatives for correction of the emissions problems are presented and evaluated.

BWR Report

The BWR source test report results show the facility is within the grain loading requirements of the air contaminant discharge permits, but fails the mass emissions rate and opacity requirements of the permit, as the following table illustrates:

Test Results Compared with Permit Conditions

	<u>Test</u>	<u>Permit</u>
Average Grain Loading (gr/dscf)	.045	0.1
Mass Emissions (lb/hr)	1.21	0.08
Average Estimated Opacity (%)	30	20

The table shows that while the plant easily passes the grain loading condition it fails the mass emission and opacity conditions. The percent moisture in the stack was very low, confirming that the opacity is due to suspected condensed hydrocarbon compounds.

Analysis

The dryer design, through use of the pulse jet engine, results in a high temperature drying zone in which the cooked fish by-products contact an extremely hot gas stream at the exhaust of the pulse jet engine in the earliest

Edward L. Allis

March 9, 1988

Page 3

portion of the drying cycle. Exhaust temperatures from the dryer are on the order of 240°F to 250°F, while gases from the engine at the beginning of the drying cycle are substantially over 1,000°. Thus, the dryer design itself contributes to the opacity problem through generation of hydrocarbons vaporized from the fish product as it contacts the hot exhaust gas from the engine. It is these volatilized hydrocarbon which appear as the opaque plume at the stack. The particles are so fine that they easily pass through the cyclone collectors, the gas cooler and the scrubber. Our research of the literature and conversations with others confirms that your opting to not chlorinate the gas stream prior to the scrubber is correct. High-temperature dryer odor problems are exacerbated by chlorination, and possibly by acid-caustic washing as well.

The system ID fan is presently located just upstream from the gas cooler. This pressurizes the cooler, scrubber, stack and associated ductwork and thus allows odors to escape through leaky ports and connections. Further, since the fan must now operate in a "dirty" gas stream, it is subjected to more wear and constant imbalance forces as the substantial particulate carry over from the cyclones impinges on the fan wheel, agglomerates and breaks off.

The fan should be relocated to be the last piece of equipment prior to the stack so that all equipment and ductwork upstream will be under negative pressure during operation, thus eliminating a major source of fugitive emissions.

Edward L. Allis

March 9, 1988

Page 4

It also appears that the low stack exit velocity and temperature are contributing to substantial downwash of the plume, which probably also is a factor in generating odor complaints. The only way to solve this problem is to increase stack exit velocity by adding a transition piece and smaller stack top. This will potentially affect fan selection.

Control Options

Options for control of the opacity problem are somewhat limited, since we believe that changing the design of the dryer would be infeasible. The remaining options are add-on equipment between the scrubber and the stack to control these fine particles. These kinds of equipment are of two types, 1) electrostatic precipitators and 2) thermal oxidizers (afterburners).

Afterburners are of two types. The first is direct-fired using gaseous or liquid fuel to raise the gas stream to a point above the temperature at which the odorous compounds are destroyed by thermal decomposition. The other is a catalyst-treated thermal bed with just enough energy to be added through gaseous fuel combustion to maintain the bed at an operating temperature of about 750°F (by comparison the direct fired incinerator would operate at temperatures on the order of 2,000°F, thus requiring substantially more fuel). The catalyst facilitates thermal decomposition of the compounds at a much lower temperature, thus saving fuel.

Edward L. Allis

March 9, 1988

Page 5

The situation with the lack of natural gas at the site makes thermal oxidation problematic, but further, the concept of direct thermal oxidation is not well suited to this process. Usually, direct thermal oxidation of odors in fish meal plants is combined with substantial heat recovery in which most of the heat used for the drying process is recovered from the thermal oxidation of the odors generated by the dryer. This heat recovery option may not be viable because of the use of a pulse jet dryer in this installation.

The second major alternative is wet electrostatic precipitation. In this process an electrostatic charge is applied to particles or droplets, which are then collected on metal plates or tubes of the opposite polarity. A precipitator would be located between the scrubber and the stack, just upstream from the new fan location. Wet electrostatic units operate in saturated atmospheres such as gas coming off the scrubber and have been very successful at removing solid and liquid particulate from gas streams in a variety of applications, including food processing. At this point, we believe this may be your only viable option for control.

We have informally contacted a Seattle-area builder of wet electrostatic precipitators and have confirmed a unit could be fabricated for the plant at Charleston which would bring the facility certainly within the opacity limits, for about \$10 per cfm or about \$33,000. The unit would be constructed of stainless steel. Information from the source test

Edward L. Allis

March 9, 1988

Page 6

necessary to provide a closer estimate of cost has been provided to the vendor. Also, a portable pilot plant is available for on-site testing - an option we urge you to utilize if you proceed.

As far as your status with DEQ, you should apply for a modification of your ACDP to reflect the results of the BWR mass emission tests, including increased lb/hr and ton/yr values. We doubt that you can obtain a variance for the opacity violation.

We recommend you contact Greg Lambier of LSE to assist with selection, sizing and relocation of a new ID fan and to provide necessary engineering input to any add-on control equipment we may recommend for selection.

Finally, we understood that a particulate test at the fan inlet was to be conducted as part of the overall source test. If such a test was conducted, we must see the results of that test as well in order to complete our work for the set of alternatives available for control.

December 19, 1988

Mr. Ray Potts
Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204
(503) 229-5696

RE: ACDP for Ocean Proteins, Charleston, Oregon

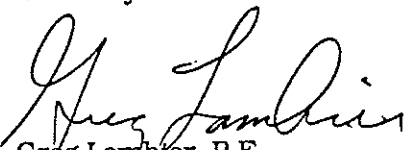
Dear Mr. Potts:

We have the following comments regarding the draft Air Contaminant Discharge Permit (ACDP) for Ocean Proteins process plant in Charleston, Oregon.

1. The operating period is expected to be 5 days per week, 52 weeks per year, 2 shifts per day and 8 hours per shift or a total of 4160 hours per year.
2. At a grain loading of 0.01 g/dscf, 4160 hours/year, and 5000 dscfm the hourly emissions would be 0.43 lb/hr and 0.81 tons per year.
3. We have requested that the precipitator provide discharge performance of 10 % opacity or less. The equipment vendor is confident that their equipment will meet this goal. The 10% opacity requirement was established to provide an operating buffer between the equipment capability, based on vendor projections, and the permit limit. We request that the opacity limit be left at the present 20% level required by the existing permit.

We are prepared to proceed with the modification of the system as soon as an agreement is reached regarding the permit requirements. We have appreciated your prompt review of the equipment submittal and preparation of the draft permit. We are available to meet and discuss these items in order to expedite the equipment orders.

Sincerely:


Greg Lambier, P.E.
Principal


GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431, FAX (503) 228-9473

May 24, 1989

Mr. Lloyd Kostow, Manager
Program Operations
Air Quality Division
Department of Environmental Quality
811 S. W. Sixth Avenue
Portland, Oregon 97204-1390

Dear Mr. Kostow:

Re: Ocean Proteins, Inc.
Fish Meal Processing Plant
#06-0102
Charleston, Oregon

As a follow-up to my letter to you of March 7, 1989, the following up-date is provided:

1. Centrifugal fan has been ordered previously through Brod & McClung-Pace Co., which is part of the overall upgrade of the equipment to meet our opacity objectives. A copy of the original Order Register with the manufacturer is attached;
2. Geoenergy International Corp. has begun their work. Copies of our progress payments and correspondence are enclosed for your files;
3. More detailed information and subsequent copies of applicable order forms and payments for key components will be forwarded for your files as applicable.

In the interim, should you have any questions, please feel free to call me direct.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg

cc: John D. Gray
Paul T. Bright
Greg Lambier, P.E.
Board of Commissioners
International Port of Coos Bay
Larry Ivy, Asst. Executive Director
Reuben Kretzmeier, DEQ
Ray Potts, DEQ

INVOICE C-4392
 TO • OCEAN PROTEINS, INC
 ADDRESS • 200 WATER TOWER BLDG
 CITY • 5331 SW MACADAM
 PORTLAND, OR 97201

SHIP TO
 SAME
 8090 GUANO ROCK RD.
 CHARLESTON, OR 97420

CUST. ORDER NO.

JOB NAME

DATE WANTED
 5/19/89

F.O.B.
 FACTORY
 W/FA

SHIP VIA
 B/W

ATTN: NICK ALLIS

ITEM NO.	QUANTITY	DESCRIPTION	PRICE
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1	1	HARRINGTON MODEL HPR-21, CLASS I ARR #1 THD,CCWR,CENTRIFIGUAL FAN COMPLETE WITH ACCESS DOOR,HOUSING DRAIN SHAFT SEAL, OUTLET TRANSITION,OUTLET FLEX CONNECTION INLET FLEX CONNECTION. PACE CO. TO FABRICATE A UNITARY BASE & MOUNT ABOVE FAN WITH V-BELT DRIVE & OHSA GUARD. USE MOTOR POSITION "W". MOUNT MOTOR BASE TO ACCEPT CUSTOMERS 30HP-1750 RPM FRAME 286TS MOTOR. MOTOR WILL NOT COME TO PACE CO. COAT BASE & GUARD W/RED LEAD UNDERCOAT & PACE GREY. DUTY: 5784 CFM @ 11.0"TSP FANSPEED 1196 RPM	U.S. Funds
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Total \$ 7,659.00

GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431, FAX (503) 228-9473

June 16, 1989

Mr. Lloyd Kostow, Manager
Program Operations
Air Quality Division
Department of Environmental Quality
811 S. W. Sixth Avenue
Portland, Oregon 97204-1390

Dear Mr. Kostow:

Re: Ocean Proteins, Inc.
Fish Meal Processing Plant
#06-0102
Charleston, Oregon

In an effort to keep your office informed as to the progress being made with the installation of the specified equipment for the Ocean Proteins' plant in order to control opacity levels in Charleston, please find enclosed a copy of the most recent shop drawing for some of the more major pieces of equipment being installed.

The drawings were prepared by Geoenergy International Corp. of Kent, Washington, who has been retained by Ocean Proteins for the equipment installation, under the overall direction and guidance of Lambier/Stevenson Engineers, Portland.

Should you have any questions, please call.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg
Enclosure

cc: John D. Gray
Paul T. Bright
Greg Lambier, P.E.
Larry Ivy, Port of Coos Bay
Reuben Kretzmeier, DEQ
Ray Potts, DEQ



GRAYCO RESOURCES, INC.

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431

March 7, 1989

Mr. Lloyd Kostow, Manager
Program Operations
Air Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

Dear Mr. Kostow:

Re: Ocean Proteins, Inc.
Fish Meal Processing Plant
#06-0102
Charleston, OR

As a follow-up to our telephone conversation on February 24, 1989, and my letter to you of February 28, 1989, I met Mr. Greg Lambier, P.E., Principal, Lambier/Stevenson Engineers, to review our implementation schedule for the necessary pollution control equipment. A copy of the schedule is enclosed.

Our efforts will be to exceed the enclosed schedule, but we have not wanted to proceed until the issue involving the current opacity level of 20% was resolved, which I am assuming it is based on our earlier discussions.

I will personally keep your office informed as to other key dates as we move forward with ordering of equipment and installation, which is occurring immediately.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg

- cc: John D. Gray
- Paul T. Bright
- Greg Lambier, P.E.
- Board of Commissioners
- International Port of Coos Bay
- Larry Ivy, Asst. Executive Director
- Reuben Kretzmeier, DEQ
- Ray Potts, DEQ

Enc.

MEMORANDUM

March 6, 1989

TO: Mr. Nick Allis
Grayco Resources

FROM: Greg Lambier
LSE

Re: Project Organization; Ocean Proteins
Emission Control

I have prepared a brief task-list schedule for your review. The schedule is based on a 16 week delivery schedule for the precipitator. The vendor believes this may be very aggressive.

1. EQUIPMENT REQUIREMENTS: (By 3/15/89)
 - A. Fan (3/15/89 order)
 - B. Precipitator & Mist Eliminator (3/15/89 order)
 - C. Damper (3/15/89 order)
2. DESIGN ENGINEERING: (By 5/1/89)
 - A. Equipment Selection (By 3/15/89)
 - B. Review Shop Drawings (4/15/89)
 - C. Prepare Installation Plan (4/15/89 to 5/1/89)
 - a. Equipment Location Plan
 - b. Foundation Plan & Details
 - c. Misc. Details and Sections
3. SOLICIT INSTALLATION BIDS: (5/15/89 to 6/1/89)
 - a. Mechanical and Civil
 - b. Electrical
4. SYSTEM INSTALLATION: (6/15/89 to 8/1/89)
5. SYSTEM TESTING AND STARTUP: (8/1/89)

BUDGET

Equipment

Precipitator	\$ 64,000
Fan	\$ 4,000
Damper	\$ 600

Installation

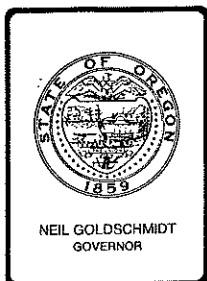
Mechanical & Civil	\$ 18,000
Electrical	\$ 4,000

<u>Testing</u>	\$ 5,000
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Subtotal	\$ 95,400
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<u>Engineering</u>	\$ 4,500
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Total w/o Contingency	\$ 99,900
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Department of Environmental Quality
 SOUTHWEST REGION — Coos Bay Branch Office

490 NORTH SECOND STREET, COOS BAY, OREGON 97420 PHONE (503) 269-2721

August 25, 1989

Grayco Resources, Inc.
 Edward L. Allis, President
 Suite 200, The Water Tower Bldg.
 5331 S.W. Macadam Ave.
 Portland, Or. 97201

RE: AQ-Coos County
 Ocean Proteins, Inc.
 NOTICE OF NONCOMPLIANCE
 ENF-AQ-SWR/CB-89-198

On August 17, 1989, a representative of this office conducted a comprehensive compliance inspection at Ocean Proteins, Inc., 8090 Guano Rock Road, Charleston, Oregon. The purpose of this inspection was to determine the extent of compliance with the Air Contaminant Discharge Permit (ACDP), No. 06-0102 issued for this facility. A copy of the inspection report is enclosed for your records.

This permit, as amended on March 2, 1989, sets the following conditions:

Condition 2b - "An opacity greater than twenty (20) percent for a period aggregating more than three (3) minutes in any one (1) hour. Upon successful demonstration that the control equipment will comply with a ten (10) percent opacity limit, and after notification to the permittee in writing, the opacity limit will become ten (10) percent. If visible emissions exceed ten (10) percent opacity, a source test may be required to demonstrate compliance with condition 2a."

Compliance Demonstration Schedule Number 10 - "The permittee shall provide controls for the fish meal dryer exhaust in accordance with the following schedule:

- a) By no later than March 17, 1989, the permittee shall issue purchase orders for the wet electrostatic precipitator.
- b) By no later than May 1, 1989, the permittee shall initiate the installation of emission control equipment and/or on-site construction or process modification work.
- c) By no later than June 1, 1989, the permittee shall complete the installation of emission control equipment and/or on-site construction or process modification work.
- d) By no later than July 1, 1989, the permittee shall demonstrate that the exhaust stack is capable of operating in continuous compliance with Condition 2b.

Ocean Proteins NON
Page 2
August 25, 1989

- e) Within seven (7) days after each item, a through c above, is completed, the permittee shall inform the Department in writing that the respective item has been accomplished."

This inspection revealed that installation of the wet electrostatic precipitator has not been started. Opacity reading of the stack shows an average opacity over five (5) minutes to be 23.5 percent. We also find that the yearly monitoring report required under Condition 8 has not been submitted.

This letter is to serve as a Notice of Noncompliance for violation of Performance Standards and Emission Limits, condition 2 - Opacity; Compliance Demonstration Schedule, condition a, b, c, d, & e; and Monitoring and Reporting, condition 8a & b. The failure to comply with the Compliance Demonstration Schedule is a Class I violation and considered to be a serious violation of the Department's rules. The opacity is a Class II violation and Monitoring is a Class III violation. A Class I violation is subject to a civil penalty ranging from \$1,000.00 to \$10,000.00 for each violation and for each day the violation continues.

We are not recommending civil penalties at this time, but request that you submit in writing to the Department a schedule of installation, completion, demonstration of compliance, and the reason the current compliance schedule has not been met, by September 5, 1989. We are also referring these violations to the Department's Enforcement Section with a recommendation to proceed with formal enforcement action.

Please contact this office if you have questions pertaining to this Notice or our inspection findings.

Sincerely,



Ruben Kretzschmar
Branch Supervisor

RK:gs
Enclosure
c: Paul Bright, Ocean Proteins
Southwest Region
Air Quality Division
Enforcement Section
(OPROTEIN)

August 29th, 1989

Mr. Reuben Kretzschmar
Branch Supervisor
Coos Bay Branch Office
490 N. Second Street
Coos Bay, Oregon 97240

RE: Ocean Proteins Air Contaminant Discharge Control Project

Dear Reuben:

I am writing in behalf of Mr. Edward L. Allis, Grayco Resources, Inc. with regard to your inspection notice dated August 25, 1989. In the notice you noted that emissions from the plant were observed to be 23%, 3% over the present 20 % discharge limit. As such you notified us that the plant is presently out of compliance and may be subject to enforcement action. You also noted that the wet electrostatic precipitator installation had not been started.

Please be advised that the installation is underway. A wet electrostatic precipitator is presently on order from GeoEnergy, Inc. We have submitted regular progress reports and schedule updates to you, Lloyd Kostow, and the Port Commission advising of progress on the project. The present schedule for equipment delivery indicates that the precipitator will be delivered approximately October 1, 1989. The unit will be installed within approximately two weeks of arrival.

Site improvements will include construction of a small concrete fan support pad and a transformer pad. These improvements are expected to take less than two weeks to complete and are scheduled for installation just prior to the precipitator arrival. I'm sure you noticed the new fiberglass exhaust fan, which is part of the new emission control system, has arrived at the site and is ready for installation.

The present schedule for project completion is later than specified by the permit. The reasons are as follows:

1. The vendor advised in his proposal that 22 weeks should be allowed for the fabrication and delivery of the wet electrostatic precipitator. A copy of the proposal was supplied as part of our project submittal. The permit allowed approximately 6 weeks. This creates a 16 week error in the schedule. This error was noted and a more realistic

LAMBIER STEVENSON ENGINEERS

319 S.W. WASHINGTON □ PORTLAND, OR 97204 □ (503) 223-4805

schedule, based on the Vendors anticipated delivery, was submitted for your review in March of this year.

2. Precipitator component deliveries have been delayed adding two to four weeks to the vendors anticipated delivery schedule. Many of these components are being custom designed and fabricated especially for this installation due to the size of the application and the sea coast environment the unit will be subjected to. Many of the components are being shipped from Europe.

We are convinced that the equipment vendor is sincere in their efforts to supply the equipment as quickly as possible. They have kept us advised with regard to progress by providing regular progress reports and schedules, which in turn, have been supplied to you.

We have recently received the final equipment drawings and a schedule update from Geoenergy. I have included these for your reference.

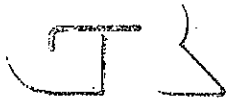
We are implementing this system as quickly as possible. Please reconsider your request to recommend formal enforcement action against Ocean Proteins/Grayco Resources for noncompliance with the ACDP. It is counter-productive and unfair to cite them based on their record of cooperation with the community and the State to resolve this problem.

If we can be of assistance in this matter or if you have any questions or comments please don't hesitate to call.

Sincerely:

Greg Lambier, PE
Principle

cc: Nick Allis, Grayco Resources
Paul Bright, Ocean Proteins
Blaine Sorenson, GeoEnergy
Lloyd Kostow, DEQ
Larry Ivy, Port of Coos Bay

**GRAYCO RESOURCES, INC.**

SUITE 200 THE WATER TOWER BUILDING
5331 S.W. MACADAM AVENUE
PORTLAND, OR 97201
(503) 228-9431, FAX (503) 228-9473

September 6, 1989

Mr. Reuben Kretzschmar
Branch Supervisor
Department of Environmental Quality
Southwest Region - Coos Bay Branch Office
490 N. Second Avenue
Coos Bay, Oregon 97420

Dear Mr. Kretzschmar:

Re: Ocean Proteins, Inc.
AQ-Coos County

Your letter of August 25, 1989 arrived at our office while I was away, and while I understand that our engineer, Mr. Greg Lambier, P.E., Lambier/Stevenson Engineers has responded in a letter dated August 29, 1989, I wanted to respond directly due to the seriousness of the situation.

Ever since meeting with you in Coos Bay, we have endeavored to keep both the Portland and Coos Bay Office informed as to what we were doing in order to meet the original requirements of the Department.

As you may recall, which was not only a surprise to us but to your office as well, the Portland office of DEQ had unilaterally lowered the emission requirements from the approved level of 20% opacity to 10% opacity. A considerable amount of time then ensued going back and forth to get the opacity levels left at the original level of the permit, or 20%. This was not confirmed until March 28, 1989, when Mr. Fred Hansen, Director, Department of Environmental Quality, wrote to me a letter confirming the opacity level.

On May 24, 1989, in a letter to Mr. Lloyd Kostow, Manager, Program Operations, Air Quality Division, to whom I had been asked to direct all correspondence with regard to this project, I indicated that the centrifugal fan had been ordered, the installer had begun their work (Geoenergy International Corp.), and that additional information as received from the installer would be forwarded.

On June 16, 1989, I had sent Mr. Kostow the most recent shop drawings for some of the major pieces of equipment being fabricated. In both situations, I sent your office copies of all correspondence. At no time did anyone mention anything about concern over time frames. I even sent copies of checks for downpayments that have been made on equipment to the offices of the DEQ. Again, not one comment.

September 6, 1989

The comments contained in your letter of August 25, 1989 that you are recommending to the Enforcement Section to proceed with formal enforcement action are totally out-of-line, and frankly I'm not going to be threatened when we have done everything in our power to make the plant comply, especially after not having heard anything to the contrary from previous correspondence directed to DEQ's Portland and Coos Bay Office.

What the public sector must begin to understand, in my opinion, and I think I can speak to the issue having worked for the State of Oregon for a couple of years in the early 1980's, is that government does not exist without the private sector. Our plant in Charleston has barely broken even from a financial standpoint during the first 8 months of 1989. That's not your problem, it's ours, but the public sector must begin to understand what it takes to do business in this State and yet still survive. The equipment which has been specified in order to bring the plant in compliance will cost in excess of \$100,000.00, or more than 20% of one year's revenue for this small operation. There is literally no company in this state that could afford to spend what we're going to spend to rectify the situation and still survive, without additional net capital investment. The alternative for solving a 3% variation in the opacity level is to go out of business, which won't benefit anyone.

The equipment that was ordered months ago are not shelf items - each piece is specifically manufactured. If we're delayed as a result of something beyond our control, that's frankly too bad. We are doing the best we can, and frankly if that's not good enough, I would welcome anyone in the Department stepping aside for one month, seeing what it is like to work in the private sector, deal with all the agencies, make payroll and dozens of other aspects of running a business and still survive.

If any enforcement action is instituted against Ocean Proteins, Inc. after what we have done to-date and the financial sacrifices made, we will vigorously contest and take actions accordingly to defend our position, which cannot be questioned.

Sincerely,

GRAYCO RESOURCES, INC., Managing Agent
Ocean Proteins, Inc.

Edward L. Allis
President

ELA/jmg
cc: John D. Gray
Lloyd Kostow, DEQ
Paul T. Bright
Larry Ivy, Deputy Director, Port of Coos Bay
Greg Lambier, P.E.

- **An International Frame of Mind.** Create an international orientation in Oregon's business and cultural life that distinguishes Oregonians as unusually adept in global commerce. We must increase Oregonians' knowledge of international opportunities through foreign culture and language education in schools, and through creation of cultural and professional exchanges and internationally focused institutes.

These initiatives will distinguish *Oregonians as a people* who are unusually capable of working in an advanced economy and *Oregon as a place* where the environment and quality of life is preserved and enhanced as the state grows. These initiatives should position us well in building a stronger, more diversified economy.

SUPPORT INITIATIVES

In addition, we must accept the challenge facing every state, to provide the elements of an economic climate conducive to business growth. We can do this by concentrating on three supportive initiatives:

- **Form Institutional Partnerships.** In order to establish a framework for a productive, competitive Oregon, build partnerships among groups who have traditionally operated independently of each other, or, at worst, antagonistically toward one another: business, labor, government, education, and environmental groups. Accomplishments of such partnerships will range from the efficient transfer of ideas between universities and businesses to improved labor-management relations.
- **Invest in Public Facilities and Services.** We must invest in facilities which directly affect business operations and costs, including roads, ports, and utilities, and in services which enhance the quality of the human environment, including schools, police and fire protection, and parks.
- **Contain Costs of Business.** State programs and policies can substantially affect the competitiveness of industries. In Oregon, we still have work to do on a number of cost-cutting issues, including workers compensation rates, unemployment insurance, and energy rates.

We propose creation of an Oregon Development Board to see that these initiatives are implemented. The board, appointed and chaired by the Governor, would guide and amend this strategy over the long term, cut across institutional barriers and inspire cooperation among various sectors, measure the degree to which initiatives recommended in this plan are achieved by those responsible, and report to the Legislature and the Oregon people each biennium on progress toward Oregon's strategic goals.

SCHWABE, WILLIAMSON & WYATT
ATTORNEYS AT LAW

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(503) 796-2957

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TELECOPIER (503) 796-2900

October 3, 1989

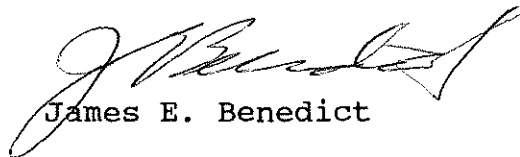
William P. Hutchison, Chair
Environmental Quality Commission
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

RE: Port of Astoria's Exceptions to
Order Dismissing Contested Case Proceedings

Dear Chairman Hutchison:

Enclosed please find the Exceptions to the Proposed Order in the above-referenced matter filed on behalf of the Port of Astoria. The Exceptions address and propose to correct an error in the Proposed Order. The Proposed Order indicates that all facilities that received a Notice dated November 30, 1988 were included on the Inventory of Confirmed Releases; in fact, those that filed an Answer and a Request for Contested Case Hearing, as did the Port of Astoria, were not listed on the Inventory. The proposed Exceptions suggest changes to the Order to make this necessary correction.

Very truly yours,



James E. Benedict

Enclosure

JEB:hm

c: Fred Hansen, Director, DEQ
Robert Miller, Port of Astoria

Seattle, Washington 98171 • Schwabe, Williamson, Wyatt & Lenihan
Peoples National Bank Building, Suite 900 • 1415 Fifth Avenue • (206) 621-9168

Washington, D.C. 20007 • Schwabe, Williamson & Wyatt
The Flour Mill, Suite 302 • 1000 Potomac Street N.W. • (202) 965-6300

STATE OF OREGON

ENVIRONMENTAL QUALITY COMMISSION

In the Matter of)	
)	
SITE INVENTORY LISTINGS)	PORT OF ASTORIA'S
)	EXCEPTIONS TO ORDER
)	DISMISSING CONTESTED
)	CASE PROCEEDINGS

Port of Astoria ("Port") hereby excepts to the Proposed Order Dismissing Contested Case Proceedings (hereinafter "Order Dismissing") mailed to Port by certified mail dated August 29, 1989.

BACKGROUND

By letter dated November 30, 1988, the Director of the Department issued Orders and Notices of Opportunity for Contested Case Hearing ("Listing Order") to the present owners of 325 facilities in the State of Oregon. The Listing Order stated that the Listing Order would be effective unless an Answer and Request for Contested Case Hearing was filed within 15 days of the receipt of the Notice and Listing Order. The November 30, 1988 letter also stated that the facility identified in the Proposed Order would not be placed on the Inventory of Confirmed Releases, if an Answer and Request for Contested Case Hearing was submitted within 15 days of receipt of the Notice.

By hand delivered letter dated December 14, 1988, Port of Astoria filed timely a Request for Contested Case Hearing and Answer.

1 Port understands that 209 similar Requests were filed
2 with the Commission.

3 The Commission's Order is in error because it indicates
4 that all 325 facilities that received the Listing Order were
5 listed on the Inventory of Confirmed Releases when in fact the 210
6 facilities that requested a contested case hearing were not placed
7 on the Inventory of Confirmed Releases.

8 EXCEPTION

9 Accordingly, Port of Astoria excepts to paragraph 1 a)
10 and d) and to paragraph 2 of the Proposed Order and suggests the
11 following changes:

12
13 1. Findings of Fact

14 a. On November 30, 1988, the Director of the
15 Department of Environmental Quality (DEQ) issued
¶ **conditional orders listing 325 facilities on an**
16 **Inventory of Confirmed Releases, pursuant to ORS**
¶ **466.557 (1987), which orders were to become**
¶ **effective only if the recipient of an Order did not**
17 **timely file an Answer and a Request for Contested**
18 **Case Hearing within fifteen (15) days of receipt of**
the Order.

19 d. On August 29, 1989, the Director rescinded the
20 Inventory of Confirmed Releases developed under the
¶ 1987 law and dismissed all DEQ orders listing
21 facilities on such Inventory, and dismissed all
22 **conditional Orders subject to Request for Contested**
¶ **Case Hearing that proposed to list facilities on**
23 **such Inventory. No facilities are currently listed**
on an Inventory of Confirmed Releases.

24 2. Conclusion of Law

25 HB 3235, the recision of the Inventory of Confirmed
26 ¶ Releases, and the dismissal of all orders listing
¶ facilities on such Inventory, and the dismissal of
27 **all conditional Orders subject to Request for**

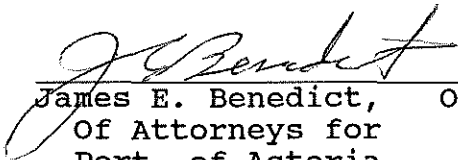
1 ¶ **Contested Case Hearing that proposed to list**
2 ¶ **facilities on such Inventory, render these matters**
3 ¶ **moot.**

4 Port of Astoria respectfully requests that changes
5 pursuant to these exceptions be made prior to entry of the Order.

6 DATED this 3rd day of October, 1989.

7 Respectfully submitted,

8 SCHWABE, WILLIAMSON & WYATT

9 
10 James E. Benedict, OSB#76059
11 Of Attorneys for
12 Port of Astoria

SCHWABE, WILLIAMSON & WYATT
ATTORNEYS AT LAW

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1211 S.W. Fifth Avenue
Portland, Oregon 97204-3795
(503) 222-9981

JAMES E. BENEDICT
(503) 796-2957

CABLE ADDRESS "ROBCAL"
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October 2, 1989

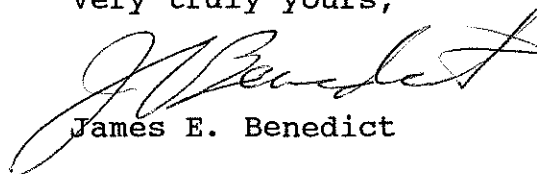
William P. Hutchison, Chair
Environmental Quality Commission
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

RE: Stauffer Chemical Company's Exceptions to
Order Dismissing Contested Case Proceedings

Dear Chairman Hutchison:

Enclosed please find the Exceptions to the Proposed Order in the above-referenced matter filed on behalf of Stauffer Chemical Company. The Exceptions address and propose to correct an error in the Proposed Order. The Proposed Order indicates that all facilities that received a Notice dated November 30, 1988 were included on the Inventory of Confirmed Releases; in fact, those that filed an Answer and a Request for Contested Case Hearing, as did Stauffer Chemical Company, were not listed on the Inventory. The proposed Exceptions suggest changes to the Order to make this necessary correction.

Very truly yours,



James E. Benedict

Enclosure

JEB:hm

c: Fred Hansen, Director, DEQ
Tedd Ahlberg, Plant Manager
Gary Ford, Esq.

STATE OF OREGON

ENVIRONMENTAL QUALITY COMMISSION

In the Matter of)	
)	
SITE INVENTORY LISTINGS)	STAUFFER CHEMICAL
)	COMPANY'S
)	EXCEPTIONS TO ORDER
)	DISMISSING CONTESTED CASE
)	PROCEEDINGS

Stauffer Chemical Company ("Stauffer") hereby excepts to the Proposed Order Dismissing Contested Case Proceedings (hereinafter "Order Dismissing") mailed to Stauffer by certified mail dated August 29, 1989.

BACKGROUND

By letter dated November 30, 1988, the Director of the Department issued Orders and Notices of Opportunity for Contested Case Hearing ("Listing Order") to the present owners of 325 facilities in the State of Oregon. The Listing Order stated that the Listing Order would be effective unless an Answer and Request for Contested Case Hearing was filed within 15 days of the receipt of the Notice and Listing Order. The November 30, 1988 letter also stated that the facility identified in the Proposed Order would not be placed on the Inventory of Confirmed Releases, if an Answer and Request for Contested Case Hearing was submitted within 15 days of receipt of the Notice.

//

//

1 By hand delivered letter dated December 16, 1988,
2 Stauffer filed timely a Request for Contested Case Hearing and
3 Answer.

4 Stauffer understands that 209 similar Requests were
5 filed with the Commission.

6 The Commission's Order is in error because it indicates
7 that all 325 facilities that received the Listing Order were
8 listed on the Inventory of Confirmed Releases when in fact the 210
9 facilities that requested a contested case hearing were not placed
10 on the Inventory of Confirmed Releases.

11 EXCEPTION

12 Accordingly, Stauffer Chemical Company excepts to
13 paragraph 1 a) and d) and to paragraph 2 of the Proposed Order and
14 suggests the following changes:

15 1. Findings of Fact

16 a. On November 30, 1988, the Director of the
17 ¶ Department of Environmental Quality (DEQ) issued
18 ¶ **conditional** orders listing 325 facilities on an
19 ¶ Inventory of Confirmed Releases, pursuant to ORS
20 **466.557 (1987), which orders were to become
effective only if the recipient of an Order did not
timely file an Answer and a Request for Contested
Case Hearing within fifteen (15) days of receipt of
the Order.**

21 d. On August 29, 1989, the Director rescinded the
22 Inventory of Confirmed Releases developed under the
23 ¶ 1987 law and dismissed all DEQ orders listing
24 ¶ facilities on such Inventory, **and dismissed all
conditional Orders subject to Request for Contested
Case Hearing that proposed to list facilities on
such Inventory.** No facilities are currently listed
25 on an Inventory of Confirmed Releases.

26 //
//

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ATTORNEYS AT LAW

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TELECOPIER (503) 796-2900

September 29, 1989


William P. Hutchison, Chair
Environmental Quality Commission
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

RE: Brazier Forest Products, Inc.'s Exceptions to
Order Dismissing Contested Case Proceedings

Dear Chairman Hutchison:

Enclosed please find the Exceptions to the Proposed Order in the above-referenced matter filed on behalf of Brazier Forest Products, Inc. The Exceptions address and propose to correct an error in the Proposed Order. The Proposed Order indicates that all facilities that received a Notice dated November 30, 1988 were included on the Inventory of Confirmed Releases; in fact, those that filed an Answer and a Request for Contested Case Hearing, as did Brazier Forest Products, Inc., were not listed on the Inventory. The proposed Exceptions suggest changes to the Order to make this necessary correction.

Very truly yours,



James E. Benedict

Enclosure

JEB:hm

c: Fred Hansen, Director, DEQ
Luther Steinhauer, Portland Manager
John M. Brazier, President

1 STATE OF OREGON

2 ENVIRONMENTAL QUALITY COMMISSION

3

4 In the Matter of)
5 SITE INVENTORY LISTINGS) BRAZIER FOREST PRODUCTS,
6) INC.'s
7) EXCEPTIONS TO ORDER
8) DISMISSING CONTESTED CASE
9) PROCEEDINGS

8 Brazier Forest Products, Inc. ("Brazier") hereby excepts
9 to the Proposed Order Dismissing Contested Case Proceedings
10 (hereinafter "Order Dismissing") mailed to Brazier by certified
11 mail dated August 29, 1989.

12 BACKGROUND

13 By letter dated November 30, 1988, the Director of the
14 Department issued Orders and Notices of Opportunity for Contested
15 Case Hearing ("Listing Order") to the present owners of 325
16 facilities in the State of Oregon. The Listing Order stated that
17 the Listing Order would be effective unless an Answer and Request
18 for Contested Case Hearing was filed within 15 days of the receipt
19 of the Notice and Listing Order. The November 30, 1988 letter
20 also stated that the facility identified in the Proposed Order
21 would not be placed on the Inventory of Confirmed Releases, if an
22 Answer and Request for Contested Case Hearing was submitted within
23 15 days of receipt of the Notice.

24 //
25 //
26

1 By letter dated December 14, 1988, Brazier Forest
2 Products, Inc. filed timely a Request for Contested Case Hearing
3 and Answer.

4 Brazier understands that 209 similar Requests were filed
5 with the Commission.

6 The Commission's Order is in error because it indicates
7 that all 325 facilities that received the Listing Order were
8 listed on the Inventory of Confirmed Releases when in fact the 210
9 facilities that requested a contested case hearing were not placed
10 on the Inventory of Confirmed Releases.

11 EXCEPTION

12 Accordingly, Brazier Forest Products, Inc. excepts to
13 paragraph 1 a) and d) and to paragraph 2 of the Proposed Order and
14 suggests the following changes:

15 1. Findings of Fact

16 a. On November 30, 1988, the Director of the
17 ¶ Department of Environmental Quality (DEQ) issued
18 ¶ **conditional** orders listing 325 facilities on an
19 ¶ Inventory of Confirmed Releases, pursuant to ORS
20 466.557 (1987), which orders were to become
21 **effective only if the recipient of an Order did not**
22 **timely file an Answer and a Request for Contested**
23 **Case Hearing within fifteen (15) days of receipt of**
24 **the Order.**

21 d. On August 29, 1989, the Director rescinded the
22 Inventory of Confirmed Releases developed under the
23 1987 law and dismissed all DEQ orders listing
24 ¶ facilities on such Inventory, and dismissed all
25 **conditional Orders subject to Request for Contested**
26 **Case Hearing that proposed to list facilities on**
such Inventory. No facilities are currently listed
on an Inventory of Confirmed Releases.

25 //
26 //

1 2. Conclusion of Law

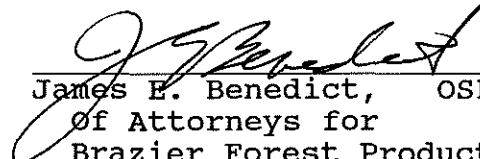
2 HB 3235, the rescision of the Inventory of Confirmed
3 Releases, and the dismissal of all orders listing
4 facilities on such Inventory, and the dismissal of
5 all conditional Orders subject to Request for
6 Contested Case Hearing that proposed to list
7 facilities on such Inventory, render these matters
8 moot.

9 Brazier Forest Products, Inc. respectfully requests that
10 changes pursuant to these exceptions be made prior to entry of the
11 Order.

12 DATED this 29th day of
13 September, 1989.

 Respectfully submitted,

 SCHWABE, WILLIAMSON & WYATT


 James E. Benedict, OSB#76059
 Of Attorneys for
 Brazier Forest Products, Inc.

Attorneys at Law

Reply to Washington office

October 13, 1989

Environmental Quality Commission
811 S.W. 6th Avenue
Portland, Oregon 97204

Re: City of Klamath Falls, Salt Caves Hydroelectric
Project

Dear Sirs:

I am counsel for the City of Klamath Falls, proponent of the Salt Caves Hydroelectric Project. The City, today for the first time, was notified that on August 25, 1989, various environmental parties filed a Petition For Declaratory Ruling seeking the revocation of the Section 401 certification issued by the Department to the City. The Petition was not served on the City by the environmental parties despite the City's obvious interest in its contents.

Fairness, at least, dictates that the Petition be denied owing to the late notification to the City and the City's resulting inability to submit a meaningful response. The City has invested millions of dollars in the Project of which the 401 certification is a key element. It would be highly objectionable for this Commission to take any action affecting that certification at the behest of the environmental parties given the lack of notice to the City.

The City also supports the reasons for denial of the Petition set forth in the Department's report to EQC on this matter. As stated by the Department, the Federal Energy Regulatory Commission (FERC) in a Draft Environmental Impact Statement (DEIS) issued last month, identified the No-Dam Alternative as a preferred alternative as compared with the project configuration certified by DEQ. While this action may ultimately render the existing certification moot, the DEIS at this point is only a draft. FERC in its Final Environmental Impact Statement and in its subsequent licensing decision may opt to change the draft. Thus, any action EQC may take at this time based on the existence of the DEIS is premature.

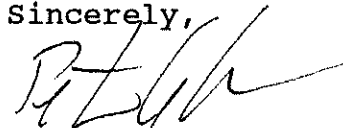
Page Two
Environmental Quality Commission
October 13, 1989

It is hard to understand how any party is prejudiced if the relief sought by the Conservation Parties is denied. There is no possibility that the No-Dam Alternative will be licensed and constructed without further DEQ review: Both the Department and the City agree that such review must take place before a final and effective (FERC) license can be issued.

The environmental parties complain that DEQ should not be required to defend its certification decision while at the same time preparing to evaluate the No-Dam Alternative. But the litigation in which the Department and the City are jointly defending the certification is now stayed in order to give the City an opportunity to evaluate the No-Dam Alternative. Thus, the Department is not being asked to expend its resources needlessly.

In sum, it may indeed be likely that the No-Dam Alternative will be the subject of DEQ review. The City believes such alternative has very positive water quality impacts, including (as found in the DEIS) a lowering of water temperatures critical for the wild trout population in the Klamath River. The City Council has stated that it is willing to move forward with the No-Dam Alternative. But at this time, until DEQ has a concrete proposal before it and has acted on that proposal, any action EQC might take in granting the Petition, particularly when such action is opposed by DEQ, is not warranted. The Petition should be denied.

Sincerely,



Peter Glaser

cc: City of Klamath Falls
Richard M. Glick
Ronald O. Nichols
Karl Anuta



ASSOCIATION of OREGON SEWERAGE AGENCIES

PO Box 68592, Portland, Oregon 97268-0592

Member Agencies

Albany
Arch Cape
Service District
Bandon
Bear Creek Valley
Sanitary Authority
Bend
Boardman
Canby
Charleston Sanitary District
Clackamas County
Dep't. of Utilities
Clatskanie
Coos Bay
Corvallis
Cottage Grove
Culver
The Dalles
Douglas County
Engineer Dept.
Enterprise
Estacada
Eugene
Gervais
Green Sanitary District
Gresham
Hermiston
Hood River
John Day
Klamath Falls
Lebanon
McMinnville
Medford
Molalla
Mt. Angel
Myrtle Creek
Newberg
North Bend
North Tillamook County
Sanitary Authority
Nyssa
Oak Lodge
Sanitary Dist.
Pacific City
Sanitary District
Philomath
Portland Bureau of
Environmental Services
Redwood
Sewer Service Dist.
Roseburg Urban
Sanitary Authority
Salem
Sandy
Seaside
Shady Cove
Silverton
Silverton
South Suburban
Sanitary District
Springfield
St. Helens
Sutherlin
Sweethome
Tillamook
Troutdale
Unified Sewerage Agency
Veneta
Wasco
Wilsonville
Winston
Woodburn

October 17, 1989

Environmental Quality Commission
811 S.W. Sixth Avenue
Portland, Oregon 97204

Dear Commissioner:

SUBJECT: SLUDGE MANAGEMENT PROGRAM

The Association of Oregon Sewerage (AOSA) is pleased to provide comment on the above referenced subject which is to be addressed at your meeting of October 19, 1989.

Enclosed for your review and consideration is a brief position paper prepared by the Sludge Management Committee of AOSA. Our Association continues to be supportive of Beneficial Use as the primary method of utilizing this resource. We also support the continued involvement of the Department of Environmental Quality (DEQ) in regulating this program.

However, due to recent developments in the parallel program of Pretreatment we are concerned that DEQ ultimately accepts the full responsibility for the administration of the Sludge Program such that local jurisdictions are not placed in a position of being responsible to two separate regulatory agencies administering the same program. As with the Pretreatment Program we are concerned with the apparent lack of clarity as to the full program expectations between the State and Federal agencies.

Chair
William C. Gaffi
796-7181

Vice Chair
Floyd Collins
588-6380

Secretary/Treasurer
Michael Read
655-2291

Environmental Quality Commission
October 17, 1989
Page 2

AOSA pledges the continuation of our cooperative involvement with DEQ in order to assure proper administration and management of the Sludge Disposal Program. If we may provide any additional information please contact us.

Sincerely,



Floyd W. Collins
Vice Chair

A:EQC.sm
Attachment:Position Paper
cc:Fred Hansen
Mary Halliburton
Steve Simonson

October 16, 1989

Association of Oregon Sewerage Agencies

RE: Position Paper on Sludge Management

AOSA is pleased to have the opportunity to clarify its position on the future of sludge management in the State of Oregon as part of EQC's October 19, 1989, workshop. AOSA believes that the State of Oregon should be involved in the sludge management arena and, in fact, AOSA believes the State has the responsibility to its citizens to assure that the sludge management practices result in maximum benefit to the environment. We believe DEQ is in the best position to monitor sludge programs. We submit this position paper to the EQC to reiterate our earlier support for DEQ's continued involvement in the sludge program. This support includes a recommendation that DEQ be staffed at a level that provides a strong management program and ensures continuation of our (state and local agencies) good management practices.

AOSA gives its support with expectations that DEQ will continue to manage the program in the near term under the Oregon Administrative Rules and in the future as a delegated state in conformance with the Federal Regulations. We believe that DEQ should make the commitment to EQC to become a delegated state and present its proposal and schedule to do so.

AOSA gives its support with the expectation that DEQ will develop a plan, and secure EPA approval, to resolve the current apparent discrepancy between existing Federal Solid Waste regulations (Part 257) and OAR 340-50. The particular concern is to avoid pH adjustment for crops which are not cadmium accumulators.

It appears likely that the increased DEQ staffing will be funded by additional permit fees. AOSA gives its support with the expectation that permitted sources will have the opportunity to comment on the DEQ staffing plan, anticipated scope of sludge management activities, and level of anticipated expenditures.

Sludge, which is a product of our efforts to improve water quality, is a resource. That resource should continue to be used so that the stated goal of Oregon to recycle sludge remains a reality.

In summary, AOSA supports a staffing level increase for DEQ and feels that a sound, strong DEQ program will benefit the environment and the citizens of the State of Oregon.

**Oregon Department of Environmental Quality
811 S.W. Sixth Ave.
Portland, Oregon 97204**

For More Information: Carolyn Young
229-6271 (Portland)
1-800-452-4011

FOR IMMEDIATE RELEASE - October 11, 1989

**EQC TO CONSIDER PULP MILL PROPOSAL AND OTHER ISSUES AT
MARYLHURST MEETING**

Whether to allow a discharge of wastewater to the Columbia River from the proposed WTD pulp mill is among several environmental issues on the agenda of the Oregon Environmental Quality Commission (EQC) when it meets at Marylhurst College on October 19 and 20. The Commission will hold a workshop and a regular meeting during the two-day session.

The regular meeting will begin at 8:30 a.m. on October 20. The Commission will continue its discussions on the proposed Port Westward pulp mill. The Commission must approve any significant new waste discharge to the Columbia and other Oregon rivers before DEQ issues a permit. The Commission has discussed the proposal at previous meetings and asked the Department to provide more information to assist with its deliberations. Of primary concern is TCDD-dioxin which has been found in bleached pulp mill effluent.

Also on the agenda are new rules to protect Oregon's groundwater. The proposed rules would establish a policy to use the best available pollution control technologies to protect groundwater, require groundwater monitoring and reporting in permits, establish methods for setting pollution limits in groundwater, and establish methods for selecting cleanup action plans once groundwater has been polluted.

The Commission will also consider funding for a sewer safety net program to assist low income people in paying sewer assessments and a variance from compost rules to allow Reidel Environmental Inc. to store composted garbage at its facility to be built in Portland.

A report on DEQ's new enforcement policy is the primary item on the workshop agenda on October 19 at 2:30 p.m. The new enforcement policy, adopted by the EQC in March 1989, has resulted in more and higher penalties. The new policy provided needed consistency and predictability in applying enforcement actions. The report shows that by the end of August, the new policy resulted in 174 formal enforcement actions, including warnings and penalties, as compared to 85 at the same time in 1988. The amount of penalties issued during the first six months of this year totals \$152,890 compared to a total of \$94,210 in penalties issued during all of 1988.

(more)

Regular EQC Meeting--October 20, 1989

8:30 a.m.

**Marylhurst College
Administration Building, Room 200
Marylhurst, Oregon**

Time will be reserved at 8:50 a.m. to hear from citizens about pollution problems of special concern to them.

Work Meeting-- October 19, 1989

2:30 p.m.

**Marylhurst College
Commons Building, Room C-106**

The Commission will hold a strategic planning work session on October 18, 1989 at 11:30 a.m. in Room C-106, Commons Building, Marylhurst College.

The Environmental Quality Commission is a five-member citizen panel appointed by the Governor to set the environmental policies and regulations for Oregon. The EQC is staffed by the Department of Environmental Quality.

#

**SPECIAL
EDITION!**

FOREST VOICE

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Permit No. 203

A publication of the Native Forest Council

Volume I, Number 1

September, 1989

An Urgent Appeal to Citizens and Congress Stop the Destruction of the Last Remnants of the Public's Native Forests



*Clearcut logging devastates Mt. Hood National Forest in Oregon.
Photo by Project Lightmask.*

*Americans are concerned with the destruction of tropical rainforests,
yet fail to take a hard look at what the timber industry
is doing to our national forests.*

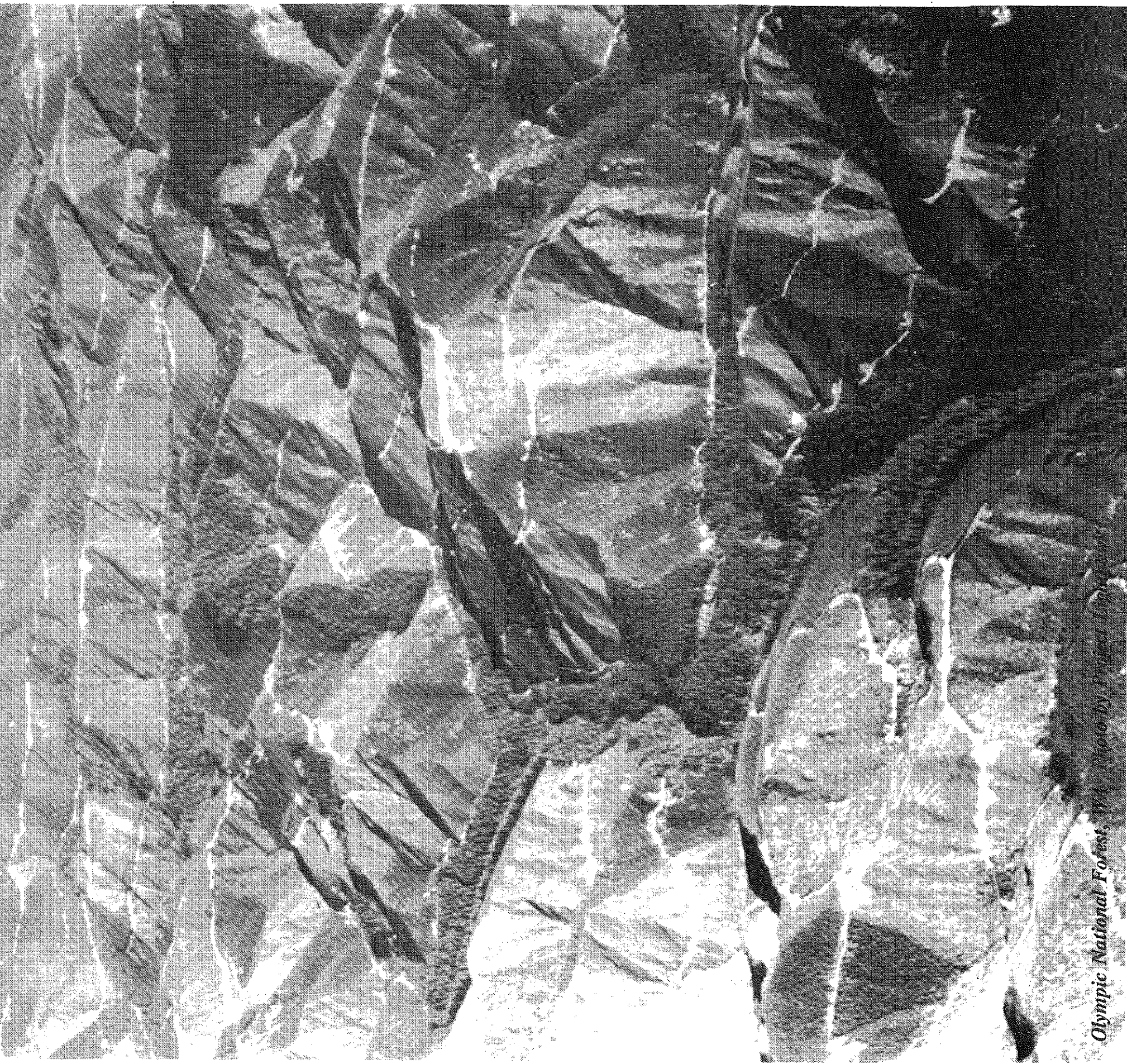
In 1949 the cut from the entire National Forest System, coast to coast, was just 2.6 billion board feet. Last year, 16 billion board feet of public and private timber were hauled out of Washington and Oregon alone. This cut represents an unbelievable line of log trucks more than 20,000 miles long! And twice as much public and private raw material was exported as was cut on our federal Northwest forestlands.

Less than five percent of the nation's original native forestlands remain. In Oregon and Washington, less than ten percent of this ancient old-growth forest remains. Yet, ten square miles are logged every month in Oregon alone. And, the Forest Service and Bureau of Land Management intend to cut most of the remaining unprotected old-growth forests according to their 1989 ten-year Forest Plans.

A catastrophe for the nation and for the entire world! Your public cry of outrage can stop it.

Brazil? No, this is an American National Forest!

The entire world is concerned with global warming and the destruction of the tropical rainforests, yet Americans fail to take a hard look at what the Administration, Congress and the timber industry are doing to our federal temperate rainforests here at home, in their own backyards.



Olympic National Forest, WA. Photo by Frances Longmire

M E M O R A N D U M

TO : Fred Hansen and Lydia Taylor
FROM : Bill Hutchison
DATE : September 13, 1989
RE : WTD
Our File No. 890011

I've reflected on our last meeting and where we go from here and here are some of my (and Emery's) thoughts:

1. We need to separate permit conditions as to which the commission might make policy recommendations and the allocation decision which arguably could be conditional also;
2. The primary conditions relative to the allocation are whether the river is water quality limited and whether or not this discharge would cause it to be even if it is not; a question that should be resolved as a part of this issue is the distinction between river reach and river; we may need to build our case for treating the reach involved where the river is a substantial as the Columbia;
3. This may be a good case which could stand for the proposition that the excess capacity of a river, particularly when measured in terms of this reach, might be utilized to reach a broader environmental objective, i.e. ratcheting technology up at the other sources to produce an overall benefit to the river;
4. We need to determine whether or not EPA was right or wrong when it said that no discharge would be permitted to commence unless there was no problem of water quality limitation and none would be created by the discharge;
5. If the discharge is ultimately subject to final EPA approval, then perhaps our allocation decision could simply condition the allocation upon a final EPA plan for the river and approval of the discharge;
6. There seems to be a general concern that WTD be included in the allocation process; we'll want some comfort as to what it takes to ensure that they are included even though there may be some conditions precedent to their actual discharge;

MEMORANDUM - September 13, 1989

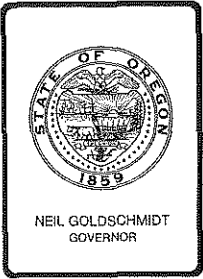
Page 2

TO : Fred Hansen and Lydia Taylor
FROM : Bill Hutchison

7. It will be good to get staff's input on the difference between the commission's policy recommendations to staff on permit conditions and the findings and conditions, if any, the commission should attach to its allocation authorization.
8. We may need AG advice regarding applicability of WLA rule, rule making procedural issues raised at hearing, etc.

WPH/kd

cc: Emery Castle
Genevieve Pisarski Sage
Bill Wessinger
Henry Lorenzen



Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

December 4, 1989

XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX, XX 99999-9999

ATTN: Manager of Environmental Affairs

RE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Notice of Final EQC Order Dismissing
Contested Case Proceedings Order Number SA-891-9999

This letter notifies you that the Environmental Quality Commission has dismissed the contested case proceeding on the Order referenced above. By letter of August 29, 1989, the Department of Environmental Quality (Department) informed you of three actions regarding the captioned Order: (1) The Department had withdrawn the Order, issued November 30, 1988, which proposed to list the captioned facility on an Inventory of Confirmed Releases; (2) the Department had rescinded the Inventory of Confirmed Releases; and (3) the Department was requesting the Environmental Quality Commission to dismiss the contested case proceeding on the Order. The Environmental Quality Commission approved a final Order dismissing the contested case proceeding on the captioned Order at its October 20, 1989 meeting. A copy of the Commission's order is attached.

To implement the 1989 Legislature's amendments to the Inventory process (House Bill 3235), the Department is currently drafting rules to establish new criteria and procedures for (1) identifying facilities where a release of hazardous substances has been confirmed, the Confirmed Release List; and (2) identifying facilities where, in addition, a preliminary assessment has been completed and a determination made that further action is needed to assure protection of public health and the environment, the Inventory. The Department expects to submit these rules for public comment in early 1990 and for Environmental Quality Commission adoption in the Spring of 1990. The Department may evaluate the captioned facility under the rules finally adopted. However, prior to adding any facility to the new list of Confirmed Releases or the Inventory, the Department will notify owners

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Page 2

and operators of the facility, if known, of its intent and provide them with an opportunity to comment on the proposed listing..

If you have any questions, you may call the Site Assessment Section at 229-5733.

Sincerely,

Michael Downs, Administrator
Environmental Cleanup Division

Attachment

cc: Members, Environmental Quality Commission
Linda Zucker, EQC Hearings Officer
Northwest Region, DEQ
Oregon Department of Justice

CERTIFICATE OF SERVICE

I certify that I served by Certified Mail a true copy of the foregoing document upon each person designated on the attached mailing list:

J. Dan Gause

12/4/89

Date

DEPARTMENT OF ENVIRONMENTAL
QUALITY

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

In the Matter of:) ORDER DISMISSING
) CONTESTED CASE
SITE INVENTORY ORDERS NUMBERS) PROCEEDINGS
)
)
SA-891-1, SA-891-5, SA-891-6,)
SA-891-8, SA-891-10, SA-891-11,)
SA-891-12, SA-891-13, SA-891-14,)
SA-891-15, SA-891-16, SA-891-18,)
SA-891-20, SA-891-22, SA-891-23,)
SA-891-24, SA-891-25, SA-891-26,)
SA-891-27, SA-891-31, SA-891-32,)
SA-891-37, SA-891-39, SA-891-40,)
SA-891-43, SA-891-46, SA-891-50,)
SA-891-53, SA-891-54, SA-891-56,)
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SA-891-63, SA-891-66, SA-891-68,)
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SA-891-701, SA-891-703, SA-891-708,)
SA-891-713, SA-891-717, SA-891-721,)
SA-891-722, SA-891-724, SA-891-728.)

1 1. Findings of Fact

2 a. On November 30, 1988, the director of the Department of
3 Environmental Quality (DEQ) issued orders listing 325 facilities on an
4 Inventory of Confirmed Releases, pursuant to ORS 466.557 (1987) which orders
5 became effective unless the recipient filed an Answer and a Request for a
6 Contested Case Hearing within fifteen (15) days of receipt of the order.

7 b. Two hundred and fourteen (214) requests for a contested case
8 hearing on the orders were filed with this Commission. The facilities for
9 which these requests were filed were not listed on the Inventory of

1 Confirmed Releases pending the hearings. The 213 orders subject to a
2 contested case hearing and to this order are captioned above.

3 c. ORS 466.557 was amended by the 1989 Legislative Assembly,
4 requiring DEQ to replace the Inventory of Confirmed Releases with a new
5 process for listing sites having a confirmed release of hazardous
6 substances. 1989 OR Law Ch. 485 (HB 3235)..

7 d. On August 29, 1989, the Director rescinded the Inventory of
8 Confirmed Releases developed under the 1987 law, dismissed all DEQ orders
9 listing facilities on such Inventory, and dismissed all orders subject to
10 pending contested case hearings. No facilities are currently listed on an
11 Inventory of Confirmed Releases.


12 2. Conclusion of Law

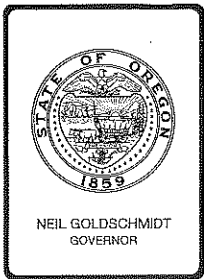
13 HB 3235, the rescission of the Inventory of Confirmed Releases, and the
14 dismissal of all orders as described above render these matters moot.

IT IS THEREFORE ORDERED that the above-referenced contested case
proceedings are dismissed without prejudice to any party.

DATED this 20 day of October, 1989.

On behalf of the Environmental Quality Commission


William P. Hutchison, Jr.
Chair



Environmental Quality Commission

811 SW SIXTH AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

REQUEST FOR EQC ACTION

Meeting Date: October 20, 1989

Agenda Item: Q

Division: Air Quality

Section: Asbestos Program

SUBJECT:

Public Hearing Authorization: Asbestos Abatement Program -
Rule Amendments

PURPOSE:

The Asbestos Control Program is submitting draft rules previously announced at the Environmental Quality Commission (EQC, Commission) meeting on June 2, 1989, and requests Commission authorization to hold rulemaking hearings. The purpose of the rulemaking hearing authorization is to move forward an eight month effort to fine tune the asbestos rules after almost two years of experience under the present rules.

The Section is also reporting on the June 2, 1989, Variance for Workers Who Disturb or Remove Asbestos in Residential Facilities, as well as the impact of the temporary rule authorized at the same meeting allowing certain additional experience requirements to qualify for supervisor's training.

ACTION REQUESTED:

- Work Session Discussion
 - General Program Background
 - Potential Strategy, Policy, or Rules
 - Agenda Item ___ for Current Meeting
 - Other: (specify)
- Authorize Rulemaking Hearing
- Adopt Rules
 - Proposed Rules Attachment A
 - Rulemaking Statements Attachment B
 - Fiscal and Economic Impact Statement Attachment C
 - Public Notice Attachment D

Meeting Date: October 20, 1989
Agenda Item: Q
Page 2

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 Proposed Order Attachment _____

- Approve Department Recommendation
 - Variance Request Attachment _____
 - Exception to Rule Attachment _____
 - Informational Report Attachment _____
 - Other: (specify) Attachment _____

Asbestos program and Residential Advisory Committee will give an oral informational report concerning progress toward resolving asbestos abatement problems in the residential industry.

DESCRIPTION OF REQUESTED ACTION:

A public hearing is proposed to receive comments on amendments to the asbestos rules. These amendments would:

- Create a definition of interim storage of asbestos-containing material
- Apply work practices to potentially friable asbestos-containing material
- Provide practical adjustments to asbestos abatement project notification and filing rules
- Require air clearance monitoring upon completion of abatement projects
- Provide practical adjustments to training and certification rules
- Make permanent the temporary rules concerning prerequisites for Supervisor Training

AUTHORITY/NEED FOR ACTION:

- Required by Statute: _____ Attachment _____
 Enactment Date: _____
- Statutory Authority: ORS 468.893, 468.020 Attachment _____
- Pursuant to Rule: _____ Attachment _____
- Pursuant to Federal Law/Rule: _____ Attachment _____
- Other: _____ Attachment _____

Time Constraints:

As the full-scale supervisor's temporary rules expire December 5, 1989, the permanent rules should be adopted as soon as possible.

DEVELOPMENTAL BACKGROUND:

<u> </u> Advisory Committee Report/Recommendation	Attachment	<u> </u>
<u> </u> Hearing Officer's Report/Recommendations	Attachment	<u> </u>
<u> </u> Response to Testimony/Comments	Attachment	<u> </u>
<u> </u> Prior EQC Agenda Items: (list)		
	Attachment	<u> </u>
<u> </u> Other Related Reports/Rules/Statutes:		
	Attachment	<u> </u>
<u> X</u> Supplemental Background Information	Attachment	<u> E</u>

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

1. The general public probably will not react to these draft rules. However, there is a growing awareness among home owners and potential buyers who are concerned about the presence of asbestos in residences. These people have a vital interest in the outcome of the residential rule revisions contemplated by the Asbestos Advisory Committee and its Residential Subcommittee.
2. There is a mixed reaction to the Variance allowing unlicensed contractors and uncertified workers to remove residential asbestos. The industry believes the Variance is necessary until the problems of asbestos removal size limitations and work practices are resolved. However, at least two environmental consultants have stated that the Variance represents a dereliction of the Department of Environmental Quality's (DEQ, Department) duty to protect public health and the environment.
3. The asbestos training providers have discussed a number of the amendments in Division 33 including the proposal to change the course scheduling requirements giving consideration to emergency situations. The training providers support the proposed licensing and accreditation rule changes.

4. When consulted about air clearance monitoring, 80 percent of Oregon-based abatement contractors favored state specified air clearance monitoring. In fact, most of these contractors were already conducting some form of post abatement sampling.
5. The Oregon Asbestos Advisory Board, the DEQ Advisory Panel created by statute with state agency and public representatives, has undertaken careful review, evaluation and final acceptance of the rules contained in Attachment A. These rules represent the total effort of the Board's five most recent meetings beginning February 17, 1989. The Board recommends that the Environmental Quality Commission authorize public hearings to receive comments on the amendments.

PROGRAM CONSIDERATIONS:

The proposed rules will not have significant effect on the program's resources or personnel. The rules, in general, will reduce paperwork, increase protection of the environment and increase program flexibility. The proposed new requirements for air clearance monitoring will generate some additional paperwork such as written air quality test results. This additional work will be handled by the section's new clerical specialist. The Department expects to have improved confidence in the results of asbestos abatement projects.

DESCRIPTION OF PROPOSED CHANGES AND ALTERNATIVES CONSIDERED:

Interim Storage Definition

OAR 340-25-455(20): The Department has witnessed improper storage of asbestos-containing waste materials outside containment areas. A new rule (OAR 340-25-465(13)(b)) was created establishing an interim storage definition to protect public health and the environment from asbestos spread by improper storage after removal. The rule allows for flexibility by specifying performance requirements.

Clarification of Friable Materials

OAR 340-25-465(4)(b) and (6): The asbestos industry in Oregon and throughout the country has misunderstood the term "friable". The term generally means a solid material which

can be reduced to dust by hand pressure. Some abatement contractors have utilized work practices which transform nonfriable materials to dust creating the same hazardous condition as with friable materials. Allowing such work practices would cause public exposure to a known carcinogen. The proposed rule will prevent unnecessary human exposure by requiring protective practices when contractors create friable asbestos from originally nonfriable materials.

Non-Refundable \$75.00 Notification Fee

OAR 340-25-465(5): This proposed rule is intended to recover costs associated with processing Notifications for Asbestos Removal. Instituting this fee would not affect the current fee schedule, but would cause the first \$75 of any notification fee to be non-refundable. The asbestos industry is very active with numerous project cancellations, re-starts and change orders. Although the current rules do not specify a refund policy, the Department has been allowing for refunds. This constitutes significant cost to the Department without the possibility of monetary recovery for servicing these changes. Without a non-refundable application fee, the industry will continue to drain economic resources intended to support the program. The \$75 fee would be equivalent to the non-refundable portion of the Air Contaminant Discharge Permit fees. The Department may need to appear before the legislative Emergency Board to gain authorization for this fee. Emergency Board approval would be sought after hearing authorization and before final rule adoption.

No Prior Notification Exception

OAR 340-25-465(5)(a)(C): Industry has complained to the Department that it is unable to utilize advantageous asbestos abatement situations due to the ten day notification period prior to commencement. The Department presently allows emergency abatement work to protect life and property. The proposed rule will also allow abatement work to begin whenever unexpected events create an opportunity to remove asbestos (i.e when steam plants go down allowing work on hot pipes, or when ships arrive unexpectedly and need abatement).

Air Cleaning Monitoring

OAR 340-25-465(6)(i): In considering whether to require air clearance sampling, staff members conducted a survey of full-scale contractors to learn about their usual post abatement air sampling practices. In almost every case, air clearance sampling was required by either contract specifications, insurance requirements, or as quality control. These same contractors indicated they would accept, if not welcome, state air clearance requirements.

In considering alternatives the staff examined various acceptable asbestos levels, what size jobs should be sampled, and whether these regulations should be passively administered (only requiring copies of test results), or actively administered (conducting side-by-side air clearance sampling to ensure compliance with sampling and analytic methods).

Repeal of Time Limited Rules and Redundant Rules

OAR 340-33-030(9), & (12) Created special provisions in the rules which expired January 1, 1989. Such time bounded rules become irrelevant upon expiration and should be repealed. OAR 340-33-030(12) reiterates OAR 468.345, this is redundant, adds nothing to the rules that does not already exist and should be repealed.

Permanent Supervisor Training Rules

OAR 340-33-050(3)(b): It was a clear recommendation of the Asbestos Advisory Board that there should be more avenues by which qualified persons could become supervisors. A temporary rule was authorized June 2, 1989, allowing persons with six months of maintenance or construction experience and a worker's card to qualify for the supervisor's course. Many people, including numerous school personnel, have availed themselves of this opportunity. Others could be expected to do so in the future with the adoption of this rule.

Limitation on Transferable Prior Training

OAR 340-33-080(2): The existing rule allows training completed before January 1, 1987 to be accepted as prior training, provided the applicant has maintained proficiency. When accepted, the applicant is eligible to take refresher

Meeting Date: October 20, 1989
Agenda Item: Q
Page 7

training and be certified in Oregon. As such, this provision allows anyone who was trained before the date to apply for refresher training any time in the future, which when exercised will cause administrative difficulties verifying the necessary information and could allow for certification of workers based on obsolete training. In its place staff have created new provisions which limit prior training consideration to the two years prior to application. Other state and federal Asbestos Hazard Emergency Response Act (regarding schools) certifications are either one or two years. The Department believes this is a reasonable time frame during which prior training could be accepted.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

After due consideration of the rules approved by the Asbestos Advisory Board (and Residential Subcommittee), the Department joins the Advisory Board in recommending public hearing authorization.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The Advisory Board also recommended the size limitations for small-scale abatement projects be expanded so that a greater number of residential projects would be classified as "small scale" and subject to less rigorous containment requirements. The Department is not supporting this recommendation in order to be consistent with both agency policy and state statute which require asbestos regulations to be compatible with the Accident Prevention Division standards.

ISSUES FOR COMMISSION TO RESOLVE:

None

INTENDED FOLLOWUP ACTIONS:

10/29/89 Provide hearing notice to Secretary of State
11/01/89 Secretary of State bulletin publishes notice
11/16/89 Portland hearing

Meeting Date: October 20, 1989
Agenda Item: Q
Page 8

11/17/89 Eugene hearing
12/11/89 Prepare final staff report and Hearing Officer's
report
01/12/90 Submit final rules to EQC for adoption

Approved:

Section: Sarah V. Armitage
Division: Nick D. [unclear]
Director: Paul Henshaw

Report Prepared By: Bruce E. Arnold

Phone: 229-5506

Date Prepared: September 20, 1989

BEA:r
ASB\AR1334 (9/89)

OREGON ADMINISTRATIVE RULES
DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 340 DIVISION 25
ASBESTOS ABATEMENT REQUIREMENTS

POLICY

340-25-450

The Commission finds and declares that certain air contaminants for which there is no ambient air standard may cause or contribute to an identifiable and significant increase in mortality or to an increase in serious irreversible or incapacitating reversible illness, and are therefore considered to be hazardous air contaminants. Air contaminants currently considered to be in this category are asbestos, beryllium, and mercury. Additional air contaminants may be added to this category provided that no ambient air standard exists for the contaminant, and evidence is presented which demonstrates that the particular contaminant may be considered as hazardous. It is hereby declared the policy of the Department that the standards contained herein and applicable to operators are to be minimum standards, and as technology advances, conditions warrant, and Department or regional authority rules require or permit, more stringent standards shall be applied.

DEFINITIONS

340-25-455

As used in this rule, and unless otherwise required by context:

- (1) "Asbestos" means...the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, actinolite and tremolite."
- (2) "Asbestos-containing waste material" means any waste which contains commercial asbestos and is generated by a source subject to the provisions of this subpart, or friable asbestos material including, but not limited to, asbestos mill tailings, control device asbestos waste, friable asbestos waste material, asbestos abatement project waste, and bags or containers that previously contained commercial asbestos.
- (3) "Asbestos abatement project" means any demolition, renovation, repair, construction or maintenance activity of any public or private facility that involves the repair, enclosure, encapsulation, removal, salvage, handling or disposal of any material with the potential of releasing asbestos fibers from asbestos-containing material into the air."

NOTE: An asbestos abatement project is not considered to be a source under OAR 340-25-460(2) through (6). Emergency fire fighting is not an asbestos abatement project.

- (5) "Asbestos-containing material" means asbestos or any material containing at least 1% asbestos by weight, including particulate asbestos material.
- (12) "Commercial asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.
- (13) "Commission" means the Environmental Quality Commission.
- (14) "Demolition" means the wrecking or removal of any structural member of a facility together with related handling operations.
- (15) "Department" means the Department of Environmental Quality.
- (16) "Director" means the Director of the Department or regional authority and authorized deputies or officers.
- (17) "Facility" means all or part of any public or private building, structure, installation, equipment, or vehicle or vessel, including but not limited to ships.
- (18) "Friable asbestos material" means any asbestos-containing material that hand pressure can crumble, pulverize or reduce to powder when dry."
- (19) "HEPA filter" means a high efficiency particulate air filter capable of filtering 0.3 micron particles with 99.97 percent efficiency.
- (20) "Interim storage of asbestos containing waste material" means the storage of asbestos containing waste material which has been placed in a container outside a regulated area until transported to an authorized landfill.
- (21) "Hazardous air contaminant" means any air contaminant considered by the Department or Commission to cause or contribute to an identifiable and significant increase in mortality or to an increase in serious irreversible or incapacitating reversible illness and for which no ambient air standard exists.
- (25) "Particulate asbestos material" means any finely divided particles of asbestos material.
- (26) "Person" means any individual, corporation, association, firm, partnership, joint stock company, public and municipal corporation, political sub-division, the state and agency thereof, and the federal government and any agency thereof.
- (29) "Regional authority" means any regional air quality control authority established under the provisions of ORS 468.505.

- (30) "Renovation" means altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or removed are excluded.
- (31) "Small-scale asbestos abatement project" means any asbestos abatement project which meets the definition given in OAR 340-33-020(17).
- (33) "Structural member" means any load-supporting member of a facility, such as beams and load-supporting walls; or any non-supporting member, such as ceilings and non-load-supporting walls.

GENERAL PROVISIONS

340-25-460

- (1) **Applicability.** The provisions of these rules shall apply to any source which emits air contaminants for which a hazardous air contaminant standard is prescribed. Compliance with the provisions of these rules shall not relieve the source from compliance with other applicable rules of the Oregon Administrative Rules, Chapter 340, or with applicable provisions of the Oregon Clean Air Implementation Plan.
- (7) **Delegation of authority.** The Commission may, when any regional authority requests and provides evidence demonstrating its capability to carry out the provisions of these rules relating to hazardous contaminants, authorize and confer jurisdiction within its boundary until such authority and jurisdiction shall be withdrawn for cause by the Commission.

EMISSION STANDARDS AND PROCEDURAL REQUIREMENTS FOR ASBESTOS

340-25-465

- (4) **Asbestos abatement projects.** ~~[All persons intending to conduct or provide for the conduct of]~~ Any person who conducts an asbestos abatement project shall comply with ~~[the requirements set forth in]~~ OAR 340-25-465(5), (6), and (7). The following asbestos abatement projects are exempt from these requirements:
 - (a) Asbestos abatement conducted in a private residence which is occupied by the owner and the owner-occupant performs the asbestos abatement.
 - (b) ~~[Removal of vinyl asbestos floor tile that is not attached by asbestos-containing cement; exterior asbestos roofing shingles; exterior asbestos siding; asbestos-containing cement pipes and sheets; and other materials approved by the Department provided that the materials are not caused to become friable or to release asbestos fibers. - Precautions taken to ensure that this exemption is maintained may include but are not limited to: -]~~

Removal of nonfriable asbestos-containing materials that are not broken, crumbled, pulverized or reduced to dust until disposed of in an authorized disposal site. This exemption shall end whenever the asbestos containing material becomes friable or releases asbestos fibers into the environment.

- ~~{(A) Asbestos-containing materials are not sanded, or power sawn or drilled;~~
 - ~~(B) Asbestos-containing materials are removed in the largest sections practicable and carefully lowered to the ground;~~
 - ~~(C) Asbestos-containing materials are handled carefully to minimize breakage throughout removal, handling, and transport to an authorized disposal site;~~
 - ~~(D) Asbestos-containing materials are wetted prior to removal and during subsequent handling, to the extent practicable.}~~
- (c) Removal of less than ~~{0.5}~~ three square feet or three linear feet of friable asbestos-containing material provided that the removal of asbestos is not the primary objective and ~~{the following conditions are met:}~~ Methods of removal are in compliance with OAR 437 Division 3 Construction 29/CFR 1926 Appendix G to 1926.58. An asbestos abatement project shall not be subdivided into smaller sized units in order to qualify for this exemption.
- ~~{(A) The generation of particulate asbestos material is minimized;~~
 - ~~(B) No vacuuming or local exhaust ventilation and collection is conducted with equipment having a collection efficiency lower than that of a HEPA filter;~~
 - ~~(C) All asbestos-containing waste materials shall be cleaned up using HEPA filters or wet methods;~~
 - ~~(D) Asbestos-containing materials is wetted prior to removal and during subsequent handling, to the extent practicable.}~~
- (d) Removal of asbestos-containing materials which are sealed from the atmosphere by a rigid casing, provided that the casing is not broken or otherwise altered such that asbestos fibers could be released during removal, handling, and transport to an authorized disposal site.

NOTE: The requirements and jurisdiction of the Department of Insurance and Finance, Accident Prevention Division and any other state agency are not affected by these rules.

- (5) **Notification Requirements.** Written notification of any asbestos abatement project shall be provided to the Department on a Department form. The notification must be submitted by the facility owner or operator or by the contractor in accordance with one of the procedures specified in subsection (a) or (b), [~~or~~-(e)] below except as provided in subsections [~~e~~] (c) [~~f~~] (d) and [~~g~~] (f) below.

The fees listed below include a \$75 nonrefundable filing fee. If an asbestos abatement project is cancelled during the ten day notification period the filing fee is forfeit and if the notification fee was less than \$75, the entire fee is forfeit.

- (a) Submit the notifications as specified in subsection (d) below and the project notification fee to the Department at least ten days before beginning any asbestos abatement project.

(A) The project notification fee shall be:

- (i) Twenty-five dollars (\$25) for each small-scale asbestos abatement project except for small-scale projects in residential buildings described in OAR 340-25-465(5)(d).
- (ii) Fifty dollars (\$50) for each project greater than a small-scale asbestos abatement project and less than 260 linear feet or 160 square feet.
- (iii) Two-hundred dollars (\$200) for each project greater than 260 linear feet or 160 square feet, and less than 2600 linear feet or 1600 square feet.
- (iv) Five hundred dollars (\$500) for each project greater than 2600 linear feet or 1600 square feet.

(B) Project notification fees shall be payable with the completed project notification form. No notification will be considered to have occurred until the notification fee is submitted.

(C) Notification of less than ten days is permitted in case of an emergency involving protection of life, health or property or where an unscheduled or unexpected event creates the opportunity to conduct an asbestos abatement project. Notification shall include the information contained in subsection (d) below, and the date of the contract if applicable. If original notification is provided by phone, written notification and the project notification fee shall be submitted within three (3) days after the start of the emergency abatement.

- (D) The Department must be notified prior to any changes in the scheduled starting or completion dates or other substantial changes or the notification will be void.
- (b) For small-scale asbestos abatement projects conducted ~~at one facility;~~ by a single contractor or a single facility owner with centrally controlled asbestos operations and maintenance the notification may be submitted as follows:
- (A) Establish eligibility for use of this notification procedure with the Department prior to use;
- (B) Maintain on file with the Department a general asbestos abatement plan. The plan shall contain the information specified in subsections (d)(A) through (d)(I) below, to the extent possible;
- (C) Provide to the Department a summary report of all small-scale asbestos abatement projects conducted at the facility in the previous three months by the 15th day of the month following the end of the calendar quarter. The summary report shall include the information specified in subsections (d)(J) through (d)(M) below for each project, a description of any significant variations from the general asbestos abatement plan; and a description of asbestos abatement projects anticipated for the next quarter;
- (D) Provide to the Department, upon request, a list of asbestos abatement projects which are scheduled or are being conducted at the time of the request.
- ~~(D)~~ (E) Submit a project notification fee of two-hundred dollars per year (\$200/year) prior to use of this notification procedure and annually thereafter while this procedure is in use.
- ~~(E)~~ (F) Failure to provide payment for use of this notification procedure shall void the general asbestos abatement plan and each subsequent abatement project shall be individually assessed a project notification fee.
- ~~(c) For small-scale asbestos abatement projects conducted by a contractor at one or more facilities, notification may be submitted as follows:~~
- (A) Establish eligibility for use of this procedure with the Department prior to use;
- (B) Maintain on file with the Department a general asbestos abatement plan containing the information specified in subsections (d)(A) through (d)(G); to the extent possible;

- (G) Provide to the Department a monthly summary of all small-scale projects performed by the 15th day of the following month including the information specified in subsections (d)(H) through (d)(M) below and a description of any significant variations from the general asbestos abatement plan for each project;
- (D) Provide to the Department, upon request, a list of asbestos abatement projects which are scheduled or are being conducted at the time of the request; and
- (E) Submit a notification fee of \$25 per monthly summary prior to the use of this notification procedure.
- (F) Failure to provide payment for use of this notification procedure shall void the general asbestos abatement plan and each subsequent abatement project shall be individually assessed a project notification fee.]

~~(d)~~(c) The following information shall be provided for each notification:

- (A) Name and address of person [intending to engage in] conducting asbestos abatement.
- (B) Contractor's Oregon asbestos abatement license number, if applicable, and certification number of the supervisor for full-scale asbestos abatement or certification number of the trained worker for a project which does not have a certified supervisor.
- (C) Method of asbestos abatement to be employed.
- (D) Procedures to be employed to insure compliance with OAR 340-25-465.
- (E) Names, addresses, and phone numbers of waste transporters.
- (F) Name and address or location of the waste disposal site where the asbestos-containing waste material will be deposited.
- (G) Description of asbestos disposal procedure.
- (H) Description of building, structure, facility, installation, vehicle, or vessel to be demolished or renovated, including address or location where the asbestos abatement project is to be accomplished.
- (I) Facility owner's or operator's name, address and phone number.
- (J) Scheduled starting and completion dates of asbestos abatement work.

- (K) Description of the asbestos type, approximate asbestos content (percent), and location of the asbestos-containing material.
- (L) Amount of asbestos to be abated: linear feet, square feet, thickness.
- (M) Any other information requested on the Department form.
- ~~{(e)}~~(d) No project notification fee shall be assessed for asbestos abatement projects conducted in the following residential buildings: site-built homes, modular homes constructed off site, condominium units, mobile homes, and duplexes or other multi-unit residential buildings consisting of four units or less. Project notification for a full-scale asbestos abatement project, as defined in OAR 340-33-020(14), in any of these residential buildings shall otherwise be in accordance with subsection (5)(a) of this section. Project notification for a small-scale asbestos abatement project, as defined in OAR 340-33-020(17), in any of these residential buildings is not required.
- ~~{(F)}~~(e) The project notification fees specified in this section shall be increased by 50% when an asbestos abatement project is commenced without filing of a project notification and/or submittal of a notification fee and when notification of less than ten days is provided under subsection (5)(a) (C) of this section.
- ~~{(g)}~~(f) The Director may waive part or all of a project notification fee. Requests for waiver of fees shall be made in writing to the Director, on a case-by-case basis, and be based upon financial hardship. Applicants for waivers must describe the reason for the request and certify financial hardship.
- ~~{(h)}~~(g) Pursuant to ORS 468.535, a regional authority may adopt project notification fees for asbestos abatement projects in different amounts than are set forth in this rule. The fees shall be based upon the costs of the regional authority in carrying out the delegated asbestos program. The regional authority may collect, retain, and expend such project notification fees for asbestos abatement projects within its jurisdiction.
- (6) Work practices and procedures. For purposes of this section, "asbestos-containing material" means friable asbestos materials and nonfriable asbestos materials that are broken, crumbled, pulverized, or reduced to dust in the course of work practices and procedures regulated by this section. The following procedures shall be employed during an asbestos abatement project to prevent emissions of particulate asbestos material into the ambient air:

- (a) Remove [friable] asbestos-containing materials before any wrecking or dismantling that would break up the materials or preclude access to the materials for subsequent removal. However, [friable] asbestos-containing materials need not be removed before demolition if:
 - (A) They are on a facility component that is encased in concrete or other similar material; and
 - (B) These materials are adequately wetted whenever exposed during demolition.
- (b) Adequately wet [friable] asbestos-containing materials when they are being removed. In renovation, maintenance, repair, and construction operations, wetting that would unavoidably damage equipment is not required if the owner or operator:
 - (A) Demonstrates to the Department that wetting would unavoidably damage equipment, and
 - (B) Adequately wraps or encloses any asbestos-containing material during handling to avoid releasing fibers.
 - (C) [(B)] Uses a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the asbestos abatement project.
- (c) When a facility component covered or coated with [friable] asbestos-containing materials is being taken out of the facility as units or in sections:
 - (A) Adequately wet any [friable] asbestos-containing materials exposed during cutting or disjointing operation; and
 - (B) Carefully lower the units or sections to ground level, not dropping them or throwing them.
- (d) For [friable] asbestos-containing materials being removed or stripped:
 - (A) Adequately wet the materials to ensure that they remain wet until they are disposed of in accordance with OAR 340-25-465(13); and
 - (B) Carefully lower the materials to the floor, not dropping or throwing them; and
 - (C) Transport the materials to the ground via dust-tight chutes or containers if they have been removed or stripped above ground level and were not removed as units or in sections.

- (e) If a facility is being demolished under an order of the State or a local governmental agency, issued because the facility is structurally unsound and in danger of imminent collapse, the requirements of subsections (a), (b), (c), (d), and (f) of this section shall not apply, provided that the portion of the facility that contains ~~{friable}~~ asbestos-containing materials is adequately wetted during the wrecking operation.
- (f) None of the operations in subsections (a) through (d) of this section shall cause any visible emissions. Any local exhaust ventilation and collection system or other vacuuming equipment used during an asbestos abatement project, shall be equipped with a HEPA filter or other filter of equal or greater collection efficiency.
- (g) Contractors licensed and workers certified to conduct only small-scale asbestos abatement projects under OAR 340-33 may use only those work practices and engineering controls specified by OAR 437 ~~{Appendix-83-G-(Asbestos)-(9/17/87)}~~ Division 3 Construction 29/CFR 1926 Appendix G to 1926.58 unless the Department authorizes other methods on a case-by-case basis.
- (h) The Director may approve, on a case-by-case basis, requests to use an alternative to a specific worker or public health protection requirement as provided by these rules for an asbestos abatement project. The contractor or facility owner or operator must submit in advance a written description of the alternative procedure which demonstrates to the Director's satisfaction that the proposed alternative procedure provides worker and public health protection equivalent to the protection that would be provided by the specific provision, or that such level of protection cannot be obtained for the asbestos abatement project.
- (i) Final Air Clearance Sampling Requirements apply to negative air containments of 1000 cubic feet or more. Before such an area is dismantled, the contractor must document that the air inside the containment has no more than 0.01 fibers per cubic centimeter of air. The Department may grant an exception to this requirement upon written request when all practicable measures have been taken to reach the standard of 0.01 fibers per cubic centimeter inside the containment.
- A. Before final air clearance sampling is performed the following shall be completed:
- (i) All visible asbestos-containing debris shall be removed according to the requirements of this section.
- (ii) The air and surfaces within the containment shall be sprayed with an EPA approved encapsulant.

(iii) Air sampling may commence thirty minutes after spraying encapsulant or when surfaces are dry inside containment.

B. Air clearance sampling inside containment areas shall be aggressive and comply with the following procedures:

(i) Immediately prior to starting the sampling pumps, direct exhaust from forced air equipment against all walls, ceilings, floors, ledges, and other surfaces in the containment, at the rate of approximately five minutes per 1,000 square feet of floor area.

(ii) Then a 20 inch fan operating on low speed is placed in the center of the containment area and pointed toward the ceiling. Use one fan per 10,000 cubic feet of room space.

(iii) Start sampling pumps and sample an adequate volume of air to detect concentrations of 0.01 fibers of asbestos per cubic centimeter according to the U.S. National Institute of Occupational Safety and Health, (NIOSH) 7400 method.

(iv) When sampling is completed turn off the pump and then the fan(s).

(v) As an alternative to meeting the requirements of (i) through (iv) of this section, air clearance sample analysis may be performed according to Transmission Electron Microscopy Analytical Methods prescribed by 40 CFR 763.99, Appendix A to Subpart E.

(7) Related Work Practices and Controls Work practices and engineering controls employed for asbestos abatement projects by contractors and/or workers who are not otherwise subject to the requirements of the Oregon Department of Insurance and Finance, Accident Prevention Division shall comply with the subsections of OAR Chapter 437 [Division-83] which limit the release of asbestos-containing material or exposure of other persons. As used in this subsection the term employer shall mean the operator of the asbestos abatement project and the term employee shall mean any other person.

(13) Work Practices for storage, transport, and disposal of asbestos-containing waste material: The owner or operator of any source covered under the provisions of sections (3), (4), (8) or (11) of this rule or any other source of friable asbestos-containing waste material shall meet the following standards.

(a) There shall be no visible emissions to the outside air, except as provided in subsection (13)(c) of this section, during the collection; processing, including incineration;

packaging; transporting; or deposition of any asbestos-containing waste material which is generated by such source.

(b) The interim storage of asbestos-containing waste material shall protect the waste from dispersal into the environment and provide physical security from tampering by unauthorized persons. The interim storage of asbestos-containing waste material is the sole responsibility of the person or persons responsible for the asbestos abatement project.

(c) ~~(B)~~ All asbestos-containing waste material shall be wetted and stored and transported to ~~the~~ an authorized disposal site in leak-tight containers such as two plastic bags each with a minimum of a thickness of 6 mil., or fiber or metal drums.

~~(b)~~(d) All asbestos-containing waste material shall be disposed of at a disposal site authorized by the Department. (F) Records of disposal at an authorized landfill shall be maintained by the source for a minimum of three years and shall be made available upon request to the Department. For an asbestos abatement project conducted by a contractor licensed under OAR 340-33-040, the records shall be retained by the licensed contractor. For any other asbestos abatement project, the records shall be retained by the facility owner.

(A) Persons intending to dispose of asbestos-containing waste material shall notify the landfill operator of the type and volume of the waste material and obtain the approval of the landfill operator prior to bringing the waste to the disposal site.

(B) ~~(G)~~ The waste transporter shall immediately notify the landfill operator upon arrival of the waste at the disposal site. Off-loading of asbestos-containing waste material shall be done under the direction and supervision of the landfill operator.

(C) ~~(D)~~ Off-loading of asbestos-containing waste material shall occur at the immediate location where the waste is to be buried. The waste burial site shall be selected in an area of minimal work activity that is not subject to future excavation.

(D) ~~(E)~~ Off-loading of asbestos-containing waste material shall be accomplished in a manner that prevents the leak-tight transfer containers from rupturing and prevents visible emissions to the air.

(E) ~~(F)~~ Asbestos-containing waste material deposited at a disposal site shall be covered with at least 2 feet of soil or 1 foot of soil plus 1 foot of other waste before compacting equipment runs over it but not later than the end of the operating day.

~~(e)~~~~(A)~~ All asbestos-containing waste material shall be sealed into containers labeled with a warning label that states:

DANGER

Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard
Avoid Breathing Airborne
Asbestos Fibers

~~(B)~~ Alternatively, warning labels specified by the U.S. Environmental Protection Agency under 40 CFR 61.152(b)(1)(iv) (3/10/86) may be used.

~~(e)~~~~(f)~~ Rather than meet the requirements of this section, an owner or operator may elect to use an alternative storage, transport, or disposal method which has received prior written approval by the Department [~~in writing~~].

(14) Any waste which contains nonfriable asbestos-containing material and which is not subject to subsection (13) of this rule shall be handled and disposed of using methods that will prevent the release of airborne asbestos-containing material.

(15) Open storage or accumulation of friable asbestos material or asbestos-containing waste material is prohibited.

Editor's Note - This is a reprint of all sections and subsections of Oregon Administrative Rules Chapter 340, Division 25, which pertain to asbestos abatement. Deleted sections pertain to other asbestos and hazardous air pollutant sources.

OREGON ADMINISTRATIVE RULES
DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 340 DIVISION 33
ASBESTOS CERTIFICATION REQUIREMENTS

ASBESTOS REQUIREMENTS

340-33-010 AUTHORITY, PURPOSE, & SCOPE

- (1) Authority. These rules are promulgated in accordance with and under the authority of ORS 468.893.
- (2) Purpose. The purpose of these rules is to provide reasonable standards for:
 - (a) training and licensing of asbestos abatement project contractors,
 - (b) training and certification of asbestos abatement project supervisors and workers,
 - (c) accreditation of providers of training of asbestos contractors, supervisors, and workers,
 - (d) administration and enforcement of these rules by the Department.
- (3) Scope
 - (a) OAR 340-33-000 through -100 is applicable to all work, including demolition, renovation, repair, construction, or maintenance activity of any public or private facility that involves the repair, enclosure, encapsulation, removal, salvage, handling, or disposal of any material which could potentially release asbestos fibers into the air; except as provided in (b) and (c) below.
 - (b) OAR 340-33-000 through -100 do not apply to an asbestos abatement project which is exempt from OAR 340-25-465(4).
 - (c) OAR 340-33-010 through -100 do not apply to persons performing vehicle brake and clutch maintenance or repair.
 - (d) Full-scale asbestos abatement projects are differentiated from smaller projects. Small-scale asbestos abatement projects as defined by OAR 340-33-020(17)
 - (A) where the primary intent is to disturb the asbestos-containing material and prescribed work practices are used, and
 - (B) where the primary intent is not to disturb the asbestos-containing material.

- (e) OAR 340-33-000 through -100 provide training, licensing, and certification standards for implementation of OAR 340-25-465, Emission Standards and Procedural Requirements for Asbestos.

340-33-020 DEFINITIONS

As used in these rules,

- (1) "Accredited" means a provider of asbestos abatement training courses is authorized by the Department to offer training courses that satisfy requirements for contractor licensing and worker training.
- (2) "Agent" means an individual who works on an asbestos abatement project for a contractor but is not an employe of the contractor.
- (3) "Asbestos" means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, actinolite and tremolite.
- (4) "Asbestos abatement project" means any demolition, renovation, repair, construction or maintenance activity of any public or private facility that involves the repair, enclosure, encapsulation, removal, salvage, handling or disposal of any asbestos-containing material with the potential of releasing asbestos fibers from asbestos containing material into the air.

Note: Emergency fire fighting is not an asbestos abatement project.
- (5) "Asbestos-containing material" means any material containing more than one percent asbestos by weight, including particulate asbestos material.
- (6) "Certified" means a worker has met the Department's training, experience, and/or quality control requirements and has a current certification card.
- (7) "Contractor" means a person that undertakes for compensation an asbestos abatement project for another person. As used in this subsection, "compensation" means wages, salaries, commissions and any other form of remuneration paid to a person for personal services.
- (8) "Commission" means the Environmental Quality Commission.
- (9) "Department" means the Department of Environmental Quality.
- (10) "Director" means the Director of the Department of Environmental Quality.
- (11) "EPA" means the United States Environmental Protection Agency.

- (12) "Facility" means all or part of any public or private building, structure, installation, equipment, or vehicle or vessel, including but not limited to ships.
- (13) "Friable asbestos material" means any asbestos-containing material that hand pressure can crumble, pulverize or reduce to powder when dry.
- (14) "Full-scale asbestos abatement project" means any removal, renovation, encapsulation, repair or maintenance of any asbestos-containing material which could potentially release asbestos fibers into the air, and which is not classified as a small-scale project as defined by (17) below.
- (15) "Licensed" means a contracting entity has met the Department's training, experience, and/or quality control requirements to offer and perform asbestos abatement projects and has a current asbestos abatement contractor license.
- (16) "Persons" means an individual, public or private corporation, nonprofit corporation, association, firm, partnership, joint venture, business trust, joint stock company, municipal corporation, political subdivision, the state and any agency of the state or any other entity, public or private, however organized.
- (17) "Small-scale asbestos abatement project" means small-scale, short-duration projects as defined by (18) below, and/or removal, renovation, encapsulation, repair, or maintenance procedures intended to prevent asbestos containing material from releasing fibers into the air and which:
- (a) Remove, encapsulate, repair or maintain less than 40 linear feet or 80 square feet of asbestos-containing material;
 - (b) Do not subdivide an otherwise full-scale asbestos abatement project into smaller sized units in order to avoid the requirements of these rules;
 - (c) Utilize all practical worker isolation techniques and other control measures; and
 - (d) Do not result in worker exposure to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air calculated as an eight (8) hour time weighted average.
- (18) "Small-scale, short-duration renovating and maintenance activity" means a task for which the removal of asbestos is not the primary objective of the job, including, but not limited to:
- (a) Removal of quantities of asbestos-containing insulation on pipes;
 - (b) Removal of small quantities of asbestos-containing insulation on beams or above ceilings;

- (c) Replacement of an asbestos-containing gasket on a valve;
- (d) Installation or removal of a small section of drywall; or
- (e) Installation of electrical conduits through or proximate to asbestos
-containing materials.

Small-scale, short duration activities shall be limited to no more than 40 linear feet or 80 square feet of asbestos containing material. An asbestos abatement activity that would otherwise qualify as a full-scale abatement project shall not be subdivided into smaller units in order to avoid the requirements of these rules.]

- (19) "Trained worker" means a person who has successfully completed specified training and can demonstrate knowledge of the health and safety aspects of working with asbestos.
- (20) "Worker" means an employe or agent of a contractor or facility owner or operator.

[340-33-010(3)] 340-33-030 GENERAL PROVISIONS

- (1) Persons engaged in the removal, encapsulation, repair, or enclosure of any asbestos-containing material which has the potential of releasing asbestos fibers into the air must be licensed or certified, unless exempted by OAR 340-33-010(3).
- (2) An owner or operator of a facility shall not allow any persons other than those employees of the facility owner or operator who are appropriately certified or a licensed asbestos abatement contractor to perform an asbestos abatement project in or on that facility. Facility owners and operators are not required to be licensed to perform asbestos abatement projects in or on their own facilities.
- (3) Any contractor engaged in a full-scale asbestos abatement project must be licensed by the Department under the provisions of OAR 340-33-040.
- (4) Any person acting as the supervisor of any full-scale asbestos abatement project must be certified by the Department as a Supervisor for Full-Scale Asbestos Abatement under the provisions of OAR 340-33-050.
- (5) Any worker engaged in or working on any full-scale asbestos abatement project must be certified by the Department as a Worker for Full-Scale Asbestos Abatement under the provisions of OAR 340-33-050, or as a Supervisor for Full-Scale Asbestos Abatement.
- (6) Any contractor or worker engaged in any small-scale asbestos abatement project but not licensed or certified to perform full-scale asbestos abatement projects, must be licensed or certified by the Department as a Small-Scale Asbestos Abatement

Contractor or a Worker for Small-Scale Asbestos Abatement, respectively under the provisions of OAR 340-33-040 and -050.

- (7) Any provider of training which is intended to satisfy the licensing and certification training requirements of these rules must be accredited by the Department under the provisions of OAR 340-33-060.
- (8) Any person licensed, certified, or accredited by the Department under the provisions of these rules shall comply with the appropriate provisions of OAR 340-25-465 and OAR 340-33-000 through -100 and maintain a current address on file with the Department, or be subject to suspension or revocation of license, or certification, or accreditation.

~~{(9)- Asbestos abatement contractors and workers may perform asbestos abatement projects without a license or certificate until January 1, 1989. Thereafter, any contractor or worker engaged in an asbestos abatement project must be licensed or certified by the Department.}~~

(9)~~{(10)}~~ The Department may accept evidence of violations of these rules from representatives of other federal, state, or local agencies.

(10)~~{(11)}~~ A regional air pollution authority which has been delegated authority under OAR 340-25-460(7) may inspect for and enforce against violations of licensing and certification regulations. A regional air pollution authority may not approve, deny, suspend or revoke a training provider accreditation, contractor license, or worker certification, but may refer violations to the Department and recommend denials, suspensions, or revocations.

~~{(12) An extension of time beyond January 1, 1989, for mandatory contractor licensing, supervisor certification or worker certification may be approved by the Commission if:}~~

~~{(a)- Adequate accredited training as required for any of the categories of licensing or certification is not available in the State, and-}~~

~~{(b) There is a public health or worker danger created due to inadequate numbers of appropriately licensed or certified persons to properly perform asbestos abatement activities.}~~

~~{(13) Variances from these rules may be granted by the Commission under ORS 468.345.}~~

340-33-040 CONTRACTOR LICENSING

- (1) Contractors may be licensed to perform either of the following categories of asbestos abatement projects:

- (a) Full-Scale Asbestos Abatement Contractors: All asbestos abatement projects, regardless of project size or duration, or
 - (b) Small-Scale Asbestos Abatement Contractor: Small-scale asbestos abatement projects.
- (2) Application for licenses shall be submitted on forms prescribed by the Department and shall be accompanied by:
- (a) Documentation that the contractor, or contractor's employee representative, is certified at the appropriate level by the Department:
 - (A) Full-scale Asbestos Abatement Contractor license: Certified Supervisor for Full-Scale Asbestos Abatement.
 - (B) Small-Scale Asbestos Abatement Contractor: Certified Worker for Small-Scale Asbestos Abatement.
 - (b) Certification that the contractor has read and understands the applicable Oregon and federal rules and regulations on asbestos abatement and agrees to comply with the rules and regulations.
 - (c) A list of all certificates or licenses, issued to the contractor by any other jurisdiction, that have been suspended or revoked during the past one (1) year, and a list of any asbestos-related enforcement actions taken against the contractor during the past one (1) year.
 - (d) List any additional project supervisors for full-scale projects and their certification numbers as Supervisors for Full-Scale Asbestos Abatement.
 - (e) Summary of asbestos abatement projects conducted by the contractor during the past 12 months.
 - (f) A license application fee.
- (3) The Department will review the application for completeness. If the application is incomplete, the Department shall notify the applicant in writing of the deficiencies.
- (4) The Department shall deny, in writing, a license to a contractor who has not satisfied the license application requirements.
- (5) The Department shall issue a license to the applicant after the license is approved.
- (6) The Department shall grant a license for a period of 12 months. Licenses may be extended during Department review of a renewal application.

- (7) Renewals:
 - (a) License renewals must be applied for in the same manner as is required for an initial license.
 - (b) For renewal, the contractor or employee representative must have completed at least the appropriate annual refresher course.
 - (c) The complete renewal application shall be submitted no later than 60 days prior to the expiration date.
- (8) The Department may suspend or revoke a license if the licensee:
 - (a) Fraudulently obtains or attempts to obtain a license.
 - (b) Fails at any time to satisfy the qualifications for a license or comply with the rules adopted by the Commission.
 - (c) Fails to meet any applicable state or federal standard relating to asbestos abatement.
 - (d) Permits an untrained or uncertified worker to work on an asbestos abatement project.
 - (e) Employs a worker who fails to comply with applicable state or federal rules or regulations relating to asbestos abatement.
- (9) A contractor who has a license revoked may reapply for a license after demonstrating to the Department that the cause of the revocation has been resolved.

340-33-050 CERTIFICATION

- (1) Workers on asbestos abatement projects shall be certified at one or more of the following levels:
 - (a) Certified Supervisor for Full-Scale Asbestos Abatement.
 - (b) Certified Worker for Full-Scale Asbestos Abatement.
 - (c) Certified Worker for Small-Scale Asbestos Abatement.
- (2) Application for Certification-General Requirements.
 - (a) Applications shall be submitted to the provider of the accredited training course within thirty (30) days of completion of the course.
 - (b) Applications shall be submitted on forms prescribed by the Department and shall be accompanied by the certification fee.
- (3) Application to be a Certified Supervisor for Full-Scale Asbestos Abatement shall include:

- (a) Documentation that the applicant has successfully completed the Supervisor for Full-Scale Asbestos Abatement level training and examination as specified in OAR 340-33-070 and the Department guidance document, and
 - (b) Documentation that the applicant has been certified as a Worker for Full-Scale Asbestos Abatement and has at least 3 months of full-scale asbestos abatement experience, including time on powered air purifying respirators and experience on at least five separate asbestos abatement projects; or certified as worker for Full-Scale asbestos abatement and six months of general construction, environmental or maintenance supervisory experience demonstrating skills to independently plan, organize and direct personnel in conducting an asbestos abatement project. The Department shall have the authority to determine if any applicant's experience satisfies those requirements. ~~[Applications for licenses submitted prior to January 1, 1989 shall not be required to include documentation of certification as a worker.]~~
- (4) Application to be a Certified Worker for Asbestos Abatement shall include:
- (a) Documentation that the applicant to be a Certified Worker for Full-Scale Asbestos Abatement has successfully completed the Worker for Full-Scale Asbestos Abatement level training and examination as specified in OAR 340-33-070 and the Department guidance document.
 - (b) Documentation that the applicant to be a Certified Worker for Small-Scale Asbestos Abatement has successfully completed the Worker for Small-Scale Asbestos Abatement level training and examination as specified in OAR 340-33-070 and the Department guidance document.
- (5) Training course providers shall issue certification to an applicant who has fulfilled the requirements of certification.
- (6) Certification at all levels is valid for a period of twenty-four (24) months after the date of issue.
- (7) Renewals
- (a) Certification renewals must be applied for in the same manner as application for original certification.
 - (b) To gain renewal of certification, a Worker for Full-Scale Asbestos Abatement and a Supervisor for Full-Scale Asbestos Abatement must complete the appropriate annual refresher course no sooner than nine (9) months and no later than twelve (12) months after the issuance date of the certificate, and again no sooner than three (3) months prior to the expiration date of the certificate. A worker may apply in writing to the Department for taking refresher training at some other time than as specified by this

paragraph for reasons of work requirements or hardship. The Department shall accept or reject the application in writing.

- (c) To gain renewal of certification, a Worker for Small-Scale Asbestos Abatement must comply with the regulations on refresher training which are in effect at the time of renewal. Completion of an accredited asbestos abatement review class may be required if the Environmental Quality Commission determines that there is a need to update the workers' training in order to meet new or changed conditions.
- (8) The Department may suspend or revoke a worker's certificate for failure to comply with any state or federal asbestos abatement rule or regulation.
- (9) If a certification is revoked, the worker may reapply for another initial certification only after twelve (12) months from the revocation date.
- (10) A current worker certification card shall be available for inspection at each asbestos abatement project site for each worker conducting asbestos abatement activities on the site.

340-33-060 TRAINING PROVIDER ACCREDITATION

(1) General

- (a) Asbestos training courses required for licensing or certification under these rules may be provided by any person.
- (b) Any training provider offering training in Oregon to satisfy these certification and licensing requirements must be accredited by the Department.
- (c) Each of the different training courses which are to be used to fulfill training requirements shall be individually accredited by the Department.
- (d) The training provider must satisfactorily demonstrate through application and submission of course agenda, faculty resumes, training manuals, examination materials, equipment inventory, and performance during on-site course audits by Department representatives that the provider meets the minimum requirements established by the Department.
- (e) The training course sponsor shall limit each class to a maximum of thirty participants unless granted an exception in writing by the Department. The student to instructor ratio for hands-on training shall be equal to or less than ten to one (10:1). To apply for an exception allowing class size to exceed thirty, the course sponsor must submit the following information in writing to the Department for evaluation and approval prior to expanding the class size.

- (A) The new class size limit,
 - (B) The teaching methods and techniques for training the proposed larger class,
 - (C) The protocol for conducting the written examination, and
 - (D) Justification for a larger class size.
- (f) Course instructors must have academic credentials, demonstrated knowledge, prior training, or field experience in their respective training roles.
 - (g) The Department may require any accredited training provider to use examinations developed by the Department in lieu of the examinations offered by the training provider.
 - ~~{(h) Training providers seeking accreditation for courses conducted since January 1, 1987, may apply for accreditation of those course offerings as though they were applying for initial accreditation. Contractors and workers trained by these providers since January 1, 1987 may be eligible to use this prior training as satisfaction of the initial training required by these licensing and certification rules.}~~

~~(h)~~~~{(i)}~~ The Department may require accredited training providers to pay a fee equivalent to reasonable travel expenses for one Department representative to audit any accredited course which is not offered in the State of Oregon for compliance with these regulations. This condition shall be an addition to the standard accreditation application fee.

(2) Application for Accreditation.

- (a) Application for accreditation shall be submitted to the Department in writing on forms provided by the Department and attachments. Such applications shall, as a minimum, contain the following information:
 - (A) Name, address, telephone number of the firm, individual(s), or sponsors conducting the course, including the name under which the training provider intends to conduct the training.
 - (B) The type of course(s) for which approval is requested.
 - (C) A detailed course outline showing topics covered and the amount of time given to each topic, including the hands-on skill training.
 - (D) A copy of the course manual, including all printed material to be distributed in the course.

- (E) A description of teaching methods to be employed, including description of audio-visual materials to be used. The Department may, at its discretion, request that copies of the materials be provided for review. Any audio-visual materials provided to the Department will be returned to the applicant.
- (F) A description of the hands-on facility to be utilized including protocol for instruction, number of students to be accommodated, the number of instructors, and the amount of time for hands-on skill training.
- (G) A description of the equipment that will be used during both classroom lectures and hands-on training.
- (H) A list of all personnel involved in course preparation and presentation and a description of the background, special training and qualification of each, as well as the subject matter covered by each.
- (I) A copy of each written examination to be given including the scoring methodology to be used in grading the examination; and a detailed statement about the development and validation of the examination.
- (J) A list of the tuition or other fees required.
- (K) A sample of the certificate of completion and certification card label.
- (L) A description of the procedures and policies for re-examination of students who do not successfully complete the training course examination.
- (M) A list of any states or accrediting systems that approve the training course.
- (N) A description of student evaluation methods (other than written examination to be used) associated with the hands-on skill training, as applicable.
- (O) A description of course evaluation methods used by students.
- (P) Any restriction on attendance such as class size, language, affiliation, and/or target audience of class.
- (Q) A description of the procedure for issuing replacement certification cards to workers who were issued a certification card or certification card label by the training provider within the previous 12 months and whose cards have been lost or destroyed.

- (R) Any additional information or documentation as may be required by the Department to evaluate the adequacy of the application.
 - (S) Accreditation application fee.
 - (b) Application for initial training course accreditation and course materials shall be submitted to the Department at least 45 days prior to the requested approval date.
 - (c) Upon approval of an initial or refresher asbestos training course, the Department will issue a certificate of accreditation. The certificate is valid for one year from the date of issuance.
 - (d) Application for renewal of accreditation must follow the procedures described for the initial accreditation. In addition, course instructors must demonstrate that they have maintained proficiency in their instructional specialty and adult training methods during the twelve (12) months prior to renewal.
- (3) Denial, Suspension or Revocation of Certificate of Accreditation. The Director may deny, revoke or suspend an application or current accreditation upon finding of sufficient cause. Applicants and certificate holders shall also be advised of the duration of suspension or revocation and any conditions that must be met before certificate reinstatement. Applicants shall have the right to appeal the Director's determination through an administrative hearing in accordance with the provisions of OAR Chapter 340 Division 11. The following may be considered grounds for denial, revocation or suspension:
- (a) False statements in the application, omission of required documentation or the omission of information.
 - (b) Failure to provide or maintain the standards of training required by these regulations.
 - (c) Failure to provide minimum instruction required by these regulations.
 - (d) Failure to report to the Department any change in staff or program which substantially deviates from the information contained in the application.
 - (e) Failure to comply with the administrative tasks and any other requirement of these regulations.
- (4) Training Provider Administrative Tasks. Accredited training providers shall perform the following as a condition of accreditation:
- (a) Administer the training course examination only to those students who successfully complete the training course.

- (b) Issue a numbered certificate to each students who successfully passes the training course examination. Each certificate shall include the name of the student, name of the course completed, the dates of the course and the examination, name of the training provider, a unique certificate number, and a statement that the student passed the examination.
- (c) Issue a photo identification card to each student seeking initial or renewal certification who successfully completes the training course examination and meets all other requirements for certification. The photo identification card shall meet the Department specifications.
- (d) Place a label on the back of the photo identification card of each student who successfully completes a refresher training course and examination as required to maintain certification. The label shall meet Department specifications.
- (e) Provide to the Department within ten (10) calendar days of the conclusion of each course offering the name, address, telephone number, Social Security Number, course title and dates given, attendance record, exam scores, and course evaluation form of each student attending the course and the certification number, certification fee, and a photograph for each student certified. Record of the information shall be retained by the training provider for a period of three (3) years.
- (f) Obtain advance approval from the Department for any changes in the course instructional staff, content, training aids used, facility utilized or other matters which would alter the instruction from that described in the approval application.
- (g) Utilize and distribute as part of the course information or training aides furnished by the Department.
- (h) ~~[Notify the Department in writing at least one week before a training course is scheduled to begin. The notification must include the date, time and address where the training will be conducted.]~~ Provide the Department with a monthly class schedule at least one week before the schedule begins. Notification shall include time and location of each course. Training providers shall promptly notify the Department within three days whenever any unscheduled class is given.
- (i) Establish and maintain course records and documents relating to course accreditation application. Accredited training providers shall make records and documents available to the Department upon request. Training providers whose principle place of business is outside of the State of Oregon shall provide a copy of such records or documents within ten (10) business days of receipt of such a written request from the Department.

- (h) Notify the Department prior to issuing a replacement certification card.
- (i) Accredited training providers must have their current accreditation certificates at the location where they are conducting training.

340-33-070 GENERAL TRAINING STANDARDS

- (1) Courses of instruction required for certification shall be specific for each of the certificate categories and shall be in accordance with Department guidelines. The topics or subjects of instruction which a person must receive to meet the training requirements must be presented through a combination of lectures, demonstrations, and hands-on practice.
- (2) Courses requiring hands-on training must be presented in an environment suitable to permit participants to have actual experience performing tasks associated with asbestos abatement. Demonstrations not involving individual participation shall not substitute for hands-on training.
- (3) Persons seeking certification as a Supervisor for Full-Scale Asbestos Abatement shall successfully complete an accredited training course of at least four days as outlined in the DEQ Asbestos Training Guidance Document. The training course shall include lectures, demonstrations, at least six hours of hands-on training, individual respirator fit testing, course review, and a written examination consisting of multiple choice questions. Successful completion of the training shall be demonstrated by achieving a passing score on the examination, course attendance, and full participation in the hands-on training.
- (4) Any person seeking certification as a Worker for Full-Scale Asbestos Abatement shall successfully complete an accredited training course of at least three days duration as outlined in the DEQ Asbestos Training Guidance Document. The training course shall include lectures, demonstrations, at least six hours of actual hands-on training, individual respirator fit testing, course review, and an examination of multiple choice questions. Successful completion of the course shall be demonstrated by achieving a passing score on the examination, course attendance, and full participation in the hands-on training. The course shall adequately address the following topics:
- (5) Any person seeking certification as a Worker for Small-Scale Asbestos Abatement shall complete at least a two day approved training course as outlined in the DEQ Asbestos Training Guidance Document. The small-scale asbestos abatement worker course shall include lectures, demonstrations, at least six hours of hands-on training, individual respirator fit testing, course review, and an examination of multiple choice questions. Successful completion of the course shall be demonstrated by achieving a passing score on the examination, course attendance, and full participation in the hands-on training.

- (6) Refresher training shall be at least one day duration for Certified Supervisors and Workers for Full-Scale Asbestos Abatement and at least three hours duration for Certified Workers for Small-Scale Asbestos Abatement. The refresher courses shall include a review of key areas of initial training, updates, and an examination of multiple choice questions as outlined in the DEQ Asbestos Training Guidance Document. Successful completion of the course shall be demonstrated by achieving a passing score on the examination, course attendance, and full participation in any hands-on training.
- (7) One training day shall consist of at least seven hours, of actual classroom instruction and hands-on practice.

340-33-080 PRIOR TRAINING

Successful completion of an initial training course [not] accredited by a governmental agency other than the Department may be used to satisfy the training and examination requirements of OAR 340-33-050 and OAR 340-33-060 provided that all of the following conditions are met.

- (1) The Department determines that the course and examination requirements are equivalent to or exceed the requirements of OAR 340-33-050 and 340-33-060 and the asbestos training guidance document, for the level of certification sought. State and local requirements may vary.
- (2) ~~[If the training was completed prior to January 1, 1987, the applicant must demonstrate to the Department that additional experience sufficient to maintain knowledge and skills in asbestos abatement has been obtained in the interim.]~~ For an applicant to qualify for a refresher course and certification, prior training must have occurred within two years of the application to the Department. Applicants must be in good standing in all states where they are certified.
- (3) The applicant who has received recognition from the Department for alternate initial training successfully completes an Oregon accredited refresher course and refresher course examination for the level of certification sought.

340-33-090 RECIPROCITY

The Department may develop agreements with other jurisdictions for the purposes of establishing reciprocity in training, licensing, and/or certification if the Department finds that the training, licensing and/or certification standards of the other jurisdiction are at least as stringent as those required by these rules.

340-33-100 FEES

- (1) Fees shall be assessed to provide revenues to operate the asbestos control program. Fees are assessed for the following:
 - (a) Contractor Licenses
 - (b) Worker Certifications
 - (c) Training Provider Accreditation
 - (d) Asbestos Abatement Project Notifications
- (2) Contractors shall pay a non-refundable license application fee of:
 - (a) Three hundred dollars (\$300) for a one year Full-Scale Asbestos Abatement Contractor license.
 - (b) Two hundred dollars (\$200) for a one year Small-Scale Asbestos Abatement Contractor license.
- (3) Workers shall pay a non-refundable certification fee of:
 - (a) One hundred dollars (\$100) for a two year certification as a certified Supervisor for Full-Scale Asbestos Abatement.
 - (b) Eighty dollars (\$80) for a two year certification as a Certified Worker for Full-Scale Asbestos Abatement.
 - (c) Fifty dollars (\$50) for a two year certification as a Certified Worker for Small-Scale Asbestos Abatement.
- (4) Training Providers shall pay a non-refundable accreditation application fee of:
 - (a) One thousand dollars (\$1000) for a one year accreditation to provide a course for training supervisors on Full-Scale projects.
 - (b) Eight hundred dollars (\$800) for a one year accreditation to provide a course for training workers on Full-Scale projects.
 - (c) Five hundred dollars (\$500) for a one year accreditation to provide a course for training workers on Small-Scale projects.
 - (d) Two hundred and fifty dollars (\$250) for a one year accreditation to provide a course for refresher training for any level of certification.
- (5) Requests for waiver of fees shall be made in writing to the Director, on a case-by-case basis, and be based upon financial hardship. Applicants for waivers must describe the reason for the request and certify financial hardship. The Director may waive part or all of a fee.

Note: The requirements and jurisdiction of the Department of Insurance and Finance, Accident Prevention Division and any other state agency are not affected by these rules.

(Adopted May 17, 1987; effective January 1, 1989)

ASB\AR1356

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(2), this statement provides information on the intended action to amend rules.

Legal Authority

1. Oregon Revised Statute 468.020 requires the Commission to adopt rules and standards as necessary to perform its vested functions.
2. Oregon Revised Statute 468.893 allows the Commission to establish standards and procedures for asbestos training providers and abatement workers, determine procedures for abatement project notification, and to establish asbestos abatement, handling and disposal work practice standards.

Need for the Rule

The proposed amendments are the result of a long-term effort to delete outdated or irrelevant regulations, render procedures more efficient and practical, respond to current industrial practices, and generally fine-tune the Department's asbestos regulations.

Principal Documents Relied Upon

- ORS 468.020, 468.893
- Existing Oregon Administrative Rules:
 - OAR 340-25-465, Hazardous Air Contaminant Rules for Asbestos
 - OAR 340-33-010 et seq., Asbestos Licensing and Certification Requirements

Land Use Compatibility Statement

The Department has concluded that the proposed rules do not appear to affect land use, and will be consistent with Statewide Planning Goals and Guidelines.

FISCAL AND ECONOMIC IMPACT STATEMENT

Proposed rule amendments fall into three categories: 1) Housekeeping changes that have no fiscal impact, 2) procedural changes that economically impact the regulated community, and 3) changes in standards or requirements that economically impact the regulated community.

1) Housekeeping Amendments

The Department has projected no fiscal impact for the following rule amendments:

OAR 340-33-030(9) & (12) - Repeal of sections creating special licensing or certification provisions until January 1, 1989, a deadline that has already passed.

OAR 340-33-030(13) - Repeal of section that repeats variance authority already contained in ORS 468.345.

OAR 340-33-060(1)(h) - Repeal of accreditation grandfathering provision for asbestos training courses taught since January 1, 1987. The Department has received only one request under this provision, and no other requests are expected in the future.

2) Procedural Amendments

OAR 340-25-465(5) - Creation of \$75 non-refundable fee to be retained by DEQ when asbestos notifications are withdrawn. This fee covers the Department's cost of processing paperwork associated with withdrawn asbestos notifications. It has a direct economic impact on all persons who withdraw notifications.

OAR 340-25-465(5)(a) - Allows asbestos abatement projects to commence without prior notification when unexpected event creates opportunity to work. This amendment is expected to allow an economic savings to facilities able to perform abatement projects only under certain circumstances (ie: production line down time). The Department is not able to quantify the savings.

OAR 340-25-465(5)(b) - Deletion of more costly month to month project notification option, amendment allowing single owner/operator of centrally controlled facilities to file one notice for multiple abatement projects. These amendments also represent a currently unquantifiable savings to persons performing asbestos abatement projects by decreasing the amount of notification fees to be paid.

OAR 340-33-050(3)(b) - Amendment allowing persons with six months experience as maintenance or construction supervisors and full-scale worker certification to take supervisor's training course. This amendment allows economic savings to the regulated community by allowing the previous prerequisite of hands-on training, and by also allowing supervisory experience to qualify for the supervisors training course.

OAR 340-33-060(4)(h) - Amendment requiring a written monthly training schedule instead of written notice one week before each class. This amendment helps trainers plan their courses in advance and thereby reduce training course marketing costs.

OAR 340-33-080 - Limits transferability of out-of-state asbestos training to training received within two years of application with the Department. The Department projects no fiscal impact.

Amendments to Standards and Requirements

OAR 340-25-455(20) - New definition of "interim storage of asbestos-containing waste material". This amendment will economically impact the regulated community by requiring prevention of asbestos dispersal physical tampering. The costs associated with these requirements are unknown because they may be achieved in a number of ways. This amendment should also help to prevent cleanup costs associated with accidental contamination between the source and the disposal site.

OAR 340-25-465(4)(b) & (6) - Amendments clarify that normally nonfriable materials can be made friable, and as a result hazardous, by certain work practices. These amendments could increase costs to contractors removing or disturbing asbestos-containing materials in a manner that makes them friable, and subject to further regulation. Cost increases would be offset by current Accident Prevention Division regulations for worker protection.

OAR 340-25-465(6)(i) - New rule requiring air clearance monitoring by an independent third party prior to removal of negative air containment. The Department estimates the cost of air clearance monitoring by a third party to be approximately \$150 per abatement project. Many contractors contacted in an informal telephone survey already voluntarily perform air clearance monitoring.

ASB\AR1355

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

Amendments to Asbestos Work Practice and Training Rules
NOTICE OF PUBLIC HEARING

Hearing Date: November 16 & 17, 1989
Comments Due: December 1, 1989

- WHO IS AFFECTED:** All persons performing asbestos abatement projects, and asbestos training providers.
- WHAT IS PROPOSED:** The Department of Environmental Quality is proposing to amend OAR 340-25-455(20); -25-455(4), (5) and (6); -33-030(9), (12) and (13); -33-060(1)(h), (4)(g); and -33-080
- WHAT ARE THE HIGHLIGHTS:** Proposed amendments would:
- add a definition of interim storage of asbestos containing material
 - apply existing work practices to potentially friable asbestos containing material
 - make practical adjustments to asbestos abatement project notification and filing rules
 - require air clearance monitoring upon completion of abatement projects
 - make practical adjustments to training and certification rules
 - make permanent existing temporary rules on prerequisites for supervisor training
- HOW TO COMMENT:** Copies of the complete proposed rule package may be obtained from the Air Quality Division in Portland 811 S.W. Sixth Avenue or the regional office nearest you. For further information contact Bruce Arnold at 229-5506.

A public hearing will be held before a hearings officer at:

Department of Environmental
Quality, Conference Room 4
811 SW 6th Ave., Portland, OR
November 16, 1989
2:00 pm to 5:00 pm

Harris Hall, Lane Co. Courthouse
125 E 8th St., Eugene, OR
November 17, 1989
1:00 pm to 4:00 pm

D-1



811 S.W. 6th Avenue
Portland, OR 97204

11/1/86

FOR FURTHER INFORMATION:

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ, but must be received by no later than December 1, 1989.

**WHAT IS THE
NEXT STEP:**

After public hearing the Environmental Quality Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The Commission's deliberation should come January 11, 1990 as part of the agenda of a regularly scheduled Commission meeting.

A Statement of Need, Fiscal and Economic Impact Statement, and Land Use Consistency Statement are attached to this notice.

ASB\AR1340

BACKGROUND INFORMATION ON ISSUES

In the Commission's June 1, 1989 work session the Asbestos Control Section announced that draft rule revisions would be forthcoming along with a hearing authorization request. These draft rules have been reviewed and approved by Asbestos Advisory Board and are recommended for action according to ORS 468.899(15)(a).

The most notable change in these draft rules is the omission of amendments to assist the residential industry, which previously was benefited by the June 2, 1989 Variance for workers who disturb or remove asbestos in residential facilities. The Residential subcommittee has worked diligently in the past several months in developing rules to enlarge the space limitations of asbestos removal where the risk is minimized; and developing an asbestos hazard disclosure statement and accompanying educational materials. These draft rules are not part of this hearing authorization request because recent discussions with the Accident Prevention Division of the Department of Insurance and Finance (APD) revealed conflicts with related APD regulations and interpretations based on Federal Occupational Safety and Health Administration (OSHA) requirements. The Commission is required under ORS 468.893(8) to establish asbestos abatement rules compatible statutory language with APD standards. Pursuant to advice from the Asbestos Advisory Committee, the Department will consult further with APD before proposing amendments to small-scale and residential abatement rules.

SUMMARY OF CONCEPTS FEATURED IN THE CURRENT DRAFT RULESOAR 340 DIVISION 25

OAR 340-25-455(20): "Interim storage of asbestos-containing waste material" was created to regulate such waste from the source to the disposal site which was previously unregulated.

OAR 340-25-465(4)(b) and (6): clarifies that normally nonfriable materials can be made friable, and therefore hazardous by inappropriate work practices.

OAR 340-25-465(5) creates a \$75 non-refundable fee to be retained by DEQ when asbestos notifications are withdrawn.

OAR 340-25-465(5)(a) allows asbestos abatement projects to commence without prior notification when an unexpected event creates the opportunity to conduct an asbestos abatement project.

OAR 340-25-465(5)(b) reduces the number of notification options from three to two; i.e: project by project and annual notification. This will result in less paper work and net savings to the regulated asbestos abatement industry.

OAR 340-25-465(6)(i) the proposed air clearance monitoring rules are the product of asbestos section efforts to bring Oregon into league with twenty-six other states which have similar requirements. Air clearance monitoring is done to ensure the asbestos abatement contractor has achieved a minimum acceptable levels of air quality, namely 0.01 fibers per cubic centimeter within the containment.

OAR 340-33-030(9)(12) these sections which originally created special licensing or certification provisions until January 1, 1989 are now irrelevant as the deadline has passed. These sections are to be repealed.

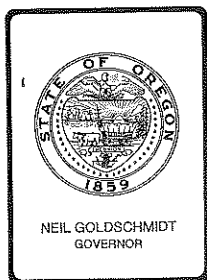
OAR 340-33-030(13) this section reiterates OAR 468.345 concerning Variances from air contamination rules. As such, it is redundant and should be repealed.

OAR 340-33-050(3)(b) these amendments make permanent changes that were approved by the Commission as a temporary rule June 2, 1989. The rule allows persons who have six months experience as maintenance or construction supervisors and certification as full-scale workers, to take the supervisors training course.

OAR 340-33-060(h) the current rule allows courses taught since January 1, 1987 up to the present time to apply for and receive accreditation. Students taking such courses could be certified. At least one course was accredited on this basis with extraordinary hardship on the Department, Training Provider and students. Furthermore, as the accreditation process is now fully operational and accepted by the training community this regressive rule is no longer needed and should be repealed.

OAR 340-33-060(4)(g) The scheduling requirements of the present rule create an unnecessary burden upon the training providers by impeding schedule development and prompt response to legitimate but unexpected training needs. The amendment requires a monthly training schedule, which is standard in the industry, and requires prompt notice of unscheduled courses.

OAR 340-33-080 Prior training is a unique feature in the Oregon asbestos training rules which allows persons trained elsewhere to be certified in Oregon upon completing a one day refresher course instead of taking the full three day course. The proposed amendment would limit this window of opportunity to persons who were trained no more than two years before making application with DEQ. This renders OAR 340-33-080(2) unnecessary as workers will no longer have to make a showing as to their current knowledge since training prior to January 1, 1987.



Environmental Quality Commission

811 SW SIXTH AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

REQUEST FOR EQC ACTION

Meeting Date: October 20, 1989
Agenda Item: 0-2
Division: Air Quality
Section: Planning & Development

SUBJECT:

Adoption of New Federal Rules - New Source Performance Standards (NSPS) and New National Emission Standards for Hazardous Air Pollutants (NESHAPS)

PURPOSE:

To adopt, by reference, new and pertinent federal air regulations regarding New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS) in order to maintain delegation of authority to administer these rules in Oregon.

ACTION REQUESTED:

- Work Session Discussion
 - General Program Background
 - Potential Strategy, Policy, or Rules
 - Agenda Item for Current Meeting
 - Other: (specify)
- Authorize Rulemaking Hearing
- Adopt Rules
 - Proposed Rules Attachment D
 - Rulemaking Statements Attachment B
 - Fiscal and Economic Impact Statement Attachment B
 - Public Notice Attachment C
- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order Attachment

Meeting Date: October 20, 1989
Agenda Item: O-2
Page 2

<input type="checkbox"/> Approve Department Recommendation	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Variance Request	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment	<input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

The Environmental Protection Agency regularly adopts and amends NSPS and NESHAPS rules. The Department of Environmental Quality (DEQ, Department) has historically committed to seek delegation to enforce each of these new rules in Oregon by bringing its rules up to date with EPA rules, when the Department believes those rules are applicable and appropriate in Oregon. "Applicable" means the existence of affected sources located in the state, or likely to move into the state. "Appropriate" means the federal rules are reasonable and enforceable within DEQ resources and enforcement policies. By retaining delegation to administer these federal rules in Oregon, the Department believes it can provide a more efficient implementation of the rules and reduce the confusion of industry having to deal with two agencies (DEQ and EPA).

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment	<input type="checkbox"/>
Enactment Date: _____		
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.020/468.295(3)</u>	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Pursuant to Rule: <u>OAR 340-25-450 to -805</u>	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule: <u>40 CFR Parts 60 and 61</u>	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Other:	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Time Constraints: (explain)		

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Response to Testimony/Comments	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Prior EQC Agenda Items:	Attachment	<u>E</u>

Attached is the EQC report (agenda item F) for the July 21, 1989 meeting only. Attachments to agenda item F are exactly the same as in this current report.

<input type="checkbox"/> Other Related Reports/Rules/Statutes:	Attachment	<input type="checkbox"/>
----------------------------------------------------------------	------------	--------------------------

Meeting Date: October 20, 1989
Agenda Item: O-2
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X Supplemental Background Information

Attachment A

The Environmental Quality Commission (EQC, Commission) authorized a public hearing for these rule amendments at its July 21, 1989 meeting. Legal public notice requirements were met by publication of the hearing notice in the Secretary of State's Bulletin and in the Oregonian. Hearing notices were sent out to the Department's mailing lists, and to those who called in response to the hearing advertisements.

No one attended the August 25, 1989 public hearing in Portland. The Department received no written comments regarding the adoption of these proposed rule amendments. Hence, there is no Hearing Officer's Report attachment.

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

These federal rules are already promulgated by EPA, and therefore the sources affected are already subject to the costs of control and compliance. Adoption by and delegation to DEQ simplifies environmental administration, and may save industry time and cost in dealing with just one agency.

Since the last time Oregon's NSPS and NESHAP rules were updated, USEPA has adopted five new NSPS rules and twenty-six amendments to existing federal NSPS and NESHAP rules. After reviewing these federal adoptions for applicability and appropriateness in Oregon, the department has concluded that two new NSPS and twenty amendments to existing state NSPS and NESHAP requirements should be adopted by reference. These rules/rule amendments are applicable to new or substantially modified industrial/commercial sources. A brief description of the rules and amendments recommended for adoption follows:

<u>40 CFR Subpart (register date)</u>	<u>Title</u>	<u>Description</u>
Ka, 60.111a to 60.1114a (4/08/87)	Volatile Liquid Storage Vessels	New NSPS establishing record keeping and emission control requirements for Volatile Liquid (VOL) storage vessels based upon vessel capacity and VOL true vapor pressure.

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TTT, 60.720 to 60.726 (1/29/88)	Industrial Surface Coating: Plastic Parts for Business Machines	New NSPS which requires facilities which surface coat plastic parts for business machines to control solvent emissions.
HH, 60.343 (b) and 60.344 (c) (2/17/87)	Amendment	Amends NSPS for lime manufacturing plants to allow Method 9 opacity observations in lieu of continuous emission monitoring (CEM).
Appendix A, Method 18 (2/19/87)	Amendment	Amends current gas chromatography Test Method 18.
A, 60.8 (3/26/87)	Amendment	Amends current opacity provisions to allow continuous opacity monitoring (COM) in lieu of Method 9 during compliance determinations.
Kb, 60.110b to 60.117b (4/08/87)	Amendment	Amends current performance standards for VOL storage vessels by requiring use of the best demonstrated system of continuous emission reduction.
Appendix A, Method 15A (6/01/87)	Amendment	Amends Appendix A to allow sulfur recovery plants to use Method 15A as an alternative to Method 15, to determine total reduced sulfur emissions.
Appendix F Procedure 1 (6/04/87)	Amendment	Establishes quality control and quality assurance requirements for gaseous continuous emission monitors.
Appendix A, Method 10A (8/17/87)	Amendment	Allows Method 10A to be used to evaluate carbon monoxide continuous emissions monitors at petroleum refineries.

Appendix A, Methods 16A and 16B (9/29/87)	Amendment	Amends procedure for certifying recovery gas used in Method 16A, and adds Method 16B as an alternative method to determine total reduced sulfur emissions from Kraft pulp mills.
Appendix A Method 6 (10/28/87)	Amendment	Adds procedure using critical orifices for volume and flow rate measurements.
DD, 60.300 GG, 60.330 (11/05/87)	Amendment	Clarifies applicability dates for standards of performance for grain elevators and stationary gas turbines.
Db, 60.42b, 60.45b 60.47b Appendix A Method 19 (12/16/87)	Amendment	Adds standards limiting emissions of sulfur dioxide and particulate matter from industrial-commercial-institutional steam-generating units, and revises emissions testing procedures under Method 19.
Appendix A Method 25 (2/12/88)	Amendment	Amends Method 25 to improve the reliability of determining total gaseous nonmethane organic emissions.
Appendix A Method 5F (8/08/88)	Amendment	Allows the use of lower cost alternative to current ion chromatograph analysis procedure related to Method 5F.
O, 60.153 & 60.154 (10/06/88)	Amendment	Adds performance test measurements and revises the monitoring, recording, and reporting requirements associated with performance standards for sewage treatment plants.

Appendix A, Methods 10 and 10B Appendix B, PS 4 (10/21/88)	Amendment	Amends Method 10 and adds Method 10B, for determining carbon monoxide emissions from stationary sources.
F, 60.63 to 60.64 (12/14/88)	Amendment	Requires monitoring of visible emissions from all kilns and clinker coolers at portland cement plants.
Appendix A Methods 1A, 2C, and 2D (3/28/89)	Amendment	Adds 3 test methods for sampling small stacks and ducts to determine leaks of volatile organic compounds in the manufacturing of synthetic organic chemicals.
E, 61.53 to 61.56 (3/19/87)	Amendment	Adds monitoring, reporting and testing requirements to the standards for mercury-cell chlor-alkali plants.
A, 61.01 (10/08/87)	Amendment	Amends the list of hazardous substances which EPA has indicated may cause serious health effects from ambient air exposure.
61.54, 61.60, 61.64, 61.65, 61.70, 61.153, 61.245, Appendix B (9/23/88)	Amendment	Corrections to errors made in various subparts and test methods, related to reporting and recordkeeping requirements.

PROGRAM CONSIDERATIONS:

In acquiring the delegation to administer these federal rules in Oregon, the Department assumes responsibility of enforcing these rules. Currently the Department oversees 42 NSPS performance standards and 5 NESHAPS emissions standards. This proposed action adds only two new NSPS performance standards, with the remainder being amendments to current standards and test methods. The adoption of these rules is not expected to add significantly to the resource burden. The Department believes it can effectively administer and enforce these rules.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. Recommend to the commission not to adopt any of the new and amended federal standards. The Department would lose its delegation of authority to administer these rules in Oregon, leaving administration and enforcement to EPA.
2. Recommend to the Commission adoption of all new and amended federal standards (in Oregon rule form), as listed in Attachment A - Supplemental Background Information.
3. Recommend to the Commission adoption of only those standards applicable to existing sources in Oregon, or to sources which could likely locate in Oregon in the future. This follows past practices and is acceptable to EPA. Following this course of action would mean that the following NSPS and NESHAPS standards listed in Attachment A - Supplemental Background Information, would not be added:
 - a. Item 8, Fossil Fuel-Fired Steam Generators. Not applicable. This applies only to two boilers at a plant in Illinois.
 - b. Item 10, Rubber Tire Manufacturing. Not applicable. There are currently no such plants in Oregon, nor any reasonable expectation of such facilities being located in Oregon.
 - c. Item 17, Residential Wood Heaters. This rule will be addressed separately, at a later date, as part of an overall update of DEQ's Woodstove Certification rules. The aim of the Department is to align them as much as possible with EPA's rules. DEQ will need to maintain its efficiency labelling program per statutory and EQC requirements, at least until EPA develops an equivalent program. DEQ should be able to defer to EPA the manufacturer's emission certification and labelling program to provide for more efficient administration on a national basis. At the same time DEQ will be retaining the authority to enforce at retail outlets, since EPA resources will not be able to adequately address this. The issue of improving the durability of stoves to insure maintaining peak in-home emission control will also need to be addressed by the EQC.

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- d. Item 18, PS 6 for Continuous Emission Rate Monitoring Systems (CERMS). Not applicable. After review with EPA, this was seen as not applicable to existing Oregon sources.
- e. Item 19, Extension to Kraft Pulp Mill. Not applicable. This applies only to a specific plant in Georgia.
- f. Item 21, Magnetic Tape Manufacturing. Not applicable. No current or expected manufacturing in Oregon.
- g. Item 24, Petroleum Refinery Wastewater Systems. Not applicable. No current or expected petroleum refineries in Oregon.
- h. Item 25, Magnetic Tape Manufacturing. Same as above f., Item 21.
- i. Item 29, Radionuclides. After review with EPA, seen as not applicable to Oregon. An emission primarily from elemental phosphorus plants; none currently located, nor any expected to locate in Oregon.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department prefers Alternative 3 because it would avoid adding unnecessary standards for sources which do not exist or are likely to exist in Oregon. If at some time in the future, a new source locates in Oregon for which there are no applicable state standards, the new source could be issued a permit by the Department, but would be covered under the applicable federal rules until which time state rules are adopted. Therefore, the Department recommends adoption of the rule amendments as proposed.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed action is consistent with the Fiscal Year 1989 State and EPA Agreement to bring its rules up to date with federal NSPS and NESHAPS rules changes. The Department is not aware of any conflicts involving these federal rules and agency or legislative policies.

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ISSUES FOR COMMISSION TO RESOLVE:

No major issues. This is relatively straightforward updating of administrative rules.

INTENDED FOLLOWUP ACTIONS:

- File adopted rules with the Secretary of State

Approved:

Section:

Division:

Director:

John F. Kowalzyk
John F. Kowalzyk
John F. Kowalzyk

Report Prepared By: Brian R. Finneran

Phone: 229-6278

Date Prepared: September 20, 1989

BRF:r
PLAN\AR1339 (9/89)

SUPPLEMENTAL BACKGROUND INFORMATION

During 1987 and 1988, 5 new and 26 amended rules were published in the Federal Register by EPA. These federal rules covered the following source categories.

NATIONAL SOURCE PERFORMANCE STANDARDS

<u>40 CFR Subpart</u>	<u>New (N) or (A) Amended Rule</u>	<u>Subject of Rule Change</u>	<u>Register Date</u>
1. HH, 60.343 (b) and 60.344 (c)	A	Rule Revisions, Lime Manufacturing Plants	2/17/87
2. Appendix A, Method 18	A	Changes Gas Chromatography Test Method	2/19/87
3. A, 60.8	A	Amendments to Opacity Provisions	3/26/87
4. Ka, 60.111a to 60.114a	N	Standards For VOL Storage Vessels	4/08/87
5. Kb, 60.110b to 60.117b	A	Rule Revisions-Petroleum Liquid Storage Vessels	4/08/87
6. Appendix A, Method 15A	A	Add Test Method for Petroleum Refineries	6/01/87
7. Appendix F Procedure 1	A	QA Requirements for Gaseous CEM's	6/04/87
*8. D,60.43a	A	Rule Revisions, Fossil- Fuel-Fired Steam Generators	8/04/87
9. Appendix A Method 10A	A	Add Test Method for Petroleum Refineries	8/17/87
*10. BBB, 60.540 to 548	N	Add Standard for Rubber Tire Manufacturing Industry	9/15/87
11. Appendix A Methods 16A and 16B	A	Add Test Method, Sulfur Emissions	9/29/87
12. Appendix A Method 6	A	Changes SO ₂ Test Method	10/28/87

13.	DD, 60.300 GG, 60.330	A	Applicability dates for Grain Elevators, Stationary Gas Turbines	11/05/87
14.	Db, 60.42b, 60.45b 60.47b Appendix A Method 19	A	Add SO ₂ Standard for Industrial-Commercial- Institutional Steam Generating Units	12/16/87
15.	TTT, 60.720 to 60.726	N	Add Standard for Industrial Surface Coating- Plastic Parts for Business Machines	1/29/88
16.	Appendix A Method 25	A	Changes Flame Ionization Test Method	2/12/88
*17.	AAA, 60.530 to 539b	N	Standards for New Residential Wood Heaters	2/26/88
*18.	Appendix B, PS 6	A	Add Performance Standard for CERMS	3/09/88
*19.	BB, 60.286	A	Extension to IT Waiver for Kraft Pulp Mills	4/12/88
20.	Appendix A Method 5F	A	Add Alternative Procedure to Test Method	8/08/88
*21.	SSS, 60.710 to 718	N	Standards for Magnetic Tape Manufacturing Industry	10/03/88
22.	O, 60.153 & 60.154	A	Rule Revisions, Sewage Treatment Plants	10/06/88
23.	Appendix A, Methods 10 and 10B Appendix B, PS 4	A	Changes Test Method and CEMS's for CO	10/21/88
*24.	J, 60.106b	A	VOC Emissions from Petroleum Refinery Wastewater Systems	11/23/88
*25.	SSS, 60.711 to 718	A	Corrections, Magnetic Tape Industry	11/29/88
26.	F, 60.63 & 60.64	A	Rule Revisions, Portland Cement Plants	12/14/88
27.	Appendix A Methods 1A, 2C, and 2D	A	Adds New Test Methods	3/28/89

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

28.	E, 61.53 to 61.56	A	Rule Revisions to Mercury Standards	3/19/87
*29.	K, 61.123 to 126 61.07 to 13	A	Technical Amendments, Radionuclides	7/28/87
30.	A, 61.01	A	Rule Revisions, General Provisions	10/08/87
31.	61.54, 61.60, 61.64, 61.65, 61.70, 61.153, 61.245, Appendix B	A	Rule Revisions, General Provisions and Test Methods	9/23/88

* Items not being considered for adoption in Oregon because of non-applicability or appropriateness at this time.

PLAN\AR455

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(2), this statement provides information on the intended action to amend rules.

1. Legal Authority

This proposal amends Oregon Administrative Rules 340-25-450 to 340-25-805. It is proposed under authority of Oregon Revised Statutes 468.020(1) and 468.295(3) where the Environmental Quality Commission is authorized to establish different rules for different sources of air pollution.

2. Need for the Rule

The proposed changes bring the Oregon rules up-to-date with changes and additions to the federal "Standards of Performance for New Stationary Sources", 40 CFR 60, and "National Emission Standards for Hazardous Air Pollutants", 40 CFR 61. As Oregon rules are kept up-to-date with the federal rules, then the federal Environmental Protection Agency (EPA) delegates authority to enforce their rules to the Department, allowing Oregon industry and commerce to be regulated by only one environmental agency.

3. Principal Documents Relied Upon in this Rulemaking

Title 40 Code of Federal Regulations, as amended in recent Federal Registers.

<u>40 CFR Subpart</u>	<u>New (N) or (A) Amended Rule</u>	<u>Subject of Rule Change</u>	<u>Register Date</u>
1. HH, 60.343 (b) and 60.344 (c)	A	Rule Revisions, Lime Manufacturing Plants	2/17/87
2. Appendix A, Method 18	A	Changes Gas Chromatography Test Method	2/19/87
3. A, 60.8	A	Amendments to Opacity Provisions	3/26/87
4. Ka, 60.111a to 60.114a	N	Standards For VOL Storage Vessels	4/08/87

5.	Kb, 60.110b to 60.117b	A	Rule Revisions-Petroleum Liquid Storage Vessels	4/08/87
6.	Appendix A, Method 15A	A	Add Test Method for Petroleum Refineries	6/01/87
7.	Appendix F Procedure 1	A	QA Requirements for Gaseous CEM's	6/04/87
8.	Appendix A, Method 10A	A	Add Test Method for Petroleum Refineries	8/17/87
9.	Appendix A Methods 16A and 16B	A	Add Test Method, Sulfur Emissions	9/29/87
10.	Appendix A Method 6	A	Changes SO ₂ Test Method	10/28/87
11.	DD, 60.300 GG, 60.330	A	Applicability dates for Grain Elevators, Stationary Gas Turbines	11/05/87
12.	Db, 60.42b, 60.45b 60.47b Appendix A Method 19	A	Add SO ₂ Standard for Industrial-Commercial- Institutional Steam Generating Units	12/16/87
13.	TTT, 60.720 to 60.726	N	Add Standard for Industrial Surface Coating- Plastic Parts for Business Machines	1/29/88
14.	Appendix A Method 25	A	Changes Flame Ionization Test Method	2/12/88
15.	Appendix A Method 5F	A	Add Alternative Procedure to Test Method	8/08/88
16.	O, 60.153 & 60.154	A	Rule Revisions, Sewage Treatment Plants	10/06/88
17.	Appendix A, Methods 10 and 10B Appendix B, PS 4	A	Changes Test Method and CEMS's for CO	10/21/88
18.	F, 60.63 & 60.64	A	Rule Revisions, Portland Cement Plants	12/14/88
19.	Appendix A Methods 1A, 2C, and 2D	A	Adds New Test Methods	3/28/89

20.	E, 61.53 to 61.56	A	Rule Revisions to Mercury Standards	3/19/87
21.	A, 61.01	A	Rule Revisions, General Provisions	10/08/87
22.	61.54, 61.60, 61.64, 61.65, 61.70, 61.153, 61.245, Appendix B	A	Rule Revisions, General Provisions and Test Methods	9/23/88

LAND USE COMPATIBILITY STATEMENT

The Department has concluded that the proposed rules appear to affect land use and will be consistent with Statewide Planning Goals and Guidelines.

Goal 6: (Air, Water and Land Resources Quality): The proposal is designed to improve and maintain air quality in the affected area and is therefore consistent with the goal.

Goal 11: (Public Facilities and Services): The proposal is deemed unaffected by the rules.

Public comment on any land use issue involved is welcome and may be submitted in the same manner as indicated for testimony in this notice.

FISCAL AND ECONOMIC IMPACT

These federal rules are already promulgated by EPA, therefore sources affected are already subject to the costs of control and compliance. Adoption by and delegation to DEQ simplifies environmental administration generally at less cost.

Small businesses will incur less cost and processing time if these rules are administered by only one agency.

PLAN\AR437

A CHANCE TO COMMENT ON...

New Federal Air Quality Rules To Be Adopted as State Standards

NOTICE OF PUBLIC HEARING

Hearing Date: August 25, 1989

Comments Due: August 30, 1989

WHO IS AFFECTED: Industry which may build new, reconstruct, or modify air pollution sources in the categories listed below.

WHAT IS PROPOSED: The Department of Environmental Quality (DEQ) is proposing to amend OAR 340-25-450 to 340-25-805 to add two new and 20 modified rules already in force under the federal Environmental Protection Agency (EPA):

<u>Item</u>	<u>40 CFR Subpart</u>	<u>Industry Affected</u>
1.	HH, 60.343 (b) and 60.344 (c)	Rule Revisions, Lime Manufacturing Plants
2.	Appendix A, Method 18	Changes Gas Chromatography Test Method
3.	A, 60.8	Amendments to Opacity Provisions
4.	Ka, 60.111a to 60.114a	Standards For VOL Storage Vessels
5.	Kb, 60.110b to 60.117b	Rule Revisions-Petroleum Liquid Storage Vessels
6.	Appendix A, Method 15A	Add Test Method for Petroleum Refineries
7.	D,60.43a	Rule Revisions, Fossil-Fuel-Fired Steam Generators
8.	Appendix A Method 10A	Add Test Method for Petroleum Refineries
9.	Appendix A Methods 16A and 16B	Add Test Method, Sulfur Emissions
10.	Appendix A Method 6	Changes SO ₂ Test Method



811 S.W. 6th Avenue
Portland, OR 97204

11/1/86

FOR FURTHER INFORMATION:

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.

C - 1

- | | | |
|-----|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 11. | DD, 60.300A
GG, 60.330 | Applicability dates for
Grain Elevators,
Stationary Gas Turbines |
| 12. | Db, 60.42b, 60.45b
60.47b Appendix A
Method 19 | Add SO ₂ Standard for
Industrial-Commercial-
Institutional Steam
Generating Units |
| 13. | TTT, 60.720 to
60.726 | Add Standard for
Industrial Surface Coating-
Plastic Parts for Business
Machines |
| 14. | Appendix A
Method 25 | Changes Flame Ionization
Test Method |
| 15. | Appendix A
Method 5F | Add Alternative
Procedure to Test Method |
| 16. | O, 60.153 & 60.154 | Rule Revisions, Sewage
Treatment Plants |
| 17. | Appendix A,
Methods 10 and 10B
Appendix B, PS 4 | Changes Test Methods and
CEMS's for CO |
| 18. | F, 60.63 & 60.64 | Rule Revisions, Portland
Cement Plants |
| 19. | Appendix A
Methods 1A, 2C,
and 2D | Adds New Test Methods |
| 20. | E, 61.53 to 61.56 | Rule Revisions to Mercury
Standards |
| 21. | A, 61.01 | Rule Revisions, General
Provisions |
| 22. | 61.54, 61.60,
61.64, 61.65,
61.70, 61.153,
61.245, Appendix B | Rule Revisions, General
Provisions and Test
Methods |

WHAT ARE THE HIGHLIGHTS:

The Department proposes to adopt these federal rules and to request EPA to delegate authority to enforce over those sources in Oregon to DEQ. This is considered a routine rulemaking action, since the sources must abide by an identical federal rule, already in force.

HOW TO COMMENT:

Copies of the complete proposed rule package may be obtained from the Air Quality Division in Portland, 811 S.W. Sixth Avenue, or the regional office nearest you. For further information contact Brian Finneran at (503) 229-6278.

A public hearing will be held before a hearings officer at:

10 A.M.
Friday, August 25, 1989
Room 4a, 4th floor, Executive Building
811 S.W. 6th, Portland, OR 97204

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ, but must be received by no later than August 30, 1989.

WHAT IS THE NEXT STEP:

After public hearing, the Environmental Quality Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted rules will be submitted to the U.S. Environmental Protection Agency for delegation. The Commission's deliberation should come on September 8, 1989, as part of the agenda of a regularly scheduled Commission meeting.

A Statement of Need, Fiscal and Economic Impact Statement, and Land Use Consistency Statement are attached to this notice.

PLAN\AR438

PROPOSED RULE REVISIONS

Emission Standards and Procedural
Requirements for Hazardous Air Contaminants

General Provisions

OAR 340-25-460

(1) Applicability. The provisions of these rules shall apply to any source which emits air contaminants for which a hazardous air contaminant standard is prescribed. Compliance with the provisions of these rules shall not relieve the source from compliance with other applicable rules of the Oregon Administrative Rules, Chapter 340, or with applicable provisions of the Oregon Clean Air Act Implementation Plan.

(2) Prohibited activities:

(a) No person shall operate any source of emissions subject to these rules without first registering such source with the Department following procedures established by ORS 468.320 and OAR 340-20-005 through 340-20-015. Such registration shall be accomplished within ninety (90) days following the effective date of these rules.

(b) After the effective date of these rules, no person shall construct a new source or modify any existing source so as to cause or increase emissions of contaminants subject to these rules without first obtaining written approval from the Department.

(c) No person subject to the provisions of these emission standards shall fail to provide reports or report revisions as required in these rules.

(3) Application for approval of construction or modification. All applications for construction or modification shall comply with the requirements of rules 340-20-020 through 340-20-030 and the requirements of the standards set forth in these rules.

(4) Notification of startup. Notwithstanding the requirements of rules 340-20-020 through 340-20-030, any person owning or operating a new source of emissions subject to these emission standards shall furnish the Department written notification as follows:

(a) Notification of the anticipated date of startup of the source not more than sixty (60) days nor less than thirty (30) days prior to the anticipated date.

(b) Notification of the actual startup date of the source within fifteen (15) days after the actual date.

(5) Source reporting and approval request. Any person operating any existing source, or any new source for which a standard is prescribed in these rules which had an initial startup which preceded the effective date of these rules shall provide the following information to the Department within ninety (90) days of the effective date of these rules:

- (a) Name and address of the owner or operator.
- (b) Location of the source.
- (c) A brief description of the source, including nature, size, design, method of operations, design capacity, and identification of emission points of hazardous contaminants.
- (d) The average weight per month of materials being processed by the source and percentage by weight of hazardous contaminants contained in the processed materials, including yearly information as available.
- (e) A description of existing control equipment for each emission point, including primary and secondary control devices and estimated control efficiency of each control device.

(6) Source emission tests and ambient air monitoring.

(a) Emission tests and monitoring shall be conducted using methods set forth in 40 CFR, Part 61, Appendix B, as published in the Code of Federal Regulations last amended by the Federal Register, [November 7, 1985, pages 46290 to 46295] November 21, 1988, page 46976. The methods described in 40 CFR, Part 61, Appendix B, are adopted by reference and made a part of these rules. Copies of these methods are on file at the Department of Environmental Quality.

(b) At the request of the Department, any source subject to standards set forth in these rules may be required to provide emission testing facilities as follows:

(A) Sampling ports, safe sampling platforms, and access to sampling platforms adequate for test methods applicable to such source.

(B) Utilities for sampling and testing equipment.

(c) Emission tests may be deferred if the Department determines that the source is meeting the standard as proposed in these rules. If such a deferral of emission tests is requested, information supporting the request shall be submitted with the request for written approval of operation. Approval of deferral of emission tests shall not in any way prohibit the Department from canceling the deferral if further information indicates that such testing may be necessary to insure compliance with these rules.

(7) Delegation of authority. The commission may, when any regional authority requests and provides evidence demonstrating its capability to carry out the provisions of these rules relating to hazardous contaminants, authorize and confer jurisdiction within its boundary until such authority and jurisdiction shall be withdrawn for cause by the Commission.

Emission Standard For Mercury

OAR 340-25-480

(1) Applicability. The provisions of this rule are applicable to sources which process mercury ore to recover mercury, sources using mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and to any other source, the operation of which results or may result in the emission of mercury to the ambient air.

(2) Emission Standard. No person shall cause to be discharged into the atmosphere emissions from any source exceeding 2,300 grams of mercury during any 24 hour period, except that mercury emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3200 grams of mercury per 24 hour period.

(3) Stack sampling:

(a) Mercury ore processing facility:

(A) Unless a deferral of emission testing is obtained under subsection 340-25-460(6)(c) of these rules, each person operating source processing mercury ore shall test emissions from his source, subject to the following:

(i) Within ninety (90) days of the effective date of these rules for existing sources or for new sources having startup dates prior to the effective date of this standard.

(ii) Within ninety (90) days of startup in the case of a new source having a startup date after the effective date of this standard.

(B) The Department shall be notified at least thirty (30) days prior to an emission test so that they may, at their option, observe the test.

(C) Samples shall be taken over such periods and frequencies as necessary to determine the maximum emissions occurring during any 24 hour period. Calculations of maximum 24 hour emissions shall be based on that combination of process operating hours and any variation in capacities or processes that will result in maximum emissions. No changes in operation which may be expected to increase total emissions over those determined by the most recent stack test shall be made until estimates of the increased emissions have been calculated, and have been reported to and approved in writing by the Department.

(D) All samples shall be analyzed and mercury emissions shall be determined and reported to the Department within thirty (30) days following the stack test. Records of emission test results and other data needed to determine mercury emissions shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years following such determination.

(b) Mercury Chlor-alkali plant:

(A) Hydrogen and end-box ventilation gas streams. Unless a deferral of emission testing is obtained under subsection 340-25-460(6)(c), each person operating a source of this type shall test emissions from his source following the provisions of subsection (3)(a) of this rule.

(B) Room ventilation system:

(i) Unless a deferral of emission testing is obtained under subsection 340-25-460(6)(c), all persons operating mercury chlor-alkali plants shall pass all cell room air in forced gas streams through stacks suitable for testing.

(ii) emissions from cell rooms may be tested in accordance with provisions of paragraph (3)(b)(a) of this rule or may demonstrate compliance with paragraph (3)(b)(B)(iii) of this rule and assume ventilation emissions of 1,300 grams/day of mercury.

(iii) If no deferral of emission testing is requested, each person testing emissions shall follow the provisions of subsection (3)(a) of this rule.

(c) Any person operating a mercury chlor-alkali plant may elect to comply with room ventilation sampling requirements by carrying out approved design, maintenance, and housekeeping practices. A summary of these approved practices shall be available from the Department.

(d) Stack sampling and sludge sampling at wastewater treatment plants shall be performed in accordance with 40 CFR 61.53(d) or 40 CFR 61.54, last amended by Federal Register [November 7, 1985, pages 46290 to 46295] on March 19, 1987, pages 8724 to 8728.

Standards of Performance for New Stationary Sources

Definitions

OAR 340-25-510

- (1) "Administrator" herein and in Title 40, Code of Federal Regulations, Part 60, means the Director of the Department or appropriate regional authority.
- (2) "Federal Regulation" means Title 40, Code of Federal Regulations, Part 60, as promulgated prior to [January 15, 1987] March 29, 1989.
- (3) "CFR" means Code of Federal Regulations.
- (4) "Regional authority" means a regional air quality control authority established under provisions of ORS 468.505.

General Provisions

OAR 340-25-530

Title 40, CFR, Part 60, Subpart A, as promulgated prior to [January 15, 1987] March 29, 1989, is by this reference adopted and incorporated herein. Subpart A includes paragraphs 60.1 to 60.18 which address, among other things, definitions, performance tests, monitoring requirements, and modifications.

Performance Standards

Federal Regulations Adopted by Reference

OAR 340-25-535

Title 40, CFR, Parts 60.40 through 60.154, and 60.250 through 60.648, and 60.680 through 60.685, as established as final rules prior to [January 15, 1987] March 29, 1989, is by this reference adopted and incorporated herein, with the exception of the December 27, 1985 federal register revision to 40 CFR 60.11(b). As of [January 15, 1987] March 29, 1989, the Federal Regulations adopted by reference set the emission standards for the new stationary source categories set out in rules 340-25-550 through [340-25-715] 340-25-725 (these are summarized for easy screening, but testing conditions, the actual standards, and other details will be found in the Code of Federal Regulations).

**Standards of Performance for Industrial-Commercial-Institutional Steam
Generating Units**

OAR 340-25-553

The pertinent federal rules are 40 CFR 60.40b to 60.49b, also known as Subpart Db. The following emission standards, summarizing the federal standard set forth in Subpart Db, apply to each steam generating unit of more than 29 MW (100 million BTU/hr) heat input capacity, which commenced construction, modification, or reconstruction after June 19, 1984:

(1) Standards for Particulate Matter. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any affected facility any gases which:

(a) Contain particulate matter in excess of 22 to 86 nanograms per joule (0.05 to 0.20 lb/million BTU) heat input from firing the fuels as specified in 40 CFR 60.43b.

(b) Exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(2) Standards for Nitrogen Oxides. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any affected facility any gases which contain nitrogen oxides in excess of 43 to 340 nanograms per joule (0.10 to 0.80 lb/million BTU) heat input, as specified in table in 40 CFR 60.44b(a).

(3) Standards for Sulfur Dioxide. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of the amounts specified in 40 CFR 60.42b:

(a) 10 to 50 percent of the potential sulfur dioxide emission rate;

(b) 520 nanograms per joule (1.2 lb/million BTU) of heat input;

(c) amount determined according to the formula in 40 CFR 60.42b.

Standards of Performance for Portland Cement Plants

OAR 340-25-560

The pertinent federal rules are 40 CFR 60.60 to [60.64] 60.65, also known as Subpart F. The following emission standards, summarizing the federal standards set forth in Subpart F, shall apply to each Portland cement plant:

(1) Standards for Particulate Matter from Kiln. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any kiln any gases which:

(a) Contain particulate matter in excess of 0.15 Kg. per metric ton (0.30 lb. per ton) of feed (dry basis) to the kiln.

(b) Exhibit greater than 20 percent opacity.

(2) Standards for Particulate Matter from Clinker Cooler. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any clinker cooler any gasses which:

(a) Contain particulate matter in excess of 0.050 Kg. per metric ton (0.10 lb. per ton) of feed (dry basis) to the kiln.

(b) Exhibit 10 percent opacity or greater.

(3) Standards for Particulate Matter for Other Facilities. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity or greater.

Standards of Performance for Volatile Organic Liquid Storage Vessels
OAR 340-25-587

The pertinent federal rules are 40 CFR 60.110b to 60.116b, also known as Subpart Kb. The following requirements, summarizing the federal requirements set forth in Subpart Kb, apply to each storage vessel for volatile organic liquids (VOL's) which has a storage capacity greater than or equal to 40 cubic meters (m^3), for which construction, reconstruction, or modification is commenced after July 23, 1984. "Volatile organic liquid" (VOL) means any organic liquid which can emit volatile organic compounds into the atmosphere. These compounds are identified in EPA statements on ozone abatement policy for SIP revisions (42 FR 35314, 44 FR 32042, 45 FR 32424, and 45 FR 48941). Each storage vessel with a design capacity greater than or equal to 40 m^3 and less than 75 m^3 shall have readily accessible records showing the dimension of the vessel and an analysis showing the capacity of the vessel. The owner or operator of any storage vessel to which this section applies shall store a VOL as follows:

(1) If the storage capacity is greater than or equal to 151 m^3 and the true vapor pressure of the VOL as stored is equal to or greater than 5.2 kPa but less than 76.6 kPa, or the storage capacity is greater than or equal to 75 m^3 but less than 151 m^3 and the true vapor pressure is equal to or greater than 27.6 kPa but less than 76.6 kPa, the storage vessel shall be equipped with either a fixed-internal roof combination, an external floating roof, closed vent system and control devise, or an equivalent.

(2) If the storage capacity is greater than or equal to 75 m^3 and the true vapor pressure of the VOL as stored is greater than or equal to 76.6 kPa, the storage vessel shall be equipped with either a closed vent system and control devise, or an equivalent.

Standards of Performance for Gas Turbines
OAR 340-25-645

The pertinent federal rules are 40 CFR 60.330 to 60.335, also known as Subpart GG. The following emission standards, summarizing the federal standards set forth in Subpart GG, apply to any stationary gas turbine with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (1,000 HP) for which construction, modification, or reconstruction was commenced after October 3, 1977:

(1) Standard for Nitrogen Oxides. No owner or operator subject to the provisions of this rule shall cause to be discharged into the atmosphere

from any stationary gas turbine, nitrogen oxides in excess of the rates specified in 40 CFR 60.332.

(2) Standard for Sulfur Dioxide. Owners or operators shall:

(a) Not cause to be discharged into the atmosphere from any gas turbine any gases which contain sulfur dioxide in excess of 150 ppm by volume at 15 percent oxygen, on a dry basis; or

(b) Not burn in any gas turbine any fuel which contains sulfur in excess of 0.80 percent by weight.

Standards of Performance for Surface Coating of Plastic Parts for Business Machines

OAR 340-25-725

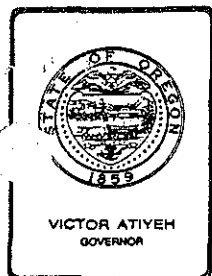
The pertinent federal rules are 40 CFR 60.720 to 60.725, also known as Subpart TTT. The following emission standard, summarizing the federal standard set forth in Subpart TTT, applies to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats. The standard applies to any affected facility which commenced construction, modification, or reconstruction after January 8, 1986.

Standards for Volatile Organic Compounds: No owner or operator shall cause to be discharged into the atmosphere Volatile Organic Compounds (VOC) that exceed the following:

(1) 1.5 kilograms of VOC per liter of coating solids applied from prime coating and color coating;

(2) 2.3 kilograms of VOC per liter of coating solids applied from texture coating and touch-up coating.

PLAN\AR470



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

REQUEST FOR EQC ACTION

Meeting Date: July 21, 1989
 Agenda Item: F
 Division: Air Quality
 Section: Planning & Development

SUBJECT:

Request for authorization to conduct a public hearing to amend Standards of Performance for New Stationary Sources (OAR 340-25-505 to -805), and to amend Emission Standards and Procedural Requirements for Hazardous Air Contaminants (OAR 340-25-450 to -485).

PURPOSE:

To keep Department rules current with federal air regulations regarding New Source Performance Standards (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAPS), so as to maintain delegation of authority to administer all appropriate aspects of these rules in Oregon.

ACTION REQUESTED:

- Work Session Discussion
 - General Program Background
 - Potential Strategy, Policy, or Rules
 - Agenda Item for Current Meeting
 - Other: (specify)
- Authorize Rulemaking Hearing
- Adopt Rules
 - Proposed Rules Attachment D
 - Rulemaking Statements Attachment B
 - Fiscal and Economic Impact Statement Attachment B
 - Public Notice Attachment C
- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order Attachment
- Approve Department Recommendation
 - Variance Request Attachment
 - Exception to Rule Attachment
 - Informational Report Attachment
 - Other: (specify) Attachment

Meeting Date: July 21, 1989
Agenda Item: F
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DESCRIPTION OF REQUESTED ACTION:

EPA regularly adopts and amends New Source Performance Standards (Part 60 of federal protection of environment rules) and emission standards for hazardous air pollutants (Part 61 of federal protection of environment rules). The Department of Environmental Quality has historically committed to seek delegation to enforce each of these new rules in Oregon by bringing its rules up to date with EPA rules, when the Department believes those rules are applicable and appropriate in Oregon. "Applicable" means the existence of affected sources located in the state, or likely to move into the state. "Appropriate" means the federal rules are reasonable and enforceable within DEQ resources and enforcement policies. By maintaining delegation to administer these federal rules in Oregon, the Department believes it can provide a more efficient implementation of the rules and reduce the confusion of industry having to deal with two agencies (DEQ and EPA).

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment _____
Enactment Date: _____	
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.020/468.295(3)</u>	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Rule: <u>OAR 340-25-450 to -805</u>	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule: <u>40 CFR Parts 60 and 61</u>	Attachment _____
<input type="checkbox"/> Other: _____	Attachment _____
<input type="checkbox"/> Time Constraints: (explain) _____	

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment _____
<input type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment _____
<input type="checkbox"/> Response to Testimony/Comments	Attachment _____
<input type="checkbox"/> Prior EQC Agenda Items: (list)	Attachment _____
<input type="checkbox"/> Other Related Reports/Rules/Statutes:	Attachment _____
<input checked="" type="checkbox"/> Supplemental Background Information	Attachment <u>A</u>

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

The Department proposes to amend its administrative rules to adopt two new standards, modify 4 existing standards, and adopt by reference 16 other changes to standards and test methods, in order bring the State rules up to date with EPA's NSPS and NESHAPS rule changes, where appropriate and applicable.

Meeting Date: July 21, 1989
Agenda Item: F
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These proposed rules affect only industry which may build new, reconstruct, or modify air pollution sources. Of the two new standards, one may affect approximately 5 to 10 existing facilities in Oregon where volatile organic liquid storage vessels are in use, while the other may affect approximately the same number of facilities which operate relatively small-scale paint spray booths for plastic parts for business machines.

These federal rules are already promulgated by EPA, and therefore the sources affected are already subject to the costs of control and compliance. Adoption by and delegation to DEQ simplifies environmental administration, and may save industry time and cost in dealing with just one agency.

PROGRAM CONSIDERATIONS:

In acquiring the delegation to administer these federal rules in Oregon, the Department assumes responsibility of enforcing these rules. Currently the Department oversees 42 NSPS performance standards and 5 NESHAPS emissions standards. This proposed action adds only two new NSPS performance standards, with the remainder being amendments to current standards and test methods. The adoption of these rules is not expected to add significantly to the resource burden. The Department believes it can effectively administer and enforce these rules.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

The Department has considered two alternatives:

1. Recommend to the Commission adoption of all new and amended federal standards (in Oregon rule form), as listed in Attachment A - Supplemental Background Information.
2. Recommend to the Commission adoption of only those standards applicable to existing sources in Oregon, or to sources which could likely locate in Oregon in the future. This follows past practices and is acceptable to EPA. This would mean that the following NSPS and NESHAPS standards listed in Attachment A - Supplemental Background Information, would not be added:
 - a. Item 8, Fossil Fuel-Fired Steam Generators. This applies only to two boilers at a plant in Illinois.
 - b. Item 10, Rubber Tire Manufacturing. Not applicable. There are currently no such plants in Oregon.

- c. Item 17, Residential Wood Heaters. This rule will be addressed separately later as part of an overall update of DEQ's Woodstove Certification rules, to align them as much as possible with EPA's rules. DEQ will need to maintain its efficiency labelling program per statutory requirements, at least until EPA develops an equivalent program. DEQ should be able to defer to EPA the manufacturer's emission certification and labelling program, to provide for more efficient administration on a national basis, while retaining the authority to enforce at retail outlets, since EPA resources will not be able to adequately address this. The issue of improving the durability of stoves to insure maintaining peak inhome emission control may also need to be addressed, as results of EPA/DEQ inhome studies become available later this year.
- d. Item 18, PS 6 for Continuous Emission Rate Monitoring Systems (CERMS). After review with EPA, this was seen as not applicable to existing Oregon sources.
- e. Item 19, Extension to Kraft Pulp Mill. This applies only to a specific plant in Georgia.
- f. Item 21, Magnetic Tape Manufacturing. Not applicable. No current manufacturing in Oregon.
- g. Item 24, Petroleum Refinery Wastewater Systems. No current wastewater systems in Oregon (no petroleum refineries).
- h. Item 25, Magnetic Tape Manufacturing. Same as above f., Item 21.
- i. Item 29, Radionuclides. After review with EPA, seen as not applicable to Oregon. An emission primarily from elemental phosphorus plants; none currently in Oregon.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department prefers Alternative 2 because it would avoid adding unnecessary standards for sources which do not exist or are likely to exist in Oregon. If, at some time in the future, a new source locates in Oregon for which there are no applicable standards, the Department could then recommend adoption of new rules on a case-by-case basis. The Department recommends that the Commission authorize public hearings to take place concerning only the adoption of applicable standards.

Meeting Date: July 21, 1989
Agenda Item: F
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hearings to take place concerning only the adoption of applicable standards.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed action is consistent with the Fiscal Year 1989 State and EPA Agreement to bring its rules up to date with federal NSPS and NESHAPS rules changes. The Department is not aware of any conflicts involving these federal rules and agency or legislative policies.

ISSUES FOR COMMISSION TO RESOLVE:

No major issues. This is relatively straightforward updating of administrative rules.

INTENDED FOLLOWUP ACTIONS:

- o File hearing notice with the Secretary of State
- o Hold public hearing
- o Review oral and written testimony and revise proposed rules and amendments as appropriate
- o Return to Commission for final rule adoption

Approved:

Section:

Division:

Director:

John F. Finneran
John F. Finneran
Luzia R. Taylor

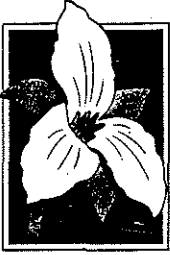
Report Prepared By: Brian Finneran

Phone: 229-6278

Date Prepared: July 6, 1989

BR:r
PLAN\AR453
(7/6/89)

NORTHWEST ENVIRONMENTAL ADVOCATES



October 19, 1989

William Hutchison, Chair
Environmental Quality Commission
811 S.W. 6th
Portland, Oregon 97201

Dear Commission Hutchison:

This letter is intended to briefly address the questions raised by the Commission at its September 8, 1989 meeting. We respect the difficulty of the decision that the Commission must make as it struggles with a somewhat ambiguous regulatory framework and facts which are characterized more by their absence than their presence. We are encouraged by the Commission's eagerness to understand these complex issues. This letter is intended to supplement the analysis presented in our previous letters.

To help you with your consideration of the major new discharge related to this permit, we explain below that the Lower Columbia River is water quality limited and that this fact restricts the Commission's ability to approve the new discharge and issue a new NPDES permit. Moreover, the Commission is prohibited from granting conditional approval because its rules do not allow and the facts do not support such an action.

We begin by reiterating at the outset two simple but critical points which we believe the Applicant -- WTD Industries -- and the Department of Environmental Quality (DEQ) continue to misrepresent. First, while WTD's commitment to state-of-the-art technology is commendable, it is also irrelevant, insofar as the proposed mill will be discharging into a water quality limited stream. This is because Oregon has adopted a water quality control program, in lieu of a technology-based regulatory program. With this new regulatory philosophy, the state is not aiming for use of the best available technology; instead it is attempting to actually meet established standards for a clean environment.

Second, as the DEQ staff points out, and as was discussed in our September 6th letter, it is one thing to have a strategy planned or even in place which will bring the river into compliance with water quality standards and quite another to have actually met the standard. DEQ Staff Report Addendum for the October 20th meeting, at page 6. This latter issue will be discussed further below.

Once the Commission has concluded that the Lower Columbia River is or may be water quality limited, an NPDES permit may not be issued pursuant to OAR 340-41-026. Instead the Total Maximum Daily Load (TMDL) process must be invoked, Waste Load Allocations (WLA's) made, and water quality standards actually

achieved. To do otherwise renders the standards themselves mere goals and the TMDL/WLA process meaningless.

I. THE LOWER COLUMBIA RIVER IS WATER QUALITY LIMITED

The Lower Columbia River is identified as water quality limited for dioxin by Oregon's 305(b) report, by the 304(1) listing process and by DEQ's Oregon Environmental Atlas. It is also identified as water quality limited for dioxin in the draft National Estuary Program nomination package prepared by DEQ, in DEQ's own Staff Report for the EQC meetings on the WTD application, and numerous other letters and memoranda. These identifications make it impossible for the Commission to make an affirmative finding that the Lower Columbia River is not water quality limited.

The Oregon 305(b) Report lists water quality in the Lower Columbia/Clatskanie Columbia River as threatened for the beneficial uses of boating, fishing and aquatic life. Toxic organics due to discharges from industrial point sources are the parameters of concern. See 305(b) Report Appendix A-1.

DEQ's Environmental Atlas also recognizes that the water quality in the Lower Columbia River "threatens fish life and swimming." See Environmental Atlas page 35. Similarly, EPA's 1980 Environmental Profile of the Lower Columbia River found "unacceptable to severe" levels of inorganic toxicants including heavy metals such as lead, cadmium and mercury.

The Lower Columbia River is also included on Oregon's Clean Water Act (CWA) 304(1) list. This list includes waters and point source discharges which the DEQ does not expect to achieve water quality standards. The presence of dioxin in the effluent at James River (River Mile 41) and Boise Cascade (River Mile 86) has placed these point sources on the 304(1)(B) list. (The Pope and Talbot pulp mill at Willamette River Mile 148 is also on this list because as a tributary it is considered by EPA to be a contributor to the dioxin levels in the Columbia River.) DEQ Letter to Robie Russel, EPA dated June 4, 1989.

The State of Washington has also listed from Bonneville Dam to the mouth of the Columbia on its 304(1) list as contaminated with dioxin. Unlike Washington State, DEQ claims in its Staff Report Addendum for EQC's October 20 meeting that it cannot use its best professional judgement to list any more than the exact river miles where the discharge pipes are located. Washington State and the EPA have used their professional

Commissioner Hutchison
October 19, 1989
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judgement to list the entire Lower Columbia River. Similarly, DEQ has not opposed the EPA's conducting of a TMDL by arguing, for example, that a TMDL should only be done for each individual river mile where dioxin is discharged.

While the 304(1) listing process requires identification of point sources contributing to impaired waterways, it does not mean that the violation of the water quality standard occurs only in the immediate vicinity of the actual discharge. EPA has stated that "Using conservative assumptions...EPA's water quality criterion for [dioxin] will be exceeded ... at all mills where [dioxin] has been detected in fish tissue." EPA's Final Guidance on Section 304(1) Listing and Permitting of Pulp and Paper Mills, March 15, 1989, page 2. Such fish tissue samples have been analyzed for the Columbia establishing that dioxin is entering the food chain in reasonable quantities. Applying the above statement, EPA would therefore consider the Lower Columbia River as exceeding the water quality standard for dioxin. The Commission should bear in mind that Oregon's water quality standard for dioxin is set so far below the level of detection that fish sampling is one very important method of measuring compliance with that standard.

EPA's Dan Bodien testified at the EQC's September 8 meeting that some dioxin binds with organic matter and sediment and washes downstream to points that are difficult to identify, much of it likely to build up in the estuary. This points to the relative uselessness of focusing solely on the receiving water immediately surrounding the discharge pipe. (WTD's David Walseth, on the other hand, told the Commission at its July meeting that all of the dioxin will fall out at the precise river mile of the outfall pipe, and that it would all wash downstream.)

Further, DEQ and EPA's agreement to promulgate a TMDL and WLA's for dioxin on the Lower Columbia River is an admission by these agencies that the Lower Columbia River is water quality limited for dioxin. Letter to Robert Burd, EPA from Lydia Taylor, DEQ dated August 16, 1989. DEQ and EPA simply would not be engaging in the TMDL/WLA process if the Lower Columbia were not water quality limited for dioxins. Moreover, the preliminary (i.e. not yet completed) Stage I calculation made by EPA and presented in DEQ's last staff report demonstrates that current dioxin discharges from known point sources far exceed the amount calculated as the maximum allowed to meet water quality standards. This very attachment repeatedly states that the Columbia River is water quality limited for dioxin -- the basis for performing the TMDL/WLAs.

L. Taylor's letter itself states that Region X "will perform an analysis ... to determine if the river will or will not be water quality limited for TCDD once the ICS's are applied." (Emphasis added.) Since the ICS's represent a significant curtailment of current dioxin discharges, it is easy to extrapolate that all of the agencies -- including DEQ -- believe that the river is currently water quality limited.

Yet, in spite of this evidence, the Commission is being asked by DEQ and the Applicant to ignore the interrelationship of the entire Columbia River and instead regulate each river mile of the Columbia River as if they were separate waterbodies.¹ Separate regulation of each river mile would fly in the face of scientific knowledge of dioxin discharges. This "river mile" approach would fail to recognize the fact that the EQC's rule requires the Commission to find that the "stream", as opposed to the stream "segment," is not water quality limited. Finally, it would fail to recognize the fact that the Commission must make an affirmative finding that the Lower Columbia River is not water quality limited. Such an affirmative finding cannot be made in light of the above mentioned reports and the lack of rebuttal data available.

Instead, the inclusion of the Lower Columbia in the reports listed above mandates a finding that the Lower Columbia River is, in fact, water quality limited.

II. OAR 340-41-026 PROHIBITS THE ISSUANCE OF AN NPDES PERMIT FOR A WATER QUALITY LIMITED STREAM SUCH AS THE LOWER COLUMBIA RIVER

As you know, the Commission's recently adopted rules, OAR 340-41-026, require a series of affirmative findings, made in good faith and based upon substantial evidence, before it can approve DEQ's issuance of an NPDES permit to WTD for its proposed pulp mill. These findings under OAR 340-41-026(3)(a) are that:

- o The new discharge will not cause water quality standards to be violated (Subsection A);

¹. The DEQ Staff suggests that the Commission has rejected the designation of the entire Lower Columbia River as water quality limited when in fact it has yet to take a position. DEQ Staff Report Addendum for the October 20th meeting, at pages 4 & 5.

- o The new discharge will not threaten or impair any recognized beneficial uses (Subsection B);
- o The new discharge must not be granted if the receiving stream is classified as being water quality limited (Subsection C); and
- o The activity is consistent with land use plans (Subsection D).

As will be discussed below, a number of these affirmative findings are not only not supported by -- but are, in fact, controverted by -- the agency's own admissions. Accordingly, the Commission cannot grant approval for an NPDES permit to WTD pursuant to OAR 340-41-026.

OAR 340-41-026 does not even contemplate consideration, much less approval, of new discharges where the receiving stream is water quality limited. In fact, the rule only authorizes NPDES permits for streams which presently have unused capacity to assimilate waste discharges. See DEQ Staff Report on Agency Item K for June 2, 1989 EQC Meeting. It is only to be used in rare and extraordinary circumstances. Statement of Fred Hanson at June 2, 1989 EQC Meeting. This is not a rare and extraordinary circumstance, nor is there any evidence that the Lower Columbia River has any unused capacity to assimilate waste discharges containing dioxin and other chlorinated organics. Even if the rule were interpreted as applying to water quality limited streams, such an intent would be defeated -- as it should in the instant case -- in the attempt to make a finding under subsection (C).

III. A TMDL AND WLA'S MUST BE ESTABLISHED, IMPLEMENTED AND SHOWN TO BE EFFECTIVE BEFORE AN NPDES PERMIT IS ISSUED TO A NEW SOURCE ON A WATER QUALITY LIMITED STREAM

The establishment and implementation of the TMDL will take time. WTD does not want to wait, instead chooses to encourage the EQC to abandon its water quality regulatory approach. NEDC and NWEA believe that the Commission must wait for the TMDL both to be established and implemented before an additional discharge of dioxin by WTD is considered. The establishment and implementation of an accurate and reliable TMDL will provide the Commission with a better understanding of the assimilative capacity (or lack thereof) of the Lower Columbia River. Such knowledge is essential before an additional loading of dioxin is allowed to be discharged into the Columbia River.

Commissioner Hutchison
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Page 6

EPA's discussion of the TMDL process in the Federal Register recognizes that new discharges to water quality limited streams should not be allowed until a TMDL is established.

[EPA] agree[s] that it is preferable for States to establish WLAs/LAS and TMDL's for their waters in advance of NPDES permit or construction grant decisions. However, if a State has many waterbodies where new WLA/LAS and TMDL's are needed, it may have to submit WLA/LAS to EPA with the permit or construction grant applications.

50 Fed Reg 17777 (January 11, 1985). This discussion indicates that EPA anticipates the establishment of TMDL's prior to the issuance of a new permit.

Similarly, this Commission has expressed its disapproval of allowing additional loadings to water quality limited streams for which TMDL's are being implemented. During the Tualatin TMDL process, both Commissioners Hutchinson and Sage expressed a desire to limit the approval to interim/new sources until compliance with water quality standards was achieved. EQC Meeting September 1988 Agenda Item R.

The Commission has been given contradictory and confusing advice by the DEQ Staff on the appropriateness of issuing new permits to water quality limited streams. DEQ appears to be suggesting in the Addendum to its Staff Report that as long as a TMDL/WLA is being conducted that the EQC has no rules to apply to new applications and therefore is free to approve a major new discharge based on the hope that the stream will come into compliance before the new discharge occurs. L. Taylor went so far to say at the September 8 meeting that EQC's approval is a "policy decision," implying that it could be made without the benefit of previously set policy guidelines or rules.

On the other hand the DEQ report acknowledges that there is no rule allowing consideration of new discharges into water quality limited streams undergoing the TMDL/WLA process: "(I)f they [planned reductions to bring the stream into compliance] haven't been completely implemented, no waste load increases could be considered." Addendum at page 6 (emphasis added). The DEQ, in this same document, acknowledges the need for a rule change if the EQC chooses to allow overloads. This however is contrary to Director Hansen's statement at the EQC meeting of September 8th that as long a TMDL is in progress the DEQ may allow increased loads (including new loads) until compliance is reached.

Currently the TMDL/WLA process is merely outlined in a DEQ handout and is not incorporated into its rules. Existing rules, however, clearly do not contemplate adding additional discharges where there is no assimilative capacity whether or not a TMDL is being performed. It is the position of NWEA and NEDC that if the EQC intends to engage in the creation of a new policy allowing an overload to a water quality limited stream then it must do so as a rulemaking. In addition, we believe this would be contrary to the Clean Water Act (CWA) and to a sound public policy.

As we have made clear in earlier submissions, neither DEQ nor EPA can provide verifiable assurances that in 3 years the ICS's will be fully implemented and water quality standards for dioxin achieved. Bob Burd of EPA and Director Hansen are quick to claim there will be full compliance. Agency staff are not. As discussed in our last letter, the EQC is considering this application at a time when the Phase I of the TMDL is not yet complete (expected completion January 1990), when Washington State has admitted to EPA that its proposed ICS's will be inadequate, when EPA has not yet approved the proposed ICS's for either state, when the pulp mill owners have challenged each of Oregon's proposed ICS's in court. Add to this the testimony of the Northwest Pulp and Paper Association (NWPPA), at the EQC September meeting, that there will be difficulties obtaining all the equipment needed to retrofit the entire nation's pulp mills, that industry has serious reservations about allowing permit regulation based on in-plant bleach flow monitoring, and that there are difficulties in measuring the effectiveness of newly installed retrofits and the picture is significantly less reassuring than WTD's advocates would have the Commission believe. In other words there is not a shred of evidence that the Columbia River will comply with the dioxin standard by the time WTD is ready to discharge.

IV. OAR 340-41-205 PROHIBITS THE PROPOSED DISCHARGE OF DIOXINS TO THE LOWER COLUMBIA RIVER.

OAR 340-41-205(2)(p) provides that:

Toxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may bioaccumulate to levels that adversely affect public

Commissioner Hutchison
October 19, 1989
Page 8


health, safety, or welfare; aquatic life; or other designated beneficial uses.

As discussed above, the presence of dioxin and other toxics in the Lower Columbia river already is suspected to threaten the beneficial uses of boating, fishing and habitat preservation. Certainly, the addition of more dioxin is likely to adversely affect these and other beneficial uses.

V. CONCLUSION

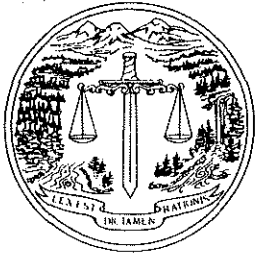
Therefore, we request that the Commission deny approval of the new bleached kraft pulp mill effluent discharge load to the Columbia River at this time.

Sincerely,


Nina Bell, Executive Director

Northwest Environmental Advocates
and for Northwest Environmental
Defense Center

cc: Dr. Emery N. Castle
Henry Lorenzen
Genevieve Pisarksi Sage
William W. Wessinger



Western Natural Resources Law Clinic

Law Center, University of Oregon, Eugene, Oregon 97403, 503-686-3823

Michael D. Axline
John E. Bonine
Attorneys

October 17, 1989

Genevieve Sage
75 Wimer Street
Ashland, OR 97520

Dear Ms. Sage:

We represent Dr. Mary O'Brien and the Northwest Coalition for Alternatives to Pesticides.

For the past few weeks we have examined documents and talked to staff at the Department of Environmental Quality, regarding issuance of an NPDES water pollution permit for the proposed WTD pulp mill at Clatskanie. We have also reviewed Oregon and federal laws and regulations governing the water pollution permit program. We have concluded that the action you are being asked to take at your October 20 meeting of the Environmental Quality Commission would violate several provisions of the federal Clean Water Act and U.S. EPA regulations, provisions of the Oregon Clean Water Act and EQC regulations and other laws.

The action will also be bad public policy. We enclose a copy of our client's personal comments prepared for the October 20 meeting on those policy issues. The action will cause (1) harm to public health in Oregon and elsewhere in the nation by causing a number of cancer cases that can be calculated in advance; (2) harm to commercial, sport, and Indian treaty fishing through the addition of toxic substances into the product; (3) harm to newly imperiled Bald Eagles and great blue herons protected under the Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act.

As for legal deficiencies, federal and state laws simply do not permit the prospective violation of Oregon's water quality standard for dioxin on a river that DEQ documents have found to be already 700 percent in violation of the water quality standard down to the mouth at the Pacific Ocean. No new sources of any dioxin can be approved until at a minimum there exist binding and enforceable compliance schedules in Oregon and neighboring

jurisdictions to reduce by the needed 600 percent the dioxin pollution from the eight or more existing dioxin polluters currently contributing to the extraordinarily high violations of the standard. Furthermore, several other substantive and procedural laws and regulations will be broken if the Department proceeds to issue the permit.

The prospective violations are:

9. Approval of issuance of a permit would violate laws requiring that EQC and DEQ include effluent limitations that will ensure, at the time of permit issuance, the attainment and non-violation of the water quality standard.

10. Approval of issuance of the permit would violate EQC's and DEQ's duties to protect all beneficial uses on the Lower Columbia, including human health from fish consumption, the fishing industry, and sensitive wildlife including bald eagles and great blue herons.

11. Approval of the issuance of the permit would violate other laws, including the Endangered Species Act.

12. Approval of the issuance of the permit would violate the public notice and comment procedures of federal and state laws.

The last time that an Oregon state agency took significant action regarding dioxin exposure to Oregonians was in 1978, when the State Board of Forestry considered requests for Governor Bob Straub and a petition from citizen groups to require warning notices to residents before the use of the Agent Orange herbicide, (2,4,5-T) was sprayed on any lands in Oregon. The Board of Forestry at that time decided that the issue was too important to leave to the filtered summaries of a hearings officer and therefore decided to sit as a full Board to hear directly the public testimony of those concerned with the issue. We ask that the EQC accord the same degree of personal involvement in the issue of further permits for dioxin discharges into the precious waters or air of Oregon.

On behalf of our clients, we ask that you direct the staff of DEQ that before it may propose the issuance of the permit to WTD, any permit for expansion to any other pulp mill, or the renewal of any permit for any pulp mill on the Columbia River system it must (1) prepare reviewable calculations for the probable level of dioxin in the lower Columbia River just before it reaches the Clatskanie site and from that point downstream to


the mouth of the Columbia past Astoria (the ones that have been done and made available to us are so minimal as to be meaningless); (2) prepare specific and detailed calculations and scientific findings on the uptake from sediment by, and likely dioxin loadings in, fish, bald eagles, and great blue herons in the Columbia River; and (3) present binding legal documents showing enforceable compliance schedules for all other chlorine-bleaching pulp mills in the Columbia River system (in Oregon, Washington, Idaho, and B.C.) for which any future reduction in dioxin discharge is assumed, with calculations showing specific reductions in dioxin loading of the system as a result of such enforceable schedules but no reductions based on mere hopes.

We also request that because of the strong public importance of this issue the EQC provide a 60-day period for public comment by other federal and state agencies of these actual calculations and findings (we enclose letters you may not have seen showing the strong concerns of federal fish and wildlife agencies); and finally a public hearing or forum on dioxin attended by the members of the EQC and top staff of DEQ, not merely an appointed hearings officer, at which these calculations and findings and other science on dioxin and chlor-organics can be reviewed, along with information on alternative pulping processes. We urge that this include opportunity for qualified representatives of citizen groups and members of the EQC to direct questions during such hearing to the staff of DEQ regarding the basis of their calculations and specific findings.

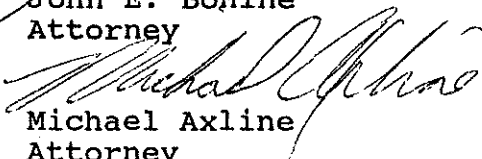
The clean-up of dioxin from our society and from Oregon in particular is too critical an issue to allow a major new chlorine-bleaching pulp mill to be built without advance assurance of the complete reliability of the scientific basis for findings.

Similarly, we are charged by our client with ensuring complete compliance with all applicable laws and regulations. Our analysis of the legal unacceptability of the course of action being proposed by DEQ at present is enclosed.

Sincerely,



John E. Bonine
Attorney



Michael Axline
Attorney

cc: Fred Hansen, DEQ

October 17, 1989
Page 4

Randall Baker
Monty Booth
Stephen Koteff
Chris Rose
Paulette Sanders
Liam Sherlock
 Legal Interns

EXHIBITS TO LEGAL ANALYSIS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
 ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
 1002 NE HOLLADAY STREET - ROOM 620
 PORTLAND, OREGON 97232
 503/230-5400

JUL 27 1989

F/NWR5

RECEIVED

JUL 28 1989

DEPT. OF COMMERCE

Mr. Jerry E. Turnbaugh
 Department of Environmental Quality
 Water Quality Division
 811 S. W. 6th Avenue
 Portland, Oregon 97204

RE: NPDES Wastewater Discharge Permit
 File Number: 104265 (Port Westward Pulp Co.)

Dear Mr. Turnbaugh:

The National Marine Fisheries Service (NMFS) has completed its review of the subject proposed permit and Evaluation Report. The permit would allow the discharge of wastewater from the operation of a proposed bleached-kraft pulp mill into the lower Columbia River near Clatskanie, Oregon. Our comments and recommendations are based on the NMFS's responsibility for the protection and enhancement of marine, estuarine, and anadromous fishery resources and their supporting habitats.

Studies by our Northwest Fisheries Center indicate that, of the 250 to 350 million salmon and steelhead smolts migrating out of the Columbia Basin each year, up to 30 million migrate through the nearshore areas in the vicinity of the proposed mill. Investigations on coho salmon smolts in the Chehalis River indicate that survival of these fish is less than 50 percent of a neighboring river, the Humptulips River. The Chehalis River receives effluent from two pulp mills near its mouth. The Humptulips River does not. Contaminants that could be produced by the proposed mill would pose a significant threat to the important commercial and recreational fishing resource of the Columbia River.

The Evaluation Report fails to address the cumulative impacts that this pulp mill could have on the fishery resources of the Columbia River. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels that represent significant threats to human health, the environment, and fish-eating wildlife. Effluent receiving waters associated with other bleached-kraft pulp mills on the Columbia River have been included on the U.S. Environmental Protection Agency's (EPA) 304(1) "short" lists that identify water bodies in violation of water quality standards due to toxicants. Although



the proposed mill will supposedly discharge a smaller amount of toxicants compared to other mills on the Columbia River, its effluent will only exacerbate an already recognized problem.

The Evaluation Report fails to adequately address the issue of the best available technology for this industry. Although the proposed mill is incorporating methodology that is designed to reduce toxicants in its effluent compared to existing mills, the Report states that a similar mill does not exist in Oregon, and, therefore, the predicted level of toxicants produced cannot be reliably verified. The Report does not describe and compare other pulping processes and wastewater treatment systems that could reduce toxic effluents. The Report simply indicates that the proposed mill should produce less toxicants than those that are presently operating.

Some important water quality parameters for the proposed mill are not well addressed. Bleached-kraft pulp mills are known to be a significant source of chlorine based compounds such as 2,3,7,8-TCDD ("dioxin") and a close relative 2,3,7,8-TCDF ("di-benzo furans"). Both dioxin and di-benzo furans are exceedingly stable, readily incorporate into aquatic ecosystems, are very persistent, and readily bioaccumulate. Laboratory studies have demonstrated that dioxin in minute quantities can result in acute and delayed mortality in fish. Dioxin has been linked to teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. The proposed permit properly limits dioxin to none detectable. However, it does not address the many and various chlorophenolic precursors from the chlorine dioxide bleaching stage. Chlorophenolic contaminants from pulp mills are highly toxic to aquatic life and are highly resistant to further chemical degradation. The chlorophenolics are also difficult to burn completely, and under combustion conditions they can form dioxins and other hazardous products.

The proposed permit does not adequately monitor chlorophenolics. As described in the permit, chlorophenolics would be lumped under the category of "adsorbable" organic halides. This category is too nonspecific to properly document the occurrence and regulate the release of chlorophenolics in the effluent. Methodology specific for chlorophenolics must be employed. We recommend that methods developed by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) be employed (Technical Bulletin No. 498, July 1986: methods CP-85.01 and CP-86.01). NCASI has a West Coast Regional Center in Corvallis, Oregon and is represented by Mr. Lawrence LaFleur, (503)-752-8801, who can provide copies of the NCASI procedures. Methods CP 86.01 covers 27 chlorophenolics, which are listed in Section 1.0 (copy enclosed). Schedules A and B of the proposed permit should be revised to reflect chlorophenolics monitoring. Because of the uncertainty of the results of the new methodology being employed at the proposed mill, studies of effluent effects

in the mixing zone and at the mixing zone boundary should be performed. A modeling study to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms should be performed using worst case conditions. River flow conditions that should be modeled should include the combination of spring tides, low river flow, and flood tide.

Until our concerns are fully addressed, we recommend that this permit be withheld. If you have any questions about our comments, please contact Edmond Murrell of my staff at (503) 230-5433.

Sincerely,



Einar Wold
Division Chief

Enclosure

cc: Oregon Dept. of Fish and Wildlife
Fish and Wildlife Service, ES, PFO
Oregon Division of State Lands ✓
Environmental Protection Agency, Portland



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Portland Field Office

727 NE 24th Avenue

Portland, OR 97232

Jul 12 10 52 AM '89

July 10, 1989

Jerry E. Turnbaugh
Department of Environmental Quality
Water Quality Division
811 S.W. 8th Avenue
Portland, Oregon 97204

RE: Port Westward Pulp Co.
NPDES Wastewater Discharge Permit

Dear Mr. Turnbaugh:

The U.S. Fish and Wildlife Service (Service) has reviewed the Public Notice for Port Westward Pulp Co., which proposes to build a bleached-kraft market-pulp mill on the Columbia River near Clatskanie, Oregon. The company has applied for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit. If issued, the permit would allow discharge of wastewater from the operation of the pulp mill to the Columbia River.

We are concerned about the potential water quality degradation associated with this project and feel the subject permit has not adequately addressed this issue. The toxic substances of greatest concern are the chlorine based compounds such as dioxins (particularly 2,3,7,8-TCDD) and di-benzo furans. Bleached-kraft pulp mills are a known significant source of dioxins. 2,3,7,8-TCDD is exceedingly stable, readily incorporated into aquatic and terrestrial ecosystems, extraordinarily persistent, virtually impossible to destroy, and readily bioaccumulates in biological systems. Laboratory studies with birds, mammals, and aquatic organisms have demonstrated that exposure to 2,3,7,8-TCDD can result in acute and delayed mortality as well as carcinogenic, teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels which represent significant threats to human health, the environment, and fish-eating wildlife. The potential for biomagnification of organochlorine compounds is high. Thus, organisms at the upper end of a food chain, such as bald eagles, great blue herons, or salmon may accumulate concentrations of chlorinated dioxins that are hazardous to their reproductive capabilities and survival.

Several bleached-kraft pulp mills are in operation on the Columbia River. The receiving waters associated with these mills have been included on the U.S. Environmental Protection Agency's (EPA) 304(l) "short" lists identifying water bodies that are in violation of water quality standards due to toxicants. The addition of another mill adding organochlorine compounds to the Columbia River will only intensify the problem. Although the Port Westward Mill should discharge lower levels of dioxins, the DEQ should consider the long term consequences of additional discharges of chlorinated dioxins to the river.

Before the permit is considered for issuance the permittee should complete studies of the mixing zone and the mixing zone boundary, including dye studies and a modeling effort to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms. The detection level of 2,3,7,8-TCDD in effluent is 10 ppq, whereas the EPA's water quality criteria for dioxin is well below the detection level at 0.013 ppq. Thus, discharged effluent must have a 769-fold dilution to meet EPA's water quality criterion. Without mixing zone evaluations, this dilution factor is unknown. In addition, acute and chronic bioassays of the mixing zone and mixing zone boundary should be conducted. No sublethal effects on growth, reproduction, or survival of aquatic organisms should occur at the mixing zone boundary.

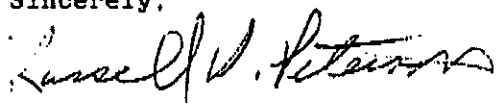
Because there are no bleached-kraft mills on the Columbia River that use the same technologies as that of the proposed Port Westward mill, the amount of dioxin actually discharged is unknown. The permit limits discharge of dioxin to below the level of analytical detectability (10 ppq). However, without evaluations of the effluent produced and discharged, a reduction of effluent toxicity can not be assured. We understand that the DEQ is already allowing for a provision to reopen the permit for modifications of the dioxin effluent limitations if the applicable dioxin regulations or regulatory policies change. We recommend that the DEQ consider limiting the permit to a discharge of no dioxins since the regulatory policies could potentially be reduced to production and discharge of zero dioxins.

The EPA's interim strategy and stated long-term goal for controlling dioxin discharges is to reduce and hopefully eliminate the production of dioxins, not just dioxin discharges to surface waters. Thus, it is appropriate for the DEQ to consider requirements that all new pulp mills use technology that produces and discharges no dioxins. It is our understanding that this technology is available and is being used in some mills operating in Sweden. If not yet available, then we recommend the DEQ question the suitability of adding another pulp mill's effluent to the Columbia River.

The Service requests that the DEQ not issue the NPDES permit until additional information is provided. Because of the magnitude of the proposed project, the likely degradation of water quality in the Columbia River...

potential for significant impacts we also recommend that the DEQ give serious consideration to the long range and cumulative impacts of this project.

Sincerely,



Russell D. Peterson
Field Supervisor

CS2:lg

- cc:
- EPA
- NMFS
- ODFW
- DSL
- WDE
- WDF
- WDG
- COE

2 E.P.A. Studies Confirm Threat to Fish of Dioxin From Paper Plants

Toxicity is found to far surpass levels set as hazardous.

TWO Federal studies have confirmed fears that many paper mills are discharging dioxin into rivers and that the toxic chemical is accumulating in fish downstream.

One of the studies by the Environmental Protection Agency found that fish downstream from 21 of the 81 mills that were examined contained levels of dioxin far exceeding those that Federal authorities have designated as hazardous, scientists said.

A second E.P.A. study found that the amount of dioxin in waste water at 59 of 74 mills examined, although minute, was far above the E.P.A. standard for clean water, officials said.

Dioxin, an unwanted byproduct produced when mills bleach paper pulp with chlorine, is a highly toxic substance that has been found to cause cancer in laboratory rats and has been linked to the skin disorder chloracne and immune system problems in humans. Scientists disagree about how much dioxin humans can absorb before their risk of cancer rises.

Earlier Studies Confirmed

Still, the new evidence has prompted the E.P.A. to pressure some mills to submit plans for ridding their waste water of the chemical by 1992, officials said. Dioxin appears to be a problem chiefly at "bleach kraft" mills, which use chlorine to make white paper products. In all, 104 of the country's 600 paper mills use chlorine.

E.P.A. officials said the studies prove conclusively what a less-comprehensive study of five paper mills in 1986 and a nationwide study of dioxin pollution in 1983 strongly suggested: that bleach kraft mills have been contaminating streams with dioxin for years.

"We are seeing higher levels of dioxin in effluent and sludge from the mills than we expected," said Jenny Helms, an E.P.A. environmental engineer.

Carol Raulston, vice president of the American Paper Institute, a trade group, said the industry was committed to reducing the dioxin produced by the mills. But she said many mill operators doubt the technology exists to meet Federal standards.

Seven Times Dangerous Level

The fish study is part of a larger E.P.A. study to be published next fall that will assess the accumulation of 65 pollutants in animals. Researchers found fish downstream of some mills with up to seven times the level of dioxin the Food and Drug Adminis-

tration has determined is dangerous for humans to eat regularly, 25 parts per trillion, said Stephen Kroner, chief of the exposure assessment section of E.P.A.

The highest level of contamination was 180 parts per trillion, found in creek chubsucker fish near the Weyerhaeuser Company plant in Plymouth, N.C. Carp caught near the International Paper Company mill in Bastrap, La., had the next-highest concentration, nearly 150 parts per trillion.

The study of mill waste water stemmed from an agreement last year between the American Paper Institute and the E.P.A. to survey the waste of all bleach kraft mills, Ms. Helms said.

So far, 74 of the 104 mills have been tested and all but 15 were found to be discharging water that, once it was diluted in a stream or river, would still contain a level of dioxin above the E.P.A.'s safety threshold of 0.000013 parts dioxin per trillion parts water, Ms. Helms said.

Mills Pressured to Reduce Chlorine

The highest level was found at the International Paper mill in Georgetown, S.C., whose waste water at the end of an outfall pipe measured 0.64

'The paper mills are all under the gun. They know there is a lot of public interest.'

parts of dioxin per trillion. The median for the mills where the dioxin was measurable was 0.024 parts per trillion.

The E.P.A. is putting new requirements into its pollution permits to pressure mills to reduce the use of chlorine, officials said. The regional office in Boston last week became the first to require in pollution permits that four mills in Maine and New Hampshire switch to other methods of bleaching pulp by 1992, Gary Hudburgh, an E.P.A. attorney, said.

Other regional offices and state agencies plan to follow suit. California, for instance, plans to alter the permit for the Simpson Paper Company in Anderson, Calif., and the E.P.A. in Philadelphia has rejected a proposed permit for the Westvaco Corporation mill in Covington, Va., because it did not address dioxin pollution.

"The paper mills are all under the gun," said James Gallup of the E.P.A. water permit division. "They know there is a lot of public interest in this."

Dioxin refers not to one chemical but to a whole family of 75 substances

sharing a three-ring structure — two benzene rings connected by a ring of oxygen atoms. What distinguishes one dioxin from another is the number of chlorine atoms attached to the outside edges.

The chemical commonly referred to as dioxin is 2,3,7,8, tetrachlorodibenzo-p-dioxin, or TCDD, which has four chlorine atoms and is one of the most toxic chemicals ever synthesized. Chemists theorize that dioxin is formed when chlorine reacts with organic "unchlorinated" dioxins in wood fibers.

How much dioxin exposure repre-

sents a health hazard has been a matter of dispute in recent years. Recently, the E.P.A. has sought to play down the danger of exposure and is considering a proposal to raise acceptable contamination levels 16-fold.

'Nobody Knows the Risk'

Dr. Robert Sheuplein, chief toxicologist at the F.D.A., said species respond to dioxin differently and the Government guidelines are based on a decade-old study of dioxin-induced cancer in rats, which many scientists now believe are more sensitive to the substance than humans are.

"Nobody knows the risk, so the consumers and the environmentalists can make a day of it and the toxicologists can't say they're wrong," Dr. Sheuplein said. "But none of us believe it."

But Barry Commoner, director of the Center for Biology of Natural Systems at Queens College, says two recent studies of cancer among Air Force personnel exposed to Agent Orange, which contains dioxin, indicate the E.P.A.'s standards actually underestimate how lethal dioxin is.

Mindful of the public perception that dioxin, even in minuscule quanti-

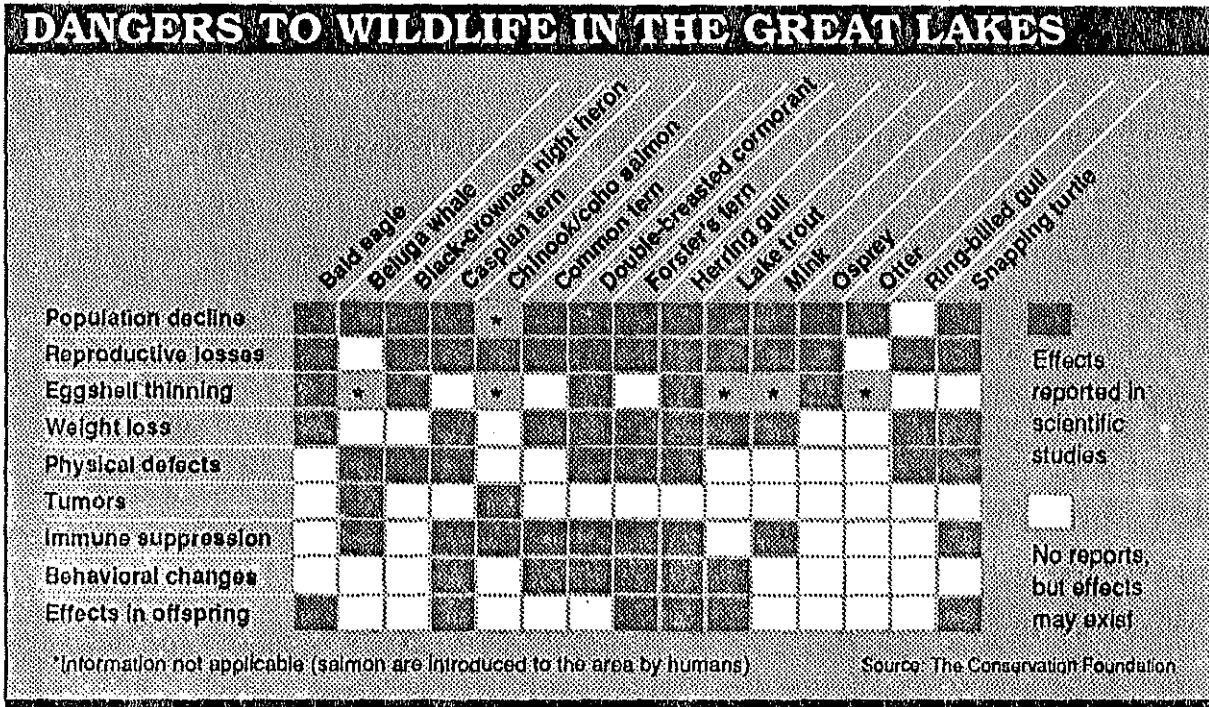
ties, is deadly, the paper industry has favored making changes to reduce the use of chlorine rather than quibbling about how much dioxin is too much, Ms. Raulston, the industry spokesman, said.

She said mill operators were considering several methods to reduce the dioxin, including washing the pulp for a longer time before bleaching it or substituting oxygen, chlorine dioxide or peroxide for chlorine.

"We're committed to getting our numbers down," she said. "We don't know if we can get them down to that level."

FIG. 7

October 12, 1989



N.Y. Times News Service

Fears voiced for Great Lakes

By **WILLIAM E. SCHMIDT**
New York Times News Service

CHICAGO — William K. Reilly, the administrator of the Environmental Protection Agency, and Canadian health officials said Wednesday that the Great Lakes were facing "a critical situation" as a result of toxic contamination and the destruction of wildlife habitat.

They called for an expanded commitment by the two nations to clean up the lakes, the world's largest surface source of fresh water, saying that gains in controlling pollution over the last two decades had been endangered.

Speaking at simultaneous news conferences here and in Toronto, officials of the two governments announced a study concluding that urgent action is needed by federal, state, provincial and local governments to reverse what it calls the widespread, long-term environmental degradation of the Lakes.

"The Great Lakes environment is sick, and is no longer getting better," said David Runnalls, a researcher with the Institute for

Research on Public Policy, an independent research group based in Toronto.

The institute compiled the report, "Great Lakes: Great Legacy?" along with The Conservation Foundation, a Washington-based, non-profit environmental group once headed by Reilly.

Although most of its findings have been published previously by other groups and government agencies, the report suggests, among other things, that state and provincial health departments in the region should re-examine and strengthen advisories warning residents to limit their consumption of sports fish contaminated by trace levels of polychlorinated biphenyls, pesticides and other toxic compounds.

Theo Colburn, a scientist with a doctorate in zoology, who was an author of the report, said, "Research suggests that female human beings should not eat contaminated Great Lakes fish until they pass child-bearing age."

Current health advisories issued by states in the Great Lakes basin generally recommend that women

who are pregnant, nursing or intend to have children limit their consumption of some fish species, such as lake trout and coho salmon, to one meal a month.

While Colburn said little is known about the direct health effects that these contaminants have on humans, scores of scientific studies have documented severe reproductive problems, tumors, extreme weight loss and other abnormalities in both fish and the predators, like terns, gulls and otters, that consume tainted fish.

She said research has demonstrated a longterm decline in population of bald eagles that nest in the Great Lakes watershed, as well as other effects, like the thinning of eggshells and suppressed immune systems that she says are related to "bio-accumulation" of toxic substances in predators that consume tainted fish.

This summer, the National Wildlife Federation, the nation's largest conservation organization, said women considering having children should not eat some contaminated species of Great Lakes sports fish because of an increased risk of cancer.

Bald eagle reproduction down

By The Associated Press

LONGVIEW, Wash. — The already poor reproductive rate of bald eagles along the lower Columbia River took a turn for the worse this year.

Biologists say that so few were born, the population won't sustain itself over the long term without outside birds.

Only seven of the estimated 25 occupied bald eagle nests from Portland to the mouth of the river produced young this spring. That's half the 10-year average.

"That is extremely poor," said Bob Anthony, a wildlife biologist for the Or-

Chemicals cited as possible cause

regon Cooperative Wildlife Research Unit at Oregon State University.

In healthy eagle populations, he said, eagles produce an average of one young per occupied nest. Along the lower Columbia, about half of the occupied eagle nests typically produce young. This year, slightly more than one-quarter produced young.

Anthony said he can't explain this year's poor birth rate. It might be a mere "random fluctuation of a population that reproduces very poorly," he said.

Statewide, however, numbers of the federally protected species have been increasing.

In the past several years, scientists have discovered that the banned herbicide DDT and the coolant PCB are causing the reproductive problems in the species, deforming eagle embryos and creating eggshells that are too thin.

DDT, the once widely used farm chemical, is suspected to have accumulated in river sediments. The chemical PCB has been widely used in elec-

trical transformers. When eagles eat fish that have been contaminated, the chemicals are released into their bodies.

Unpublished studies also have linked low reproduction of cormorants and herring gulls in the Great Lakes region to dioxin contamination, said Donald White of the Fish and Wildlife Service's Patuxent Research Center in Athens, Ga. Dioxin has become an issue along the lower Columbia because bleach kraft pulp mills discharge minute amounts. Tests have found fish in the river to be contaminated with the chemical. So far, no study has attempted to find dioxin in eagles.

FRIDAY

Wipe-out of heron eggs linked to dioxin

By Nancy Brown
Times-Colonist staff

High levels of dioxin from the Crofton pulp mill are suspected of wiping out all 200 eggs in a nearby great blue heron colony this year.

"The herons went in to nest, they laid eggs, not one was successful in raising young," Canadian Wildlife Service biologist Phil Whitehead said Thursday.

"Every one of the eggs was destroyed."

He said the eggshells were found in fragments beneath the nests, and there were no signs of contents.

"Whatever destroyed those eggs liked the taste of the contents as well," he said.

This could mean that every egg was taken by predators such as crows.

"It's a possibility, but it would be highly unusual for every egg to be taken," he said. "But it also happens that the highest levels of dioxin found in blue heron eggs in 1985 came from that colony near the Crofton mill."

"Apparently dioxins... affect the development of the embryo or kill it, or they can affect the behavior of the adults so they don't care for or incubate the eggs properly."

The mystery of what happened to the embryos may be solved next year when the Wildlife Service will have results of this year's analysis of eggs taken before the rest were destroyed.

"You can be sure we will be monitoring this colony closely once nesting

starts in the spring," said Whitehead.

The Crofton colony was one of four colonies monitored in a pollution testing program begun in 1977, to be carried out at five year intervals in B.C.

Three of four colonies in the program are near industrial sites, while the control colony is at Crescent Beach south of Vancouver.

Great blue herons were selected as subjects because they are at the top of the food chain and pollutants would be

concentrated in their systems. In addition, the colonies which nest 20 metres or more off the ground are easily located and heron families tend to remain in the same location throughout their lives.

To begin, eggs were collected and tested for DDT content, but in 1983 Canadian Wildlife Service scientist Ross Norstrom and the national wildlife research laboratory in Ottawa

HERONS A2

HERONS Continued from A1

developed a method of detecting dioxin levels in the eggs.

Those methods were applied to the 1982 egg collection and on the basis of the results another study was done the following year.

In addition to the control colony, biologists are looking at the Crofton colony; one on Gabriola Island offshore from the Harmac mill near Nanaimo; and a University of B.C. colony which feeds in the tidal flats of the Fraser River estuary.

"In 1983 we collected eggs from all four sites, analysed them for dioxin and found elevated levels in all samples except the ones from the control colony at Crescent Beach," said Whitehead. "In 1986 we sampled again, but this time we weren't able to look at Gabriola Island eggs because that colony had disappeared."

"We found high levels of dioxin again, and the highest levels were in the eggs from the Crofton colony."

He said results of 1987 samples are not yet available.

Whitehead said the disappearance of the Gabriola colony was not unusual.

"Quite often a colony will simply pack up and leave for another location," he said.

"When we search we'll probably find it in another location."

The UBC colony which had existed in the same location for many years suddenly moved about seven kilometres.

There are 75 forms of dioxin and

Norstrom said three toxic forms, including the most deadly, were present in the 1986 egg samples.

In the Crofton sample the heron eggs were found to contain up to 40 times the level of dioxin found in heron eggs in Quebec.

Norstrom said no one knows the exact effect the high dioxin levels will have on the heron, but the most likely effect would be to keep the embryos from growing inside the eggs.

This year's failure of the Crofton colony to reproduce is the first failure in the 10 years Environment Canada scientists have been studying B.C.'s heron population.

Norstrom said the presence of dioxins may be due to the trace elements of the chemicals found in man-made chlorophenols, a commonly used wood preservative.

Whitehead said the service has no evidence of a direct link between the presence of dioxins and pulp mills, but Environment Canada is in the process of expanding tests for dioxins in the environment.

FOR THE RECORD

In an editorial Sept. 9, it was incorrectly stated that the Public Sector Purchasing Policy office of the B.C. Purchasing Commission is in Vancouver. The PSPP is at 1000 Seymour Pl., Victoria.

September 11, 1987
Victoria, B.C.

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WEATHER

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Details/A2

INTERNATIONAL

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

DRAFT OF PUBLIC HEARING NOTICE

Hearing Date: 7/6/89
Comments Due: 7/10/89

WHO ARE THE APPLICANTS:

Port Westward Pulp Co.
P.O. Box 5805
Portland, OR 97228

WHAT IS PROPOSED:

Port Westward Pulp Co., P.O. Box 5805, Portland, OR, 97228, proposes to build a bleached-kraft market-pulp mill on the Columbia River near Clatskanie, Oregon. The company has applied for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit and the Department has drafted a proposed permit.

WHAT ARE THE HIGHLIGHTS:

The mill will discharge wastewater to the Columbia River. The permit limits discharge of the following conventional pollutants:

- Biochemical oxygen demand (BOD₅)
- Total suspended solids (TSS)
- Fecal coliform
- pH
- Temperature

The permit also limits discharge of dioxin (2,3,7,8-TCDD) to below the level of analytical detectability (approximately 10 parts per quadrillion). Because the mill bleaching process is different from other Oregon bleached-kraft mills, it is not known to what extent dioxin will be produced.

The permittee is required to monitor discharge of the following wastewater characteristics and report the results to the DEQ to ensure compliance with the permit:

- Biochemical oxygen demand (BOD₅)
- Total suspended solids (TSS)
- Fecal coliform
- pH
- Temperature
- Color



811 S.W. 6th Avenue
Portland, OR 97204

11/1/86

FOR FURTHER INFORMATION:

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.

OVER

Exhibit G

- Acute and chronic toxicity
- Adsorbable and extractable organic halides (dioxin indicators)
- Dioxin

Two outfall mixing zones centered on the point of wastewater discharge are allowed: one at 1000-feet for color, and one at 400-feet for the other pollutants. Oregon has no water-quality standard for color, but this permit limits the visual impact of color to the first 1000-feet of the river.

**HOW IS THE
PUBLIC AFFECTED:**

The mill effluent will be diluted in the allowed mixing zone and will be carried away by the much larger flow of the Columbia River. Effluent color should not be visible beyond the 1000-foot mixing zone radius.

The effluent is not expected to have an adverse impact on the river or any beneficial uses.

HOW TO COMMENT:

Copies of the proposed permit and evaluation report can be obtained from: The Department of Environmental Quality, Water Quality Division, 811 S.W. Sixth Avenue, Portland, Oregon, 97204.

Written comments can be submitted to the same office. For further information, contact Jerry Turnbaugh at (503) 229-5374.

A public hearing will be held as follows:

WHERE: Clatskanie American Legion Hall (east of Clatskanie on Swedetown Road, 1 block north of Highway 30)

DATE: Thursday, July 6, 1989

TIME: 7:00 p.m.

Information on the mill will be provided at the hearing. The public will have an opportunity to ask questions as well as present formal testimony.

Oral and written comments will be accepted at the hearing. Additional written comments will be accepted until 5:00 p.m., Monday, July 10 at the offices of the DEQ.

**WHAT IS THE
NEXT STEP:**

Testimony received will be evaluated and the permit modified, if necessary. Because the mill is a significant new wastewater discharge source, the permit must be approved by the Environmental Quality Commission at its meeting on July 21, 1989.

rec'd from DEQ
10/9/89

**Oregon Department of Environmental Quality
A CHANCE TO COMMENT ON...**

PORT WESTWARD PULP CO. has applied for a permit to discharge treated wastewater to the Columbia River.

DEQ is extending the period for the public to send written comments on water quality issues to August 1, 1989. DEQ held a public hearing on July 6 in Clatskanie with the original deadline for comments as July 10.

Comments should be mailed to:

Jerry Turnbaugh
DEQ
Water Quality Division
811 SW Sixth Avenue
Portland, OR 97204

For further information, contact Jerry Turnbaugh at (503) 229-5374.

*date issued - July 10, 1989 - everyone received
date.*

DEPT. OF ENVIRONMENTAL QUALITY
PUBLIC HEARING

Rec'd from DEQ

10-9-89

The public is invited to comment on water quality issues of a proposed pulp mill to be built six miles north of Clatskanie. Port Westward Pulp Company has requested a permit to discharge treated industrial wastewater to the Columbia River. The permit would set limits on pollutants, including dioxin. It would also require that the treated wastewater be visible only within 1000 feet from the point of discharge.

*Thursday, July 6, 7 p.m.
Clatskanie American Legion Hall
E of Clatskanie on Swedetown Road,
1 block N of Highway 30*

A public hearing on air quality issues will be held at the same location on Tuesday, July 25 at 7 p.m.

For copies of Oregon DEQ's draft permits for air and water, call 1-800-452-4011.

*appeared in the Clatskanie
Chief on Thursday, July 6, 1989
as a paid advertisement (not
the classified public notice
section).*

Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204

Contact: Shirley Kengla, 229-5766
or toll-free 1-800-452-4011

FOR IMMEDIATE RELEASE: June 26, 1989

HEARING SCHEDULED ON NEW PULP MILL

The Department of Environmental Quality (DEQ) is holding a public hearing on a proposed permit for pulp mill wastewater discharges to the Columbia River on July 6 in Clatskanie.

Port Westward Pulp Company has proposed to build a bleached-kraft pulp mill six miles north of Clatskanie. DEQ has reviewed the company's application for a National Pollutant Discharge Elimination System permit and is asking for public comments on the proposed permit. The hearing is scheduled for Thursday, July 6, at 7 p.m. in the Clatskanie American Legion Hall (east of Clatskanie on Swedetown Road, 1 block north of Highway 30).

The permit proposes limits on pollutants that would be discharged into the Columbia River. The mill's organic waste would be limited to levels that would not affect Oregon's water quality standards for dissolved oxygen levels, temperature, bacteria, pH and suspended solids. The permit addresses two other concerns, dioxin and color.

Dioxin, a byproduct of the bleached-kraft pulp mills, may not be discharged by the pulp mill at detectable levels. Current technology will detect dioxin in the range of 10 parts per quadrillion (comparable to 10 drops in 500 million barrels of water). Dioxin, a suspected carcinogen, has been found to build up in livers of fish exposed to it. Port Westward Pulp Company will be using state-of-the-art pulping processes which will minimize the production of dioxin.

The color removed from the wood pulp during the bleaching process will be visible when discharged into the river. DEQ is proposing a boundary for color, which may only be visible within 1000 feet from the point of discharge. Because studies have not demonstrated any adverse effects of color on aquatic life and options for removing color present other environmental concerns, DEQ is proposing no other limit on color.

An Air Contaminant Discharge Permit from DEQ will also be required for Port Westward Pulp Company.

#####

This news release was sent to Portland area media & all media in Columbia & Clatsop County. We also sent it to the Longview Daily News & radio stations on the Washington side,

Department of Environmental Quality
Water Quality Division
811 S.W. Sixth Avenue
Portland, Oregon 97204

July 6, 1989

FACT SHEET
Port Westward Pulp Company
Proposed Wastewater Discharge Permit

This fact sheet summarizes the water-quality environmental issues of the proposed Port Westward Pulp Mill.

Mill Description

The proposed pulp mill would occupy approximately 250 acres on property leased from the Portland General Electric Company at the Beaver Terminal near Clatskanie, Oregon.

The mill would produce some 1200-1300 air-dried tons of bleached kraft market pulp per day at full capacity using softwood chips from Northwest sawmills. Chips would be delivered by barge, rail and truck and finished baled pulp would be shipped out by ocean-going ship, barge, rail and truck.

In-plant production processes, such as extended cooking, oxygen delignification and chlorine dioxide substitution in the bleaching process would be provided to reduce waste discharge.

Wastewater would be treated in an aerated stabilization basin to reduce biochemical oxygen demand before being discharged to the Columbia River.

The Permit Process

Port Westward must receive a National Pollutant Discharge Elimination System (NPDES) permit to discharge waste water to the Columbia River. In processing the application, Department staff evaluated the application and wrote a draft permit. The draft permit is then distributed to the public for review and comment. The public can submit written comments or may give oral testimony at the July 6, 1989 hearing. Before a permit is issued, the EQC must make findings that an increased discharge to the Columbia River will not violate water quality standards, that beneficial uses are protected, and land use requirements have been satisfied. The EQC is scheduled to discuss the increased discharge request at its July 21, 1989 meeting. If the Commission finds that the discharge from the new mill should be allowed, the DEQ Director may issue an NPDES permit.

Exhibit K

The Department must evaluate the discharge request against the following criteria:

- o that water-quality standards established in rule both in numerical and narrative terms are not violated and that recognized beneficial uses of the river are not impaired,
- o that highest and best practicable treatment will be used to minimize degradation of water quality, and
- o that US Environmental Protection Agency technology-based effluent guidelines are met.

Water Quality Standards, Beneficial Uses

Based on its review of information submitted by Port Westward, the Department believes that water quality standards (with the possible exception of dioxin) would be met and beneficial uses of the Columbia River would be protected by in-plant processes that reduce creation of wastewater, by treatment to reduce wastes and by wastewater dilution provided by the river.

Color

The proposed mill effluent would be brown in color and, under some conditions, may be visible in the river. The Department proposes to require that Port Westward limit the visible color plume to a mixing zone radius of 1000 feet from the mill outfall diffuser. Other Oregon mills on the Columbia River do not have a similar color limitation.

Dioxin

Dioxin (2,3,7,8-tetrachloro-dibenzo-p-dioxin) has been found in the effluent from bleached kraft pulp mills throughout the nation, including the two Oregon bleached kraft mills on the Columbia River.

Dioxin is the common name of a family of chlorinated compounds. Nobody produces dioxins on purpose. It is an unwanted and often unavoidable by-product that comes from some manufacturing operations and certain types of combustion processes.

Oregon has established a water quality standard of 0.013 parts per quadrillion for dioxin. The water quality standard is based upon criteria developed and recommended by the US Environmental Protection Agency (EPA). Current technology can only detect dioxin at 10 parts per quadrillion; consequently, the water quality standard is substantially below the level of detection.

Based upon dilution calculations, the Department has determined that the concentration of 2,3,7,8 dioxin may be above the standard outside the allowable mixing zones for the two Oregon mills. Because the levels are below the detection level for dioxin, the dioxin concentrations cannot be verified from samples taken in the river. Dioxin has also been found in fish tissue taken from the river.

Based upon the dilution calculations, the Department has listed portions of the Columbia River as violating water quality standards due to dioxin.

The Department has no information about dioxin levels in the Columbia River adjacent to the proposed pulp mill site. The applicant has proposed to provide production facilities, substantially different from conventional bleached kraft mills, that would significantly reduce dioxin concentrations in the effluent. In reviewing final plans for the facility, the Department will require that all practicable means for reducing the discharge of dioxin be provided. The Department has also calculated the necessary effluent dioxin concentrations to meet water quality standards at the edge of the mixing zone. The levels in the effluent would have to be less than detectability. Permit limits for dioxin have been proposed in the draft permit at less than the level of detectability. If, in the future, capabilities for measuring dioxin are improved such that further reductions in dioxin levels are found necessary, additional requirements would be imposed upon the mill.

Wetlands Issues

Issues concerning the dredging and filling of existing wetlands for the proposed mill are not a part of the wastewater permit application being considered at this hearing. The Department, however, has proposed a condition in the permit to prohibit construction until a Section 404 (of the federal Clean Water Act) permit has been issued by the US Army Corps of Engineers. Before a Section 404 permit can be issued, the DEQ must certify, pursuant to Section 401 of the Clean Water Act, that the dredging and filling of the wetlands will not violate water quality standards. The DEQ is currently reviewing the Section 401 application and has requested further information upon which to evaluate the proposal.

The Corps of Engineers received a Section 404 permit application from Port Westward Pulp Co. and solicited public comment from May 24, 1989 to June 23, 1989.

Construction of the mill would result in the loss of 38 acres of existing wetlands. Port Westward proposes to mitigate the loss of these wetlands by creating 38-acres of wetlands, 5.6 acres of buffer around the created wetlands and 6.4 acres of spoil mounds from a 50 acre parcel of land.

Remaining existing wetlands would be protected by the wastewater discharge permit from any adverse effect of the mill, including stormwater runoff from chip and hog fuel storage piles.

Air-Quality Issues

Port Westward has also applied to the Department for an air-contaminant discharge permit. The air permit does not require approval by the EQC. Air-quality issues will be addressed in a separate hearing for that permit. The hearing will be held July 25, 1989, at 7 P.M. in the Clatskanie American Legion Hall.

*HL - my rough
ideas
MBX*

Proposed amendment to Port Westward Pulp Company
permit condition, schedule C 4.

(revised present condition as follows)

"The applicant shall install such further
equipment or make such further modifications as
may be necessary to meet its wasteload
allocation by the following dates:

(1) for any preliminary wasteload
allocation adopted by EPA or DEQ, by June 1,
1982, or if the preliminary wasteload allocation
is adopted after that date, upon adoption; and

(2) for any final wasteload allocation
adopted by EPA or DEQ, by June 1, 1983, or if
the final wasteload allocation is adopted after
that date, upon adoption."

Proposed amendment to Port Westward Pulp Company
permit condition, schedule C 4.

(delete present condition and insert the following:

"The applicant shall be responsible for immediate compliance with any preliminary or final wasteload allocation adopted by EPA or DEQ. DEQ may take any action necessary to enforce compliance with this requirement, including ordering cessation of all discharges from the plant."

Possible temporary rule amendment of OAR 340-41-026(a)(C)

(C)(1) Except as provided in subsection (2) of this section, the new or increased discharged load shall not be granted if the receiving stream is classified as being water quality limited unless the pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to be water quality limited;

(2) Subsection (1) of this section shall not apply if the Commission or Department determines

(i) that the new or increased discharged load will not exceed its anticipated wasteload allocation; and

(ii) that the source of the new or increased discharged load is generally equal to or better than existing sources with respect to controlling pollution.

October 20, 1989

To: OREGON ENVIRONMENTAL QUALITY COMMISSION

From: Chris Soter

Subjects: OMISSION OF PERTINENT INFORMATION
FINDINGS REQUIRED BY (B) AND (C)
TAMPERING WITH EXISTING RULES

The DEQ has in its files information that MUST be considered by the Commission in its deliberations regarding a new wastewater discharge into the Columbia River. This information is not included in the Agenda Item E, Addendum no. 2 to July 21, 1989, EQC Staff Report.

The DEQ has ignored the comments of not only knowledgable environmental groups but also those of state and federal government agencies that have expressed serious concerns over the major impacts the WTD project would create (See attachments).

Under "FINDINGS REQUIRED BY OREGON RULES FOR APPROVING A NEW DISCHARGE", FINDING (B) states...

The new or increased discharged load would not threaten or impair any recognized beneficial uses.

The U.S. Department of the Interior's Fish and Wildlife Service, Washington's Department of Wildlife, U.S. Department of Commerce's National Oceanic & Atmospheric Administration, the EPA and The Oregon Salmon Commission have all submitted letters (see attachments) to the DEQ addressing the threats to "recognized beneficial uses." These letters are on file at DEQ Headquarters.

Yet the DEQ chooses to ignore this input and declares that.. "The Department feels that there is no evidence that wildlife would be significantly threatened or impaired by WTD's new discharge and feels that the findings required by (B) are met."

After reading the comments in the attached letters the only conclusion you can come to is that the findings required by (B) have not been met.

FINDINGS REQUIRED BY (C):

Findings required by (C) are not met because of the following reasons:

1. The Columbia River is a dynamic entity. It cannot be segmented into portions. Since its stream will pass from headwaters through the entire system it must be considered in its entirety when determining water quality limits.
2. The 1987 EPA/Paper Industry Cooperative Dioxin Screening Study determined that the cumulative load of 2,3,7,8-TCDD discharged from seven mills reached 43.5 mg/day, seven times greater than the acceptable loading capacity of the Columbia River at its annual median flow rate. This load level was reached without including data from the James River-Camas mill, two bleached pulp mills in Canada, one in Montana or other non-pulp related sources of dioxin (Ref. pp. A-35, A-38, A-40, EQC Staff Report, Agenda Item E).
3. Appropriate river flow used to calculate the loading capacity has not been defined (p. A-38, Agenda Item E). No consideration was given to the average minimum river flow of 120,595-cfs (Evaluation Report, June 5, 1989) a condition that occurs in the summer and autumn months when the Lower Columbia River experiences sustained low water levels, lower-than-median water flow and current reversals.

TAMPERING WITH EXISTING RULES:

There is no justification for the DEQ to suggest that the existing rule DAR 340-41-026 be amended at this time. DEQ's efforts on behalf of WTD increasingly appears that the Department is abandoning its role as watchdog of Oregon's environment and becoming more an advocate of special interest groups.

Attachments:



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

JUN 22 1989

REPLY TO
ATTN OF: WD-138

SEE PP 2, 3 & 4

Colonel Charles E. Cowan
District Engineer
Portland District, Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208-2946

Attn: CENPP-PL-R (Goudzwaard)

Re: 071-OYA-2-008397, WTD Industries, Inc., May 24, 1989

Dear Colonel Cowan:

We have reviewed the referenced public notice and supplemental information concerning the development of a bleached kraft pulp mill and docking facilities at Port Westward, adjacent to Columbia River mile 53.0, near Clatskanie, Oregon. This project was discussed with the resource agencies and the applicant at a meeting on October 19, 1988. Additionally, we inspected the project site on February 16, 1989, and June 13, 1989.

The project involves the placement of 100,000 cubic yards of unconsolidated fill material in 10 acres of palustrine emergent wetlands to create an upland area for the construction of mill processing and storage facilities. Effluent pond construction would impact an additional 28 acres of palustrine emergent wetland by grading and dike building activities involving 100,000 cubic yards of excavation/fill material. Installation of a 36-inch effluent discharge line will involve shoreline and in-water excavation and backfill. On Bradbury Slough the applicant proposes to construct a 1,000-foot by 24-foot "L" shaped dock with 750 feet of fender piling, and to construct a three-pump water intake structure capable of supplying the 15 million gallons of water required for the pulp mill operations. Finally, additions will be made to the existing pier along the Columbia River, including a new pile supported access route, 525-foot long fender piling, and the placement of 600 cubic yards of fill and riprap.

As mitigation for the 38-acre wetland impact, the applicant proposes to alter the topography and hydrology of a 50-acre cottonwood tree farm located approximately one mile south of the proposed pulp mill location. Proposed site alterations include selective excavation of basins and channels, creation of low-lying islands, active revegetation with wetland plant species, and a piped water source intended to develop and maintain sufficient wetland hydrology.

We are opposed to the issuance of a permit for this project at this time for the following reasons:

1. Alternatives analysis - We are concerned about the adequacy of the applicant's alternatives analysis. Although it is economically convenient to locate near a waterway for shipping and receiving purposes, a pulp mill and associated treatment lagoon and storage areas do not, in themselves, require a wetland or waterway location for their existence.

The first step in the 404(b)(1) evaluation is to establish the justification for the fill activity to take place in waters of the United States. Permit applicants must demonstrate the need for the project to be located in the aquatic area and/or wetland. The question of need is influenced by the water relatedness or dependency of the project, and the availability of practicable alternatives. For non-water dependent projects such as this (exclusive of moorage facilities, water intake structure, and effluent outfall), location and/or design alternatives are presumed to be available pursuant to Section 230.10(a) of the 404(b)(1) guidelines unless demonstrated otherwise.

The applicant evaluated and subsequently rejected various regional site alternatives based on a failure to meet one or more of the "optimum" site selection criteria. One of the site evaluation criteria is the need to locate the proposed development near a waterway of sufficient depth to facilitate economical shipment of raw materials to the site (e.g., wood chips) and finished products from the site (e.g., pulp and eventually paper). We understand the preference for locating near transport facilities; however, the alternatives analysis does not discuss how far the mill can be from the transport facilities and still be economically feasible. Sites close enough but not adjacent to deep draft channel sites need to be considered.

Area of land availability is another site evaluation criteria that was used to eliminate alternative sites that might otherwise be practicable if the project required less acreage. One important design alternative that would reduce the amount of acreage required by the project is the method of treatment of wastewater. One such alternative, activated sludge treatment, requires less area and may be a more efficient method of treatment. Although more costly to build, the reduced environmental impacts and related costs for mitigation coupled with treatment efficiency could justify this design alternative.

2. Water quality - We are concerned about potential water quality degradation associated with this project. A stormwater management plan should include provisions for treatment of polluted runoff (particularly oil, grease, and sediment) prior to discharge into adjacent waterways.

According to the public notice, there will be excavation and in-water disposal of Columbia River sediment during the installation of the effluent pipe. Given the long history of the project site as an Army Munitions Depot, it is possible that the sediments in the area of

disturbance may be unsuitable for in-water disposal. Sediment quality must be sampled, analyzed, and submitted to EPA and the Department of Environmental Quality for review.

3. Threatened and endangered species - We are concerned about potential project related impacts to two federally listed species, the endangered Columbia white-tailed deer and the threatened bald eagle. We would consider impacts to these species as significant regardless of a no-jeopardy opinion on the population as a whole. The active bald eagle nest and adult eagle foraging adjacent to Bradbury Slough opposite the project site could be impacted by proposed barge traffic, general mill operations, and noise from the proposed water intake structure. At the June 13, 1989, on-site meeting, the applicant identified the existing PGE water intake pump station as an alternative location for the WTD water intake structure. Additionally, if the need for the lagoon was eliminated by another treatment method such as an activated sludge treatment, the lagoon site could be used for chip storage and the barge facility could then be located along the Columbia River rather than opposite the bald eagle nest and feeding area.

Columbia white-tailed deer would be displaced from wetland areas they are likely using at the project site. The deer also have been sighted at the proposed mitigation site.

4. Mitigation - The public notice states that the proposed mitigation site is currently an upland area. Based on an on-site inspection and interpretation of available (although incomplete) field data, this may not be correct. Preliminary interpretation of hydrologic data being collected by the applicant's consultants indicate that some of the mitigation site is wetland. Several plant species in the understory have yet to be identified. Additionally, the hybrid cottonwood planted at the mitigation site may be more water tolerant than the native black cottonwood and thereby deserves a wetter ranking for purposes of delineating wetlands.

The proposed mitigation is intended to compensate for the project related 38-acre wetland displacement. Impacts to unfilled wetlands adjacent to the project site (e.g., due to altered hydrology) also need to be mitigated. Furthermore, the active osprey nest located at the proposed mill site will need to be relocated.

The assessment procedure used to score the wildlife habitat value of project site wetlands and the mitigation site is not an accepted methodology for habitat characterization. The method used for this project is highly subjective and is modeled after an assessment form that was initially devised to permit local governments to rank natural areas as part of Goal 5 inventory requirements. That method was not intended as a substitute for more sophisticated habitat evaluation methodologies, nor was it intended to be used to calculate mitigation requirements.

Mitigation sites that require an artificial (e.g., pumped) source of water to maintain the required hydrology are less desirable from a long-term compensatory perspective than self-maintaining wetland systems.

The applicant needs to explore alternative mitigation strategies (e.g., deeper excavations and redirecting existing hydrology by filling deep drainages and breaching berms) that result in a self-maintained wetland system.

The complexity of the mitigation proposal coupled with the low level of success for wetland creation projects of this kind results in a high level of risk that monitoring and assurances of corrective action cannot adequately compensate. Therefore, we favor a compensatory ratio greater than 1:1 for projects of this magnitude and complexity. Additionally, long-term mitigation site protection must be assured even in the event that the project site lease runs out and/or the project is terminated.


We recommend the Corps not issue this permit until these concerns are adequately addressed in the Corps environmental decision documents. If these concerns cannot be adequately resolved, we believe the project as currently proposed is a candidate for the preparation of an environmental impact statement.

If the Corps intends to issue the permit and not prepare an environmental impact statement, we request prior notification and a copy of the 404(b)(1) evaluation and environmental assessment.

We are prepared to work with the applicant, resource agencies, and the Corps to devise an environmentally acceptable solution to the issues we have raised. For further coordination, please contact Mr. William Sobolewski of our Oregon Operations Office at 221-2651.

Sincerely,



 Robert S. Burd
Director, Water Division

cc: USFWS-Portland
NMFS
ODSL
ODFW
ODEQ
OOO
Applicant



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Portland Field Office
727 NE 24th Avenue
Portland, OR 97232

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JUN 29 1989
WRAS/404 REVIEW
EPA/REGION 10

June 23, 1989

Colonel Charles E. Cowan, Jr., District Engineer
Portland District, Corps of Engineers
Attn: CENPP-PL-RP (Goudzwaard)
P. O. Box 2946
Portland, Oregon 97208

SEE PP. 2 & 3

Re: 071-OYA-2-008397 (Goudzwaard)
Columbia River
WTD Industries, Inc.
May 24, 1989

Dear Colonel Cowan:

The Fish and Wildlife Service (Service) has reviewed the referenced Public Notice and supplemental addendum for WTD Industries, Inc. proposed bleached kraft pulp mill. The project site is located along the south side of the Columbia River at River Mile 53 and the lower end of Bradbury Slough near Clatskanie, Columbia County, Oregon. These comments have been prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and are consistent with the intent of the National Environmental Policy Act of 1969.

The proposed project has been discussed at several meetings and during on-site visits with the applicant and their consultants (Scientific Resources, Inc.) the Corps, and representatives from resource agencies. WTD Industries is planning to sublease a 250-acre project site from Portland General Electric (PGE), which leases the land from the Port of St. Helens, the property owner. The project involves filling 38-acres of palustrine emergent and shrub-scrub wetlands which are part of a larger 80-acre wetland complex on the site. Ten acres of wetland would be lost for construction of the mill processing plant and chip storage piles, and 28-acres would be lost by construction of effluent ponds. 200,000 cubic yards (cy) of material would be used for filling and effluent pond construction. A 36-inch-diameter effluent pipe would be installed to extend 400 feet out into the Columbia River for discharging approximately 15 million gallons of treated waste effluent daily. This would require excavation of 300 cy of bankline and 32 cy of bottom sediments for anchoring the pipe. A water pumping intake structure is proposed along Bradbury Slough for withdrawing 15 million gallons daily for plant use and for the wetland mitigation area. A new 1,000-linear-foot dock and 90 piles are proposed in Bradbury Slough for unloading chip barges. The deepwater shipping dock already in use for the Beaver Power Plant will be modified by adding 120 piles for another access route and 50 fender piles for protection from ship battering.

The project includes the creation of a 50-acre mitigation site within 1 mile of the project site in an area that James River Corporation has planted as a cottonwood plantation. The mitigation plan would create 38 acres of wetlands, and would have a buffer strip and upland spoil islands.

The Columbia River and Bradbury Slough provide a migratory pathway and support major runs of anadromous fish including spring and fall chinook and coho salmon; steelhead and searun cutthroat trout; sturgeon and smelt. The project site has seasonal and permanently flooded freshwater wetlands. The river, slough, wetlands, and associated vegetation provide nesting, rearing, and migration habitat for a variety of waterfowl, shorebird, and songbird species protected and managed under the Migratory Bird Treaty Act. The project site provides habitat for small mammals, deer and raptors. Osprey and bald eagles nest in the area.

The public notice indicates the described activity may affect endangered species. Bald eagles are present adjacent to the project site and Columbian white-tailed deer may also be present. We are aware that informal consultation on the bald eagles is on-going under Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531, et seq.) and that a Biological Assessment is in preparation. The Biological Assessment should describe the present level of activity, use of the project site and vicinity, and describe anticipated affects to listed species from: 1) disturbance during and after construction (i.e. impacts from noise, air, water pollution); 2) operation of the project; 3) potential for abandonment of the Crims Island nest site; and 4) impacts to food resources, etc. In accordance with Section 7 the Corps is required to assure that its actions have taken into consideration impacts to Federally listed threatened or endangered species for all Federally permitted projects. The Service's comments will be forthcoming upon receipt of the Biological Assessment.

The wetland losses from project construction should be minimized to the extent possible. We recommend that use of an activated sludge treatment process be evaluated because it would require less acreage. This could reduce the impacts to 28 acres of wetlands which would be lost due to the 50-acre effluent ponds. If this method proves to be acceptable, the project would require less acreage and alternative locations initially ruled out may be feasible. Secondary impacts to the remaining on-site wetlands, such as degradation to water quality from channeling runoff and disturbance to wildlife from the mill operation need to be addressed and mitigation considered. We have requested a copy of the Wetland Delineation for the project site from Scientific Resources for our review.

The public notice states that the mitigation site is upland. However, this has not been formally delineated and needs to be done. Because of the complexity of the mitigation and uncertainty that it will achieve equal habitat values, it is appropriate for the applicant to replace wetlands lost at a ratio greater than the 1:1 proposed. We also recommend that arrangements be made for long-term protection and management of the mitigation area. We recommend deeper excavation and diversion of drainage ditches to create a wetland system that could function without artificially pumping water. A "Wetland Wildlife Habitat Assessment" was used by Scientific Resources to

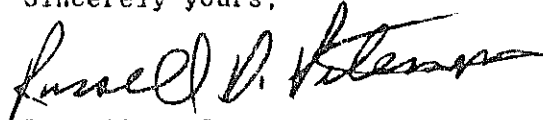
evaluate the functions of the wetland within the project boundary. Because of the subjectivity of this methodology, we recommend that use of the Habitat Evaluation Procedures (HEP) be considered to evaluate the existing wetland and the benefits of the mitigation plan.

There are a number of project related factors that have a potential to detrimentally impact biological resources. These include the discharge of dioxin and chlorine, which are highly toxic to aquatic lifeforms (fish, invertebrates, etc.), air emissions (i.e. acid rain) that could impact vegetation, water quality, fish and wildlife, and the storage and movement of large quantities of wood chips that could pollute nearby waters directly or indirectly. The daily withdrawal of 15 million gallons of water from Bradbury Slough could also impact both fish and wildlife resources by habitat degradation and/or loss of food sources.

The issues of project alternatives, air and water quality, fish and wildlife impacts, cumulative impacts and mitigation require further information before we can fully evaluate and comment on the proposed project. We request that the referenced permit not be issued until additional information is provided. Because of the magnitude of the proposed project; the potential for significant impacts; and the need to fully evaluate alternatives and cumulative impacts we recommend that an Environmental Impact Statement (EIS) be prepared for this project. An EIS is the appropriate means to provide the needed information to enable decision makers to act on permit requests with a full understanding of all potential impacts from this project. ✓

The above views and recommendations constitute the preliminary report of the Department of the Interior on the subject public notice.

Sincerely yours,



Russell D. Peterson
Field Supervisor
Acting for U.S. Department of
the Interior Coordinator

KI:mm/wtdpermt

cc:
EPA
NMFS
ODFW
DSL
DEQ
WDE
WDF
WDG



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
1002 NE HOLLADAY STREET - ROOM 620
PORTLAND, OREGON 97232
503/230-5400

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JUL 28 1989

Water Quality Division
Dept. of Environmental Quality

Mr. Jerry E. Turnbaugh
Department of Environmental Quality
Water Quality Division
811 S. W. 6th Avenue
Portland, Oregon 97204

RE: NPDES Wastewater Discharge Permit
File Number: 104265 (Port Westward Pulp Co.)

Dear Mr. Turnbaugh:

The National Marine Fisheries Service (NMFS) has completed its review of the subject proposed permit and Evaluation Report. The permit would allow the discharge of wastewater from the operation of a proposed bleached-kraft pulp mill into the lower Columbia River near Clatskanie, Oregon. Our comments and recommendations are based on the NMFS's responsibility for the protection and enhancement of marine, estuarine, and anadromous fishery resources and their supporting habitats.

Studies by our Northwest Fisheries Center indicate that, of the 250 to 350 million salmon and steelhead smolts migrating out of the Columbia Basin each year, up to 30 million migrate through the nearshore areas in the vicinity of the proposed mill. Investigations on coho salmon smolts in the Chehalis River indicate that survival of these fish is less than 50 percent of a neighboring river, the Humptulips River. The Chehalis River receives effluent from two pulp mills near its mouth. The Humptulips River does not. Contaminants that could be produced by the proposed mill would pose a significant threat to the important commercial and recreational fishing resource of the Columbia River.

The Evaluation Report fails to address the cumulative impacts that this pulp mill could have on the fishery resources of the Columbia River. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels that represent significant threats to human health, the environment, and fish-eating wildlife. Effluent receiving waters associated with other bleached-kraft pulp mills on the Columbia River have been included on the U.S. Environmental Protection Agency's (EPA) 304(1) "short" lists that identify water bodies in violation of water quality standards due to toxicants. Although



the proposed mill will supposedly discharge a smaller amount of toxicants compared to other mills on the Columbia River, its effluent will only exacerbate an already recognized problem.

The Evaluation Report fails to adequately address the issue of the best available technology for this industry. Although the proposed mill is incorporating methodology that is designed to reduce toxicants in its effluent compared to existing mills, the Report states that a similar mill does not exist in Oregon, and, therefore, the predicted level of toxicants produced cannot be reliably verified. The Report does not describe and compare other pulping processes and wastewater treatment systems that could reduce toxic effluents. The Report simply indicates that the proposed mill should produce less toxicants than those that are presently operating.

Some important water quality parameters for the proposed mill are not well addressed. Bleached-kraft pulp mills are known to be a significant source of chlorine based compounds such as 2,3,7,8-TCDD ("dioxin") and a close relative 2,3,7,8-TCDF ("di-benzo furans"). Both dioxin and di-benzo furans are exceedingly stable, readily incorporate into aquatic ecosystems, are very persistent, and readily bioaccumulate. Laboratory studies have demonstrated that dioxin in minute quantities can result in acute and delayed mortality in fish. Dioxin has been linked to teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. The proposed permit properly limits dioxin to none detectable. However, it does not address the many and various chlorophenolic precursors from the chlorine dioxide bleaching stage. Chlorophenolic contaminants from pulp mills are highly toxic to aquatic life and are highly resistant to further chemical degradation. The chlorophenolics are also difficult to burn completely, and under combustion conditions they can form dioxins and other hazardous products.

The proposed permit does not adequately monitor chlorophenolics. As described in the permit, chlorophenolics would be lumped under the category of "adsorbable" organic halides. This category is too nonspecific to properly document the occurrence and regulate the release of chlorophenolics in the effluent. Methodology specific for chlorophenolics must be employed. We recommend that methods developed by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) be employed (Technical Bulletin No. 498, July 1986: methods CP-85.01 and CP-86.01). NCASI has a West Coast Regional Center in Corvallis, Oregon and is represented by Mr. Lawrence LaFleur, (503)-752-8801, who can provide copies of the NCASI procedures. Methods CP 86.01 covers 27 chlorophenolics, which are listed in Section 1.0 (copy enclosed). Schedules A and B of the proposed permit should be revised to reflect chlorophenolics monitoring. Because of the uncertainty of the results of the new methodology being employed at the proposed mill, studies of effluent effects

in the mixing zone and at the mixing zone boundary should be performed. A modeling study to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms should be performed using worst case conditions. River flow conditions that should be modeled should include the combination of spring tides, low river flow, and flood tide.

Until our concerns are fully addressed, we recommend that this permit be withheld. If you have any questions about our comments, please contact Edmond Murrell of my staff at (503) 230-5433.

Sincerely,



Einar Wold
Division Chief

Enclosure

cc: Oregon Dept. of Fish and Wildlife
Fish and Wildlife Service, ES, PFO
Oregon Division of State Lands
Environmental Protection Agency, Portland

JRT SMITCH
Director



STATE OF WASHINGTON

DEPARTMENT OF WILDLIFE

5405 N.E. Hazel Dell Ave., Vancouver, WA 98863

Tel. (206) 696-6211

July 28, 1989

Jerry Turnbaugh and,
Bill Fuller,
DEQ Water Quality and Air Quality Divisions,
811 SW Sixth Ave.
Portland, OR 97204

Subject: WTD Port Westward Pulp Co. wastewater discharge
and Air Quality permits

Dear Sirs:

Significant commercial and sport fisheries exist in the lower Columbia River, and anadromous salmonids from upriver sites must migrate through the lower Columbia R. as smolts, and again as adults. The Columbia River is currently listed, by the Washington Dept. of Ecology, as one of their top 10 water quality cleanup sites because of Dioxin contamination. Detectable levels of Dioxin have been found in fish downstream of bleached paper pulp mills in the Columbia River and elsewhere. I understand that a recent study of Bald eagles in the lower Columbia R. has shown impacts to this endangered species because of water pollution and contaminated prey.

The proposed Port Westward Mill near Clatskanie would withdraw approximately 23 cfs from the Columbia River. Wastewater effluent from the mill could impact the water quality along the lower Columbia River for miles with releases of Dioxin and other toxics. Several pulp mills presently operate near the proposed site. We request that the quantities of various compounds expected to be discharged from the Port Westward mill not be compared to permitted standards for wastewater discharges without also evaluating discharges from nearby mills and the present water quality of the lower Columbia River. **Cumulative impacts** of all these mills on water quality, fish and wildlife, recreation, commercial and sport fishing industries, etc. should be considered before additional wastewater discharges are permitted.

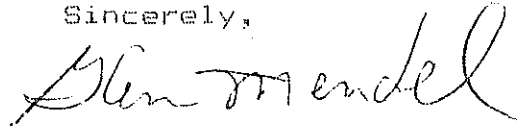
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Water Quality Division
Dept. of Environmental Quality

Poor air quality currently exists along much of the lower Columbia River. Although poor air quality may or may not have direct impacts on wildlife in the area, it does affect human health and may reduce recreational opportunities for many people along the lower Columbia. Cowlitz County was recently suggested as having the highest overall pollution levels of any county in Washington State (Assoc. Press Study) and the prevailing winds would normally disperse emissions from the proposed WTD mill towards Cowlitz County. Therefore, the cumulative impacts of discharges of chloroform, particulates, carbon monoxide and other compounds into the air should be considered within 30 miles, or more, of the proposed mill site, not just within the immediate vicinity of the mill.

Thank you for the opportunity to comment on this proposal.

Sincerely,



Glen Mendel,
Area Habitat Biologist

c: Tara Zimmerman, WDW
David Mudd, WDW
Tom Robertson, EPA, Portland

misc\wtd

Just an opinion

The following is a letter written to the Oregon Department of Environmental Quality from the manager of the Oregon Salmon Commission regarding the proposed Port Westward pulp mill, July 10, 1989

"Thank you for the opportunity to comment on this extremely important process.

On behalf of the Oregon Salmon Commission I wish to express our extreme concern about potential hazards from effluents of this proposed project, as well as any other proposed pulp mill operation.

Specifically, we are concerned that there is danger to the very valuable food product we harvest and market worldwide from the operation of pulp mills on the Columbia River and other river systems in Oregon. For a period of several months we have been aware of the worldwide concern growing about contamination of fish products from pulp mill effluents. We have read the recently published revelations about this interrelationship which have been forthcoming in the media following disclosure of information that had previously been withheld from the public by some government and corporate entities. It is a prime function of

this commission, and a major priority in its activities, to preserve the excellent reputation for quality which our salmon has in the world marketplace.

In order to perform this duty to our constituency and to the State of Oregon, we must ask for extreme caution and careful scrutiny as this permit is considered. To that end we formally present the following position on this matter:

1) *The U.S. Army Corps of Engineers must be required to prepare a complete and comprehensive environmental impact statement which addresses the impact of effluents, including dioxin, on salmon. The analysis of potential impacts must include a quantification of losses to the commercial salmon industry in the event of either a) contamination of salmon which renders it unfit for human consumption, or b) a perceived contamination of salmon which makes it less desirable to the consumer.*

2) *The Oregon Department of Environmental Quality, or any agency with regulatory control, must require that dioxin effluents be held to a level not simply below the level of analytical detectability, but all the way to the level of potential food contamination, which we understand*

could be much smaller than 10 parts per quadrillion.

3) *Included in both federal and state regulatory considerations must be a consideration of similar effects on salmon from any proposed pilings which contain creosote, penta, or any other chemicals which are potentially harmful to food.*

4) *In the event that an EIS shows that effluents from this project or any future such project surpass effluent contamination levels which protect food fish and food fish products, no permit should be granted.*

Oregon's commercial fishing industry is worth hundreds of millions of dollars to this state annually. It is extremely important that you, as our state's watchdog over these affairs, maintain the highest levels of water quality in our rivers to preserve the water quality of our offshore marine environment.

Without your concern and subsequent strength of action, this industry will not survive. We must continue to assure the purity of our fish for eating."

—Tom Robinson
Manager

Oregon Salmon Commission
Newport, OR 97365

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determined ^{acceptable} ~~safe~~ for human contact. The scientific community continues to support the EPA's findings. Dioxin is not a substance which will eventually flush out of an aquatic or riparian habitat, unlike sediments or fecal coliform. TCDDs bioaccumulate in the tissue of vertebrates. This means the effects of releasing even minute quantities now may result in magnified and destructive effects years later. For example, DDT, outlawed over ten years ago is still causing toxic trauma in raptors and other predatory species today.

Further, The federal Fish and Wildlife Service has urged the Army Corp of Engineers to compile a full EIS under NEPA to establish the effects of the wetlands destruction and the adequacy of the mitigation efforts, citing potential conflicts under the Endangered Species Act as to the habitat destruction of the endangered white tailed deer and bald eagle. Such a process may take one or more years to complete.

Other issues, including effects of dioxin on anadromous fisheries, recreation, and subsequent tourism, are in themselves substantial reasons to carefully consider the wisdom of allowing yet another pulp mill to be constructed on the Columbia.

II. THE EQC HAS FAILED TO MEET THE NECESSARY NOTICE AND COMMENT REQUIREMENTS OF THE OREGON ADMINISTRATIVE PROCEDURES ACT

The EQC has not employed the procedures required by the Oregon APA, and so cannot adopt any policy at this meeting. The decision made by the commission must be necessarily characterized

as either a rulemaking or adjudicative proceeding. The request for action submitted by the DEQ clearly shows the rule-making and policy nature of the matter before the EQC. The normal notice and comment requirements for rulemaking have not been followed, however, so no policy directions can be adopted by the EQC at this time. Further, even if the decision were characterized as being adjudicative, it would involve the formal contested case procedures required by the Oregon APA. Those procedures have not been met, so no adjudicative decisions can be made at this meeting.

The decision before the EQC is clearly rulemaking, and clearly not adjudicative as it fails to comply with the criteria established under ORS 183.310.

Pursuant to ORS 183.335 petitioners request postponement of approval until adequate notice and comment under the rulemaking procedures is formally recognized.

The Oregon APA defines a rule as:

"any agency directive, standard, regulation or statement of general applicability that implements, interprets or prescribes law or policy, or describes the procedure or practice of any agency." ORS 183.310(8).

The DEQ itself has requested that the commission approve a policy decision, i.e. enabling the department to proceed with a permit process even in the face of violating the water quality limited regulations it imposed upon itself. See OAR 340-41-026(3).

Consequently, the Commission must:

"[p]rior to the adoption, amendment or repeal of any rule. . . give notice of its intended action." ORS 183.335(1).

III. EVEN IF ADEQUATE NOTICE AND COMMENT WAS PROVIDED PETITIONER REQUESTS A MANDATORY POSTPONEMENT

If the Commission maintains that it gave notice as required subsection (4) of ORS 183.335 states that:

"[u]pon request of an interested person received within 15 days after agency notice pursuant to subsection (1) of this section, the agency shall postpone the date of its intended action no less than 10 nor more than 90 days in order to allow the requesting person an opportunity to submit data, views or arguments concerning the proposed action."

N.C.A.P. requests such a postponement so that it may address in greater depth the variety of serious objections to the proposed mill construction and allow the EQC additional time to assimilate the available factual data and formulate a comprehensive state policy regarding the release of dioxin in Oregon.

IV. THERE IS NO REASON TO MAKE A DECISION AT THIS TIME

Granting the requested postponement will not significantly slow the construction of the plant, should it ultimately be approved, since no construction can begin until several other agencies complete studies of the plant and its impacts, and decide whether to grant necessary permits. As these agencies study the proposed plant, new information will become available to the EQC regarding effects of dioxin on the environment. For

example, the pending environmental assessment or environmental impact statement from the Army Corps of Engineers will take time to complete, and several groups have already insisted that the agency prepare a full EIS.

The EQC should not allow itself to be rushed into making such an important decision as this. Oregon's economic and public health demand at the very least a postponement of the approval process to allow further review and consideration of the proposal.

V. CONCLUSION

While the public has been given a chance to comment on the proposed mill, it has not been given access to information which would allow it to respond responsibly. The Commission has a duty to provide the public with the relevant data necessary to make a balanced and informed decision. In order to provide such information, the EQC must demand more information from the DEQ as to how much TCDD will be released from the new pulp process proposed by WTD, how much of the Columbia is now actually in violation of the current TCDD water quality standards, and how long that violation will persist given the nature of the bioaccumulation of dioxins by fish. Until adequate information is available on these and related topics, it would be improper and illegal for the EQC to set a policy allowing construction of pulp mills which will release dioxin into the Columbia.

available to the EQC, it is clear that the EQC cannot properly make these findings.

A. First Finding

The first required finding, OAR 340-41-026(3)(.) (A), requires that prior to allowing construction of a new facility which would cause an increased stream load, the Commission or the director must first find that "the new or increased discharge load would not cause water quality standards to be violated."

The EQC cannot properly reach this required finding and therefore should not authorize the DEQ to consider the requested permit. The DEQ, in offering its rationale in its first alternative proposal, clearly admitted that "[b]ased on available information from the EPA 104-mill study and best professional judgment in interpreting and applying results with respect to the bleached kraft mills discharging to the Columbia, TCDD levels in the Columbia River probably exceed the EPA Water Quality Criteria/EQC standard for TCDD." EQC Request For Action, July 21, 1989, pg. 4. As a result, portions of the river are deemed by the DEQ to be in violation as exceeding its water quality standards for TCDD.

Because the DEQ has already listed portions of the Columbia River as exceeding its water quality standard for TCDD, the addition of this plant will not cause the Columbia to go from a condition from nonviolation to a condition of violation, because the river is already in noncompliance. This plant will be part of the cause of a violation of water quality standards in the

Columbia River. This directly contradicts the required finding. Permitting another pulp mill to discharge additional TCDD, because the river already exceeds its permissible level for TCDD is a gross violation of common sense and sound public policy. The violation still remains and the threat to public health will have been worsened.

There can be no doubt about the current violation of water quality standards for TCDD. In spite of this, the DEQ report by Jerry Turnbaugh attempts to cast doubt on this situation. It does this by directing the Commission's attention to the scientific inability to detect TCDDs at the extremely low pollution level at which a violation occurs, and downplaying the significance of the discovery of TCDD in fish tissue. The report merely notes in passing that "TCDD has been found in fish tissue taken from the river." Turnbaugh memo of July 17, 1989, page D-2. The memo fails to point out that the contamination of fish tissue is ^{One methyl} ~~precisely the accepted EPA methodology~~ for determining the level of TCDD water pollution. This is especially important because the contamination of fish tissue is the major basis of the EPA 2,3,7,8-TCDD water quality criterion.

TCDD will not be readily reduced upon reduction in 2,3,7,8-TCDD being released from Columbia River bleach kraft mills. The bioaccumulation of TCDD in fish is a function of the longterm availability of TCDD persistent in river sediments and the ecosystem's foodchain. The Columbia River will remain water

quality limited (in terms of availability of TCDD for contamination of fish) for an undiscussed length of time.

Approximately 94.2% of human exposure 2,3,7,8-TCDD results from the consumption of aquatic organisms which exhibit an average bioconcentration potential of 5000-fold; the remaining exposure is from drinking water. Environmental Protection Agency, Ambient Water Quality Criteria for 2,3,7,8-Tetrachlorodibenzo-P-Dioxin, pg. 181. A recent EPA study conducted in Minnesota shows the bioconcentration potential of TCDD to be 66,000 for carp and 97,000 and 159,000 for fathead minnows for varying concentrations. Memo from Philip M. Cook, Chief Hazardous Research Branch, to Jim Cummings, Office of Assistant to the Administrative for Solid Waste and Emergency Response, Environmental Protection Agency, 2,3,7,8-TCDD in Aquatic Environments, Feb. 4, 1987. These higher bioconcentrations render the EPA Water Quality Criterion inadequate to protect human health at the level stated.

B. Second Finding

The second required finding under OAR 340-41-026(3)(a)(B) is that "new or increased discharged load would not threaten or impair any recognized beneficial uses."

Because there is no recognized safe concentration for a human carcinogen, the recommended concentration of 2,3,7,8-TCDD in water, for the causation of one cancer in a million exposed humans is 0.0013 parts per quadrillion (ppq). This number is largely based on consumption of fish since this is the

predominant route of exposure for humans. However, the study conducted by the EPA in Minnesota suggests that even this value may underestimate the health risks of TCDD exposure.

Given the extreme toxicity of TCDD, any new or increased discharge will certainly threaten and impair many beneficial uses of the Columbia. Many fish are taken from the river. The bioaccumulation of TCDD in fish will have a devastating impact on the fisheries industries. Fish have already been found to be contaminated with TCDD, and the addition of more TCDD to the water will not only contaminate additional fish, but increase levels of TCDD in fish already contaminated.

DEQ, in an interoffice memorandum from Jerry Turnbaugh to the EQC, dated July 17, states that "based on information from the applicant, the effluent from the proposed mill meets water quality standards outside a 400 foot mixing zone with the possible exception of TCDD." (emphasis added). The main reason for this uncertainty is that no testing for TCDD has been conducted in the vicinity of the proposed plant site.

Such uncertainty on the part of the DEQ does not satisfy the finding requirement that no threat or impairment to beneficial uses could occur. In fact, the mere presence of trace amounts of a substance as toxic as TCDD in itself, is a threat to aquatic organisms. The lowest dose of 2,3,7,8-TCDD ever tested on aquatic organisms (i.e., 38 ppq on fingerling trout) resulted in significantly increased mortality and abnormal behavior and in decreased growth. Mehrle, Paul M., et. al. 1987. Toxicity in

Bioconcentration of 2,3,7,8-tetrachlorodibenzodioxin and 2,3,7,8-tetra chlorodibenzofuran in Rainbow Trout. *Envt. Tox. J. and Chem.* 27. pg. 47-62. The DEQ has offered no finding of any level of 2,3,7,8-TCDD exposure that does not threaten the survival or functions of aquatic organisms. Likewise, 2,3,7,8-TCDD has caused cancer, (Kociba R.J., et. al. 1978. Results of Two Year Chronic Toxicity and Oncogenicity Study on 2,3,7,8-tetrachloradibenzo-P-dioxin in Rats. *Toxicology Applied Pharmacology*, Vol. 46. pg. 279-303), reproductive effects (Murray, F.J, et.al. 1979. Three Generations Reproductive Study of Rats given 2,3,7,8 tetrachloradibenzo-P-dioxin (TCDD) in the Diet, *Toxicology Applied Pharmacology*, Vol. 46. pg 279-303) and immune system effects (Nagarkatti, P.S., et. al. 1984. Sensitivity to Suppression Cytotoxic T-cell Generation by 2,3,7,8 tetrachloradibenzo-P-dioxin (TCDD) is Dependent on ^{Ah}AH Genotype Murine Host. *Toxicology and Applied Pharmacology*. Vol. 72, pg 159-176) in laboratory animals at the lowest doses ever tested, one part per trillion.

C. Third Finding

The third required finding under subsection OAR 340-41-026(3)(a)(C) is that "new or increased discharged load shall not be granted if the receiving stream is classified as being water quality limited unless the pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to be water quality limited."

The DEQ again admits its uncertainty by stating in its findings that the "Port Westward mill will be using state of the art production processes that should minimize the formation of TCDD and a denial of the permit on the basis that some small amount of TCDD will be discharged may be unwarranted because of the uncertainty as to whether the Columbia River is actually water quality limited with respect to TCDD." Interoffice Memorandum from Jerry Turnbaugh to EQC, July 17, 1989. (emphasis added). The DEQ has classified the river as water quality limited with regard to levels of TCDD allowed.

At this time, DEQ admits that "because the mill bleaching process is different from other Oregon bleached-kraft mills, it is not known to what extent dioxin will be produced." Oregon Department of Environmental Quality, Draft of Public Hearing Notice, July 6, 1989. The recently amended regulations require no additional loading if the receiving stream is classified as water quality limited. The Department, nevertheless, strongly urges that the Commission approve the construction of the WTD pulp mill along with its inevitable outflow of dioxin into the Columbia River. Such a request clearly defies EQC's guidance that it avoid both cumulative and new source discharges of pollutants which cause the receiving stream to be water quality limited in the first place. The Agency must, according to its own procedure, assure the public that the receiving stream can adjust to increased toxicity loads without adverse affects to the human, riparian, and benthic environments.

Therefore, until the Agency can demonstrate the present levels of TCDD are in compliance with the current water quality limited standard established, the introduction of any new source, no matter how technologically streamlined should be flatly prohibited. DEQ's own uncertainty on this issue underscores the need to postpone the granting of the WTD request.

II. A MORE RESTRICTIVE STANDARD SHOULD BE APPLIED TO TCDD POLLUTION

Even though the river is not in compliance with existing TCDD standards, an even more restrictive standard should be adopted. According to the Oregon Administrative Rules, levels of toxic substances shall not exceed the most recent published criteria values for organic and inorganic pollutants established by EPA and published in "Quality Criteria for Water," which are presented in Table 20. Table 20 list the Water Quality Criteria for 2,3,7,8 -TCDD (Dioxin) as 0.000013 ng for water and fish ingestion and 0.000014 ng for fish consumption only. OAR 340-41-205(2)(p)(B) (1987). This standard is already being violated.

The existing standards for TCDD should be made more restrictive. OAR states "[t]he criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect

beneficial uses, as accepted by the Department on a site specific basis." OAR 340-41-205(2)(p)(C) (1987).

III. THE PROPOSED WTD PLANT MAY VIOLATE THE ENDANGERED SPECIES ACT

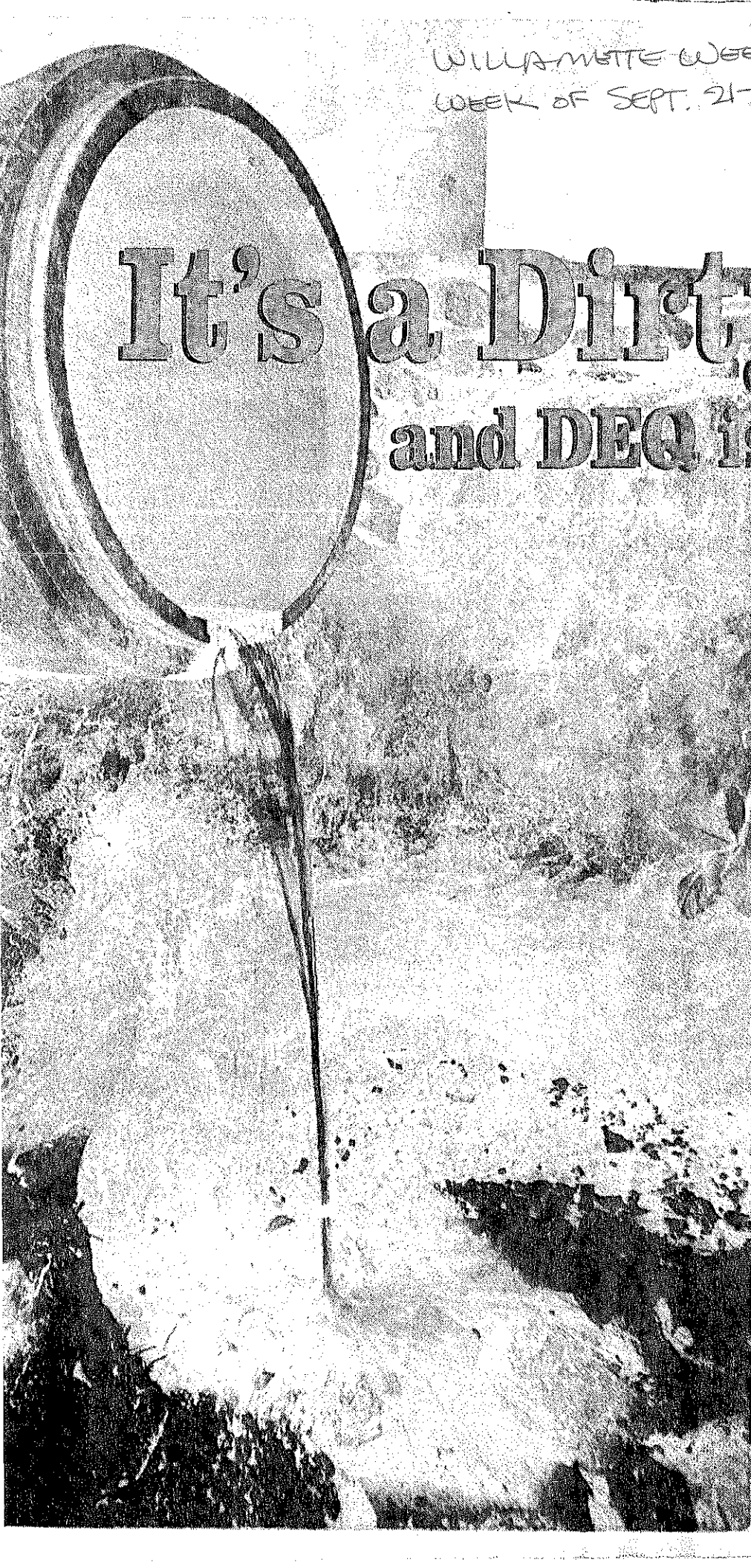
The proposed project site for the WTD Industries, Inc. bleached kraft pulp mill (WTD mill) contains sensitive wetlands habitat for a variety of wildlife. According to the Fish and Wildlife Service, bald eagles and perhaps the Columbian white-tailed deer, are present adjacent to the site.

The Environmental Quality Commission must follow the mandate of the Endangered Species Act (the Act). The Act is directly applicable to state governments as well as the federal government. The Act provides that any person may bring a civil suit to enjoin the United States or any other governmental agency which is in violation of any provision of the act or any regulations issued under the authority of the Act. [16 U.S.C. sec. 1540(g)(1)(A) (1982)].

The authorization of dioxin effluent discharge from the WTD Mill may violate the Endangered Species Act. The Endangered Species Act prohibits the "taking" of any endangered species [16 U.S.C. sec. 1538(a)(1)(B)]. The term "taking" is defined broadly to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" 16 u.s.c. 1532(19) (1982).

Any dioxins discharged into the Columbia River will combine with the already high concentrations of DDE and PCB's in the bald eagles to cause further reductions in the viability of the Lower Columbia River bald eagle population. The dioxins will exacerbate the current eggshell thinning and low reproductive success of the bald eagles. In a 1988 report, the Army Corps of Engineers concluded that DDE and PCB's found in nestling eagles were probably acquired from prey from the river ecosystem. "Ecology of Bald Eagles on the Lower Columbia River", Army Corps of Engineers, Portland District, Aug. 1, 1988. The Environmental Quality Commission must not authorize the WTD Mill permit because the nestling eagles will acquire the dioxins discharged from the mill in the same manner by which they acquired the DDE and PCB's. The resulting contamination is clearly the type of harm that falls within the Endangered Species Act's prohibition against "taking".

WILLAMETTE WEEK
WEEK OF SEPT. 21-27, 1989



It's a Dirty Job... and DEQ isn't doing it

By John Paul Williams

ONCE UPON A TIME, Oregon had a reputation as an environmentally conscious state.

This is the state that cleaned up the Willamette River, instituted the nation's toughest vehicle-emissions inspection program, and passed never-before-seen laws to reduce soot from woodstoves.

But that's all in the past.

Today, Oregon's reputation is quite different. Many other states are far ahead of ours when it comes to environmental awareness. For example, California requires sewage pumping plants on San Francisco Bay to maintain backup power supplies so an electrical failure won't cause a release of raw sewage. Oregon has no such requirement for sewage stations discharging effluent into the Willamette River. Washington has fined environmental polluters as much as \$150,000. Oregon's largest fine of an industrial violator was less than \$20,000.

Although there are plenty of people to blame for the current state of affairs—the governor and state legislators among them—most critics point the finger at the Department of Environmental Quality, the state agency that was created in 1969 to protect air, water and soil quality.

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It's a Dirty job...

Continued from page 1

Most Oregonians think of DEQ only as the agency that tests their car for compliance with pollution standards before they can register it. But it is also the agency that determines which toxic releases get cleaned up, how many parking places are allowed in downtown Portland, whether a company can build a smokestack, how much cow manure can flow into rivers, what type of woodstove is allowed in your home, when fields can be burned, whether a salmon at the supermarket has dioxin in its flesh, how a house may be torn down, and where you can dig a cesspool.

DEQ's eroding performance was blasted in a report filed in February by the Oregon Environmental Council, which said, "DEQ is not adequately enforcing Oregon's environmental statutes, despite ample statutory authority to do so."

If the agency is turning its back on the environment, some people think they know why. "After the downturn in the Oregon economy in the '80s, the agency crossed the Rubicon," says north Portland state Rep. Mike Burton. "DEQ determined that its mandate, spoken or unspoken, was to make certain that it would not close any business down. Things changed from the [Gov. Tom] McCall days, when the only concern was to protect the environment, to the current attitude: 'We need jobs; protect the environment only to the extent that it will not cost jobs.'"

This conflict in the agency's mission, between pressure for economic development and desire for environmental protection, is one of several problems that sap morale among its 430 harried but dedicated employ-



DEQ Director Fred Hansen: Tough enough?

ees as they enforce permits that limit air and water pollution at about 2,000 major industrial sites across Oregon.

Indeed, W.W. spoke with dozens of people, both inside and outside the agency, who paint a picture of the Portland-based DEQ as a department filled with skilled and committed people who have adapted to a bureaucratic culture of accommodation rather than confrontation. The result is an agency that sees itself less as an environmental watchdog than as a partner of industry.

According to its critics, DEQ has failed in its mission in a number of ways. The most troubling, these people say, are the agency's unwillingness to maintain high standards in

granting pollution discharge permits, its lack of independent air and water monitoring and its failure to punish companies that violate environmental regulations.

This means that Oregon corporations receive DEQ's permission to pollute more than other states would allow. Companies can violate the pollution laws knowing that the agency will rarely monitor the air and water. And if caught, the companies often receive less punishment than traffic offenders. The result of all this, says Joel Ario, director of the Oregon State Public Interest Research Group, is that "Oregon's standards are average, at best, on issues such as air pollution."

One DEQ employee is more critical. "It's a

sick agency," he says.

What follows are several examples of DEQ's lenient permit requirements, poor monitoring practices, and ineffective fine policies.

Perhaps no example better symbolizes the Department of Environmental Quality's shortcomings than the proposed WTD Industries pulp mill at Clatskanie, a small town 60 miles northwest of Portland on the Columbia River. The plant would be the first pulp mill built in Oregon in 20 years.

For the mill to operate, it first needs DEQ's permission to pump 4,000 tons of pol-

JOHN LUTCH

ENVIRONMENT

lutants into the air every year and to dump 19 million gallons of discolored water, tainted with everything from dioxin to wood wastes, into the Columbia every day.

Although the DEQ has yet to issue the permit, few doubt that it will. When it does, the agency will be allowing the operation of a

mill that would be illegal in many other states.

For example, the air contamination permit WTD is applying for would allow the pulp mill's power boiler to emit oxides of nitrogen at levels far higher than other states consider acceptable. Nitrogen oxides, a byproduct of

combustion, cause damage to the lungs.

WTD also is likely to benefit from DEQ's laxity when it comes to the mill's water quality permit. WTD's permit would require that the quality of the water it dumps into the Columbia be tested by taking a sample of the effluent, placing fish in the sample and moni-

toring the fish. According to the proposed permit, this would be done four times a year.

This system is highly inadequate. Compare it to pollution regulations in the Bay Area, where plants that release large amounts of contaminated water are required to test the

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Manager-As-Hero

A number of people are responsible for making sure that the Department of Environmental Quality enforces air and water standards. Certainly the governor, who appoints the five members of the Environmental Quality Commission, the board that oversees the operation of the agency, plays a crucial role. In the case of Neil Goldschmidt, it is a role that has come under a good deal of criticism, even from members of his own party. "The governor should be providing the leadership," says Democratic Rep. Mike Burton of Portland. "but Goldschmidt's orientation is different from [Tom] McCall's. Neil was a businessman before he was a governor; his constituency is businessmen. The governor is not an environmentalist—it's not his forte, his shtick." Others claim that the \$56,000 given to Goldschmidt and the Oregon Democratic Party since 1986 by WTD Chairman Bruce Engel is an example of how business is setting the state's environmental agenda.

The Legislature itself is also responsible. Past legislative sessions have been character-

ized by tough reviews of DEQ's performance. In recent years, however, that oversight has been missing.

But the man who is most responsible for the policy and operation of the department is its director, Fred Hansen, a moderate Republican who was appointed in 1985 to replace Bill Young.

The 42-year-old Hansen obtained his MA in history from the University of Oregon, then dropped out of the Ph.D. program at Johns Hopkins. He worked for two Republican congressmen, became a Peace Corps official, worked on a federal task force management study for President Carter, and served as a deputy state treasurer from 1978 to 1984.

Hansen is a tightly wound fellow who competed in swimming and football at Sunset High in Cedar Hills; he keeps his physique lean by jogging near his renovated northwest Portland Victorian home.

"I'm still single, but not available," grins Hansen, who has been dating Rep. Joyce Cohen (D-Lake Oswego) for more than five

years.

Hansen works long hours and has grasped the complex issues and engineering jargon that dominate environmental regulations.

Merlyn Hough, a DEQ engineer, is one of Hansen's admirers.

"I've gone to meetings with him expecting that he would refer discussions of technical issues to me, but he is able to handle those topics smoothly," says Hough.

Hansen also has assisted DEQ with his political skills. At budget time, Hansen has handled legislators as deftly as Minnesota Fats shooting a rack of billiard balls. During his tenure at DEQ, he has increased the agency's staff from 175 to more than 430, and the two-year budget has risen 150 percent since 1984 to \$60 million. Still, even though the agency has garnered impressive gains in budget and staffing levels under Hansen, DEQ has also lobbied to weaken or kill such environmental legislation as the recent toxic-reduction and odor-control bills and has not asked the Legislature for the funding needed to properly monitor air and water quality.

Instead, DEQ has obtained increased staff for new programs that some legislators resent as "empire building."

In March 1989 a Stanford Business School student did a study of the department and identified Hansen as a strong leader, but also called him a "manager-as-hero," criticizing his unwillingness to delegate authority. "The director has not allowed subordinates to do the practice requisite to develop their skill the agency has grown."

What this means, say former and current DEQ employees, is that the agency's direction is often determined by Hansen's hurried commands after receiving a phone call from a lobbyist or a legislator rather than by midlevel managers following an agenda of long-term public health concerns.

Hansen rejects the criticism. "It is not true that we are balancing environmental protection with economic considerations," he says. "We have rules that we are enforcing and a mandate to carry out."

—J.P.W.

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Continued from page 15

quality of their effluent constantly—they do this by continuously pumping the effluent through an aquarium stocked with test fish. If the fish die, the company must adopt corrective measures before discharging wastewater into San Francisco Bay.

Peter Russell, a water quality engineer who has worked in Portland, says that the kind of testing planned for WTD is not so effective as continuous monitoring. "Continuous sampling is superior," he says, "because the fish in the river are in constant exposure

to the discharge; so the testing should be continuous as well."

Although DEQ often allows Oregon industry to operate at pollution levels that other states would shy away

from, the agency has also been charged with less than rigorous monitoring of companies once they are given permits.

One example is that of Gould Inc., which for many years recovered lead from old car batteries at a site near the west end of the Burlington Northern railroad bridge.

DEQ was aware that the Gould site emitted high levels of dangerous air pollution. But the agency, as it does in most instances, asked the company to monitor itself. Not surprisingly, Gould's monitoring found that there was no cause for concern. At the same time, the federal Environmental Protection Agency was doing its own monitoring and discovered plenty to worry about. A Jan. 13, 1983, DEQ memo states: "A Gould consultant...indicated that lead levels had been reduced and no violations of the Oregon standards were observed. During the same period of time, an EPA consultant...obtained much higher results."

Even though the company consultant's

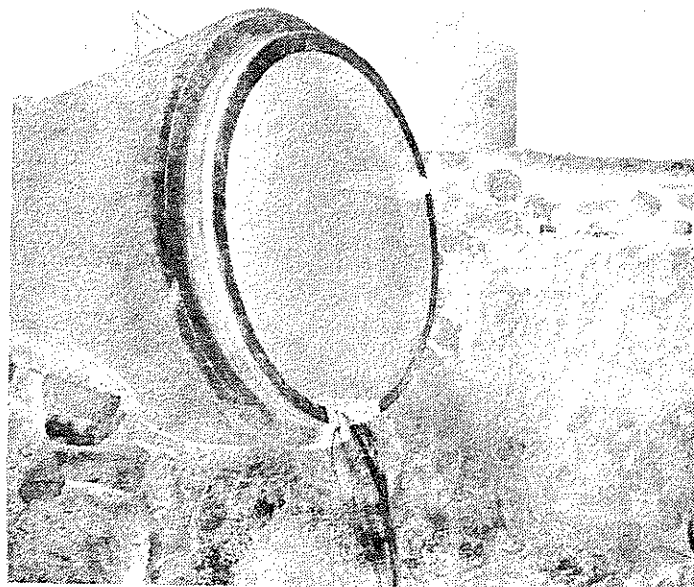
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results were contradicted by EPA's findings of lead pollution, DEQ did not attempt to resolve the disparity. Instead, the agency discounted the federal agency's findings. Finally, in 1984, EPA became so alarmed at Gould's lead contamination that the feds declared it a dangerous site eligible for Superfund cleanup money ("Portland's Toxic Armpit," *W.W.*, Aug. 8, 1985).

Another example of DEQ's haphazard monitoring involves the McCormick and Baxter Creosoting Co. plant near St. Johns. McCormick and Baxter, which recently filed for reorganization through Chapter 11 of the bankruptcy code, treats wood that is used for, among other things, telephone poles. The wood-preserving process uses a number of toxic chemicals, including arsenic and pentachlorophenol; the byproducts include dioxins and furans. These virulent compounds are regularly emitted into the atmosphere a few hundred yards from a densely populated

JOHN KICKER



neighborhood.

Because of complaints from neighbors and an increasing body of research that points to the danger of furans, DEQ decided last year to test the air around the McCormick and Baxter plant. But instead of sending one of its own people to monitor the company, DEQ asked McCormick and Baxter to monitor itself. The company set up sampling stations last summer. Three months later, before any meaningful results were compiled, the firm requested that it be allowed to abandon the testing program because the equipment had been vandalized. DEQ agreed.

Because the agency has a severely limited supply of monitoring equipment, it must depend on the corporate fox to guard the henhouse.

William Hutchison, who chairs the Environmental Quality Commission, the panel appointed by the governor to oversee DEQ.

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says he is concerned about the situation. "It's an important issue," says Hutchison. "We have to make sure that the agency develops good enough data to be able to make strategic decisions. The present lack of monitoring can be explained by the agency's shifting priorities and the workload on our field staff, but I don't really have a good answer."

When a company violates the conditions of its permit or breaks state environmental regulations, DEQ has a number of options. It can close the company down (something the agency has never done). It can go to court for an injunction to force the company into compliance (something the agency has rarely done). The most frequently used tool of the DEQ, however, is the fine. Even so, according to a number of critics, DEQ rarely fines violators and, when it does, levies penalties too small to effectively encourage future compliance.

"The problem is DEQ has never put a high priority on imposing penalties on industry."

Department records show that DEQ levied nearly \$170,000 in fines during the first eight months of 1989, in comparison with \$78,335 collected during all of last year. Though this amount represents a substantial increase, some suggest that it is still far lower than it ought to be. In addition, some of the fines have been forgiven. For instance, the city of Portland was fined \$5,000 for spilling millions of gallons of raw sewage into the Willamette during last year's Rose Festival, when thousands of people were boating and swimming in the river. But the penalty was waived on the condition that Portland embark on a one-year educational program about the sewer system.

To put the agency's record of fining violators in perspective, consider this: Environmental agencies in other states have fined single polluters as much as the DEQ has fined all violators during an entire year. For instance, California's Bay Area Regional Water Quality Board levied a \$150,000 fine

against U.S. Steel in 1987 for an acid spill in San Francisco Bay.

To its credit, DEQ has done a good job of fining some rule-breakers. For instance, Smurfit Newsprint was penalized \$16,800 last June because of the stench from its wastewater lagoons near West Linn.

But Lee Poe, a representative of the Odor Abatement Committee of the North Portland Citizens Committee, wonders why DEQ won't fine Portland Rendering, a company that systematically violates environmental regulations by producing odors that assault the nostrils of the integrated, working class neighborhood around the plant ("Raising a Stink," *W.W.*, Dec. 8, 1988). Poe says he knows why: "It's obvious: Money talks. Smurfit is in a much higher-rent district."

Hansen disputes allegations that DEQ treated Smurfit differently because it offended a wealthy neighborhood.

"Smurfit was a completely different case," he says. "Portland Rendering did not affect as

many people as Smurfit. It was not as noxious in the degree of smell or in the number of people affected."

In any event, Environmental Quality Commission Chairman Hutchison argues, fines are to be used as a last resort, and the agency's real goal is to "foster a greater spirit of cooperation between business and government."

Oregon Environmental Council Director John Charles retorts simply. "The problem is DEQ has never put a high priority on imposing penalties on industry."

This past legislative session, OSPIRG introduced a bill to reduce the use of toxic chemicals by industry and give DEQ the power to fine companies that failed to abide by their toxic reduction plans. In response, the DEQ offered its own toothless version of the bill with no provision for levying fines.

OSPIRG's Ario sums up the department's approach this way: "The DEQ style has been to provide technical assistance to industry, to offer carrots, not to levy penalties." The agency's position prevailed.

Of course, there's nothing wrong with assisting industry. But many companies have responded to the assistance by continuing to illegally discharge toxics into the air, dump poisons into the water, and leak hazardous wastes into the ground. It seems clear that, unless DEQ counters this harsh industrial record of violations with forceful penalties and stringent permit conditions, the state's precious environment will continue to deteriorate.

But given the agency's present stance, some question whether it will ever take action. Says one frustrated DEQ employee, "It will take a local version of Love Canal to wake people up."

PERKINS COIE

A LAW PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

U.S. BANCORP TOWER, SUITE 2500 • 111 SOUTHWEST FIFTH AVENUE • PORTLAND, OREGON 97204

TELEPHONE: (503) 295-4400

October 19, 1989

Hand Delivered

Mr. William P. Hutchison, Jr.
Chairman, Environmental
Quality Commission
c/o Tooze, Marshall, Shenker,
Holloway & Duden
333 S.W. Taylor Street
Portland, OR 97204

Dear Bill:

WTD Industries, Inc. would like to go on record as objecting to the letter from the Co-Chairs of the Joint Committee on Environment, Energy and Hazardous Materials requesting a delay in the Commission's decision on the WTD permit application. This is an unwarranted intrusion into the regulatory process. Our understanding is that the letter was drafted without consulting the members of the Committee. Given the fact that there have already been two hearings before the DEQ and, with Friday's hearing, there will have been three hearings before the Commission, it is difficult to see how this legislative process is designed to add anything further to the record. We believe that the Commission has adopted a very careful and open process designed to allow it to exercise the discretion that the legislature has given it. We urge you to exercise that discretion.

The Joint Committee is free to hold oversight hearings on whatever subject it chooses, but that should not delay a decision in this process. As we have said many times, the longer this process goes, the greater the likelihood that market conditions will change, rendering this project infeasible.

TELEX: 32-0319 PERKINS SEA • FACSIMILE (503) 295-6793

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Mr. William P. Hutchison, Jr.
Chairman, Environmental
Quality Commission
October 19, 1989
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This is not meant as any criticism of the process to date. As you know, WTD has been more than willing to spend the time necessary to create a record for the Commission to make its decision. From our standpoint, we have done everything that has been asked of us, and have met every condition imposed. What we are objecting to is unnecessary delay, particularly when it raised at the eleventh hour and in a manner that is not designed to add anything substantive to the process.

On behalf of WTD, we thank you for the opportunity to submit these views.

Very truly yours,

A handwritten signature in cursive script that reads "Patrick Parenteau". The signature is written in dark ink and is positioned below the typed name.

Patrick A. Parenteau

PAP/cab
1369w

cc: William W. Wessinger
Emery N. Castle
Genevieve Pisarski Sage
Henry Lorenzen



Save Our ecoSystems

10/13/89

Genevieve Pisanski-Sage
153 Granite St, No 2
Ashland OR 97520

Dear Mrs Pisanski-Sage

We are writing to urge you to act upon a very urgent matter. WTD Industries is planning to build a bleached Kraft pulp mill at Port Westward, Oregon, near Clatskanie on the Columbia River. We object to the establishment of this mill for several reasons.

Our most overwhelming concern is the chemical waste that is produced by pulp mills that use chlorine in their bleaching process - WTD Industries plans to build such a mill. The chlorine bleaching process produces dioxin, which is "the most potent animal carcinogen ever tested," according to the Environmental Protection Agency in 1988.

THERE IS NO SAFE LEVEL OF DIOXIN! It bioaccumulates in fish, wildlife and humans. It can cause:

- cancer,
- birth defects,
- liver damage,
- immune system dysfunction, and
- muscle wasting.

Dioxin has already been found in Columbia River fish. It is unconscionable to create more dioxin in our rivers. There are already pulp mills along the Columbia and these mills are, in fact, violating the EPA's water quality standards.

The planned WTD Industries dioxin-producing pulp mill would be in violation of:

- The Migratory Bird Treaty Act,
- The Bald Eagle Protection Act, and
- The Clean Water Act, among others.

The establishment of this mill would destroy 38 acres of precious wetlands and would probably drive away or sicken the nearby nesting bald eagles. The bald eagle is the symbol of these United States, yet it is already endangered as a species. What does a permit to poison the eagle symbolize?

- over -

THE OREGON ALTERNATIVE

Our organization distributes unbleached, 100% recycled paper (on which this letter is written and reproduced). We are experiencing a heavy demand for this environmentally sound and attractive paper, far beyond the supply we are able to obtain. If it were manufactured here in the Northwest, its price would come down thus increasing the demand even further. It makes no sense to us to continue deforesting the Northwest while endless tons of recyclable paper go to the overfull landfills.

We also feel that the use of chlorine bleach, and the creation of more dioxin is unnecessary as well as an environmental assault.

We feel that if unbleached recycled paper can be manufactured in Sweden and Germany, and other parts of the United States, it can be manufactured here in Oregon.

For life,

Jennifer Jones

Jennifer Jones

Barbara Kelley

Barbara Kelley

FACT SHEET

- TCDD dioxin, the most toxic synthetic chemical known, has been found in Columbia River fish. (1)
- Fish are the staple food of the breeding bald eagles along the Columbia River. Their eggs are still contaminated with metabolites of DDT which was banned 19 years ago. The eggshells are still too thin and they have a poor reproductive rate. (2) Add to this the even more hazardous TCDD dioxin, a mutagen, carcinogen, and teratogen.....
- Humans also consume fish. TCDD bioaccumulates.
- WTD Industries has applied for an Air Contaminant Discharge Permit to discharge: (3)
 - 430 tons of particulate matter, 38 tons of total reduced sulfur, 1032 tons of sulfur dioxide, 1696 tons of carbon monoxide, 834 tons of nitrogen oxide, 273 tons of volatile organic compounds, 16.3 tons of chlorine, and 16.6 tons of chloroform per year.
- WTD intends to destroy 38 acres of wetlands for its mill (4). One third of the endangered and threatened species have, or had wetlands as critical habitat. More than half of our nations's wetlands have already been destroyed.

.....

SOS (Save Our ecoSystems inc.) acknowledges and thanks the following organizations for their information and work on the WTD Mill proposal: Northwest Coalition for Alternatives to Pesticides (NCAP), Northwest Environmental Advocates (NEA), and Northwest Environmental Defense Center (NEDC).

(1) US Environmental Protection Agency (EPA), August 9, 1988 transmittal of the "Latest Data from the National Bioaccumulation Survey," with cover letter by Bob Jacobson, Region 10 Press Officer.

(2) Ecology of Bald Eagles on the lower Columbia River, US Army Corps of Engineers, Portland, OR , August 1988.

(3) NEDC Newsletter , summer 1989, page 7, Northwest Environmental Defense Center, 10015 SW Terwilliger Blvd., Portland OR.

(4) Northwest Environmental Advocates, Columbia River Action Alert, summer 1989, 408 Southwest Second Ave., Suite 406, Portland, OR.

United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington



September 14, 1989

Reply To
Attn of: WD-131

Lydia Taylor, Administrator
Water Quality Division
Department of Environmental Quality
811 S.W. 6th
Portland, Oregon 97204

Dear Ms. Taylor:

The purpose of this letter is to correct a statement I made in response to a question at the September 8, 1989, Environmental Quality Commission hearing. You will remember the discussion about the timing of issuing a permit for the WTD Mill and whether that permit would authorize discharge at the time the mill is ready to begin operation.

In response to one question I said EPA wouldn't object to a permit issued by DEQ, for example, in the next few months, as long as we had a commitment from the states of Oregon and Washington to follow through on individual control strategies (ICS) which would lead to water quality standards compliance no later than three years after approval of the ICS, or in no case later than June 4, 1993. As I said on September 8, I believe we have such a commitment now and that these strategies would in our best estimation reduce the dioxin level below the standard and also provide a comfortable reserve for future potential discharges.

In the related discussion on permit conditions I erred in giving the impression EPA would want to be assured the existing mills had completed their plant modifications as described in the ICS's before any new mill actually commenced operation and discharging treated wastes. Upon reflection, that requirement would be overly stringent and would be unfair to any new discharger.


When a regulatory agency (i.e., DEQ) issues a NPDES permit, the permittee should have the assurance this means a permit to actually discharge wastewater under terms of the permit language. It is the responsibility of the regulatory agencies to do the necessary calculations and adopt an appropriate strategy which leads to water quality standards compliance. We, collectively, need to account for any new dischargers through the waste load allocation and permitting process. Having now taken this first step, EPA would not object to a permit for a new source if the permit was consistent with agreed-upon

2

control strategies for water quality limited segments, including a waste load allocation which anticipated the new source. If any discharger doesn't comply with his load allocation and becomes responsible for a violation of water quality standards, enforcement actions would be appropriate against that discharger.

In summary, it would be EPA policy that if the Oregon DEQ issues a permit to the WTD Mill we will accept the fact that it is a permit to actually commence wastewater discharge when the mill is completed. We, of course, reserve the right to review other aspects of the permit for consistency with EPA regulations.

Very truly yours,



Robert S. Burd, Director
Water Division

cc: Ken Brooks, ODO
Craig Johnston, Esq.



Northwest Environmental Defense Center
10015 S.W. Terwilliger Blvd., Portland, Oregon 97219
(503) 244-1181 ext.707

August 1, 1989

Jerry E. Turnbaugh, P.E.
Water Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204

Re: WTD Port Westward Pulp Co. Proposed NPDES Permit

The Northwest Environmental Defense Center ("NEDC") remains outraged by the lack of data which is available on the water quality in the Lower Columbia River. The issuance of an NPDES permit to the Port Westward Pulp Co. without an understanding of the water quality in the Columbia River would be irresponsible and arbitrary.

In order for the Department of Environmental Quality ("DEQ"), the Environmental Quality Commission ("EQC") and the public to make a responsible and informed decision about this permit, NEDC urges DEQ to prepare and make available a report containing all water quality data, including data on sediments and fish, in the Lower Columbia River. This report should include the source of the data and the sampling techniques used to obtain the data. A comprehensive understanding of the available data on the water quality in the Lower Columbia River is an essential prerequisite to the issuance of an NPDES permit and a prerequisite to the development of TMDLs.

NEDC encourages the DEQ to comply with the Clean Water Act by ensuring that accurate and reliable TMDLs are developed for the Lower Columbia River before any additional discharges to the Columbia River are considered. The development of such TMDLs prior to the issuance of any new permits would be consistent with the policies outlined in Oregon's "New Approach" and in Oregon's 305b Report.

Once an understanding of the water quality of the Lower Columbia River is obtained through compiling existing data, gathering new data and developing TMDLs, the DEQ/EQC may consider the WTD Port Westward Pulp Co.'s application for an NPDES permit. However, no permit can be issued if there is no assimilative capacity in the Lower Columbia River. In other words, no NPDES permit may be issued so long as the Lower Columbia River remains water quality limited.

Jerry E. Turnbaugh, P.E.
Page Two

DEQ/EQC must not irresponsibly approve an increased waste load to a water-quality limited stream. Issuance of an NPDES permit based on the prospect that future technology may bring the Lower Columbia River into compliance is absurd and irresponsible. It is certainly unclear what happens if the WTD Westward Pulp Co. is built and then it is discovered that future technology is unable to achieve compliance. Will DEQ/EQC be willing to close down WTD or other existing plants to ensure that water quality in the Lower Columbia is protective of human health and the environment? If so, will DEQ/EQC be faced with a possible "takings" for which public funds must be used to pay just compensation? It certainly is possible that future technology (despite best intentions) may be unable to achieve compliance. What happens then....

NEDC urges DEQ and EQC to deny the issuance of an NPDES permit to WTD Port Westward Pulp Co. until accurate and reliable information is available to guarantee that the water quality in the Lower Columbia River has assimilative capacity available to handle increased discharges without risk to public health and the environment.

In addition, DEQ and EQC should deny the issuance of the NPDES permit until more specific information on the WTD Port Westward Pulp Co's discharges and the cumulative effects of these discharges is available.

Thank you for the opportunity to comment. We look forward to the availability of additional information on the water quality in the Lower Columbia River and additional information on the potential discharges from the WTD Port Westward Pulp Co.

Sincerely,

Cynthia L. Mackey

cc: EQC Members

INTRODUCTION

The DEQ's Addendum No. 2, dated October 5, 1989, and recently sent to the Commission, says that EQC rules should perhaps "be amended to give the Commission greater discretionary power in approving temporary overloads to water quality limited streams" and suggests that, given the time it will take to clean up current pollution in Oregon rivers, "the Commission can be severely restricted in applying its judgment to specific cases" under the current rules.¹ This is true. Both Oregon law and federal law do not give the "flexibility" to allow new polluters to add to the existing load of dirty rivers, and do not allow approval of the WTD Port Westward pulp mill permit.

Before it can approve a new discharge to the Columbia River, the Environmental Quality Commission (EQC or Commission) must be able to make an affirmative finding that the Port Westward Pulp Company (WTD Industries) pulp mill cannot cause a violation of any water quality standard on the Lower Columbia. Separately it must find that the mill will not impair any beneficial uses. These findings must be scientifically defensible and adequate to withstand court challenge. Such findings cannot be made by the Commission at its October 20 meeting.

Unfortunately, the DEQ Staff Report sidesteps the clarity of the state requirements under OAR 340-41-026 and other regulations, does not mention at all the applicable federal statutory requirement in § 301 of the Federal Clean Water Act,

¹ Addendum No. 2 at p. 6.

and focuses much of its attention on a separate federal statutory provision (§ 304(1)) of only marginal relevance to the decision that must be reached. Similarly, WTD Industries in its October 13 comments has missed the critical legal issues and provided no facts adequate for the Commission to make a legally defensible finding in favor of the permit.

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I. EQC CANNOT FIND THAT THERE IS NO THREAT TO BENEFICIAL USES ON THE COLUMBIA

In order to approve a permit for a major new water pollution source the Commission must be able to find that the new or increased discharge load "would not threaten or impair any recognized beneficial uses"² In its latest Addendum No. 2 to its staff report, the Department has simply stated that it "feels that there is no evidence that wildlife would be significantly threatened or impaired."³ This is not sufficient. Given current evidence, it is not possible to state that beneficial uses will definitely not be threatened. This is because the available evidence is, in fact, to the contrary.

A. Federal Agencies Assert That Beneficial Uses Will Be Harmed

Federal agencies have offered extensive comments to DEQ voicing their concern over the harmful effects that all organochlorines from the proposed mill, all dioxins, and TCDD in particular, will have on the beneficial uses in and around the river. We do not believe these federal objections have been shared with the Commission, so we are enclosing copies.

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA) have expressed concern that "fish downstream of bleached-kraft pulp mills are bioaccumulating

² OAR 340-41-026(3)(a)(B) (emphasis added).

³ J. Turnbaugh, Addendum No. 2 to July 21, 1989, EQC Staff Report, at p. 4, October 5, 1989 (emphasis added).

dioxins at levels that represent significant threats to human health, the environment, and fish-eating wildlife," and have recommended denial of the proposed draft NPDES permit.⁴

NOAA cites several areas of concern that were not relayed to EQC by DEQ in its extraordinarily brief summary of public comments in August of this year.⁵ NOAA criticizes the DEQ Evaluation Report for failing "to address the cumulative impacts that this pulp mill could have on the fishery resources of the Columbia River," noting that survival rates of coho salmon smelts on the Chehalis River, which receives discharges from two pulp mills, are half that on the Humptulips River, which receives no pulp mill effluent.⁶ These criticisms also include the fact that "important water quality parameters for the proposed mill are not well addressed," and that "[t]he proposed permit does not adequately monitor chlorophenolics," which are "highly toxic to aquatic life and are highly resistant to further chemical degradation."⁷

⁴ NOAA Letter to Jerry Turnbaugh, DEQ, July, 27, 1989 (NOAA Letter); USFWS Letter to Jerry Turnbaugh, DEQ, July 10, 1989 (USFWS Letter) (both attached as Exhibits A and B). This statement was not quoted by DEQ.

⁵ DEQ's summary of USFWS and NOAA comments is on pages A-10 to A-11 of the latest Addendum No. 2 submitted to the Commission on October 5. These pages are in the Addendum originally submitted to the Commission on August 29, 1989.

⁶ NOAA Letter at 1. This was not quoted.

⁷ Id. at 2. The DEQ summary only quoted one of those three statements, regarding monitoring, and not the other two. NOAA also calls for "[a] modelling study to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms . . . using worst case conditions," id. at 3, a

USFWS has also voiced other concerns which have not been identified to EQC. While recommending that "DEQ question the suitability of adding another pulp mill's effluent to the Columbia River," USFWS calls on DEQ "to consider requirements that all new pulp mills use technology that produces and discharges no dioxins."⁸ These comments are a result of USFWS concerns that "without evaluations of the effluent being produced and discharged, a reduction of effluent toxicity can not be assured."⁹ USFWS "request[ed] that the DEQ not issue the NPDES permit until additional information is provided."¹⁰ To date, DEQ has not provided the requested information, nor did DEQ in its summary of comments mention that USFWS has asked you to suspend processing of the permit.

There is no evidence that DEQ has seriously considered any of these agency comments. DEQ made only passing reference to these and other comments in its August 29th Addendum to the Commission.¹¹ Such a high degree of concern from federal agencies entrusted to protect recognized beneficial uses should

point DEQ quoted, but not with the context provided above to show the seriousness of the need for such a study before any permit is issued.

⁸ USFWS Letter at 2. This statement was not quoted by DEQ. Note that USFWS is asking that all 75 dioxins be prohibited, not just TCDD. DEQ is not proposing anything like this.

⁹ Id.

¹⁰ Id. (Emphasis added.)

¹¹ Addendum to July 21, 1989, Environmental Quality Commission Staff Report, August 29, 1989.

trigger a stricter scrutiny by the Commission of the parameters of concern.

B. Dioxin and Other Chlor-organics Will Adversely Effect Beneficial Uses

There is ample evidence to show that dioxin and other chlor-organics in the effluent from the proposed mill will adversely affect beneficial uses.¹² Studies done on fish exposed to dioxin have shown that the toxin is bioaccumulated at alarming rates. One such study finds that for some fish, the bioconcentration factor is as high as 159,000.¹³ This means that 159,000 times as much dioxin occurs within fish tissue as is found in ambient surroundings.

Another study has shown that exposing fingerling trout to 38 parts per quadrillion (ppq) of dioxin resulted in significantly reduced growth, significantly abnormal behavior, and significantly reduced survival.¹⁴

Other reports have documented an array of abnormalities in fish living downstream from bleached-kraft pulp mills, including

¹² See, for example, 2 EPA Studies Confirm Threat to Fish of Dioxin from Paper Plants, New York Times, March 14, 1989 (attached as Exhibit C). (The article erroneously stated that EPA was considering relaxing its dioxin standards. As we have pointed out elsewhere in this brief, EPA stated on March 15 (coincidentally, the next day) that that effort had been dropped.)

¹³ Memo from Philip M. Cook, Chief, Hazardous Research Branch, to Jim Cummings, Office of Assistant to the Administrator for Solid Waste and Emergency Response, Environmental Protection Agency, 2,3,7,8-TCDD in Aquatic Environments, February 4, 1987.

¹⁴ Mehrle, Toxicity of 2,3,7,8-tetrachlorodibenzodioxin and 2,3,7,8-tetrachlorodibenzofuran in Rainbow Trout, 27 Environmental Toxicology and Chemistry 47 (1987).

reduced gonad growth, liver enlargement, metabolic disturbances, impaired ionic balance, suppressed immune defense, vertebral deformities, decreased red blood cell numbers and blood hemoglobin concentrations, and increased amounts of methemoglobin.¹⁵ In the Great Lakes region the effects on fish and wildlife prompted an extraordinary two-nation call for action last week. Such compounds and effects must be studied on the Lower Columbia before the Commission can make a finding to allow this new pulp mill.¹⁶

The Bald Eagle and other fish-eating birds are a special type of beneficial use. We will address them under a separate heading, involving the Endangered Species Act.

C. EQC Must Be Certain That No Harm Will Occur Before It Allows This Mill

The "feelings" and "assumptions" of DEQ staff are not enough to allow EQC to make the required finding under OAR 340-41-026 of no impairment of beneficial uses. All EQC rules require it to err on the side of safety, and Oregon

¹⁵ See Larsson, Physiological Disturbances in Fish Exposed to Bleached Kraft Pulp Mill Effluents, 20 Wat. Sci. Tech. 67 (1988); Bengtsson, Sublethal Effects of Tetrachloro-1,2-benzoquinone--A Component in Bleachery Effluents from Pulp Mills--On Vertebral Quality and Physiological Parameters in Fourhorn Sculpin, 15 Ecotoxicology and Environmental Safety 62 (1988); Hardig, Long -Term Effects Of Bleached Kraft Mill Effluents on Red and White Blood Cell Status, Ion Balance, and Vertebral Structure in Fish, 15 Ecotoxicology and Environmental Safety 96 (1988).

¹⁶ See Fears Voiced for Great Lakes, New York Times, October 12, 1989 (attached as Exhibit D).

administrative law requires it to have substantial evidence of no possible harm before a new pollution source can be approved.

EQC rule OAR 340-41-025(2)(p) prohibits introducing toxic substances into state waters "above natural background levels . . . in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may bioaccumulate to levels that adversely affect public health, safety, or welfare; aquatic life; or other designated beneficial uses."¹⁷ EQC must prevent any discharge of dioxins or the 300 other chlorinated organic compounds unless shown that they will affirmatively not be harmful to beneficial uses. To this point, no such showing has been made, and allowing any additional dioxins or other fish-and wildlife-harming compounds to be introduced into the Lower Columbia will violate the rule.¹⁸

OAR 340-41-205(1)(i) states that "[t]he creation of . . . toxic or other conditions that are deleterious to fish or other aquatic life . . . shall not be allowed" in the waters of the lower Columbia River Basin.¹⁹ Fish and aquatic life are named

¹⁷ OAR 340-41-025(2)(p) (emphasis added).

¹⁸ EQC rules prohibit discharges which "in combination with other wastes or activities will cause violation" of toxic substances standards. OAR 340-41-205(2). This means that even if WTD's proposed pollution would, by itself, not violate the toxic standards established to protect aquatic life and beneficial uses, EQC still cannot approve the permit unless it can find that, when combined with the total load of dioxin in the Lower Columbia and with other compounds such as PCBs, the new discharge would not harm beneficial uses.

¹⁹ OAR 340-41-205(2)(i).

beneficial uses.²⁰ While noting in its report that the water quality "standard is self-explanatory in its purpose to prohibit the discharge of substances . . . that would be toxic to aquatic life," DEQ then mentions nothing more than possible impacts on "palatability of fish or shellfish."²¹ At a minimum, DEQ must address this issue and show that no toxic conditions deleterious to fish and aquatic life will exist as a result of the WTD plant effluent. This cannot be done on the basis of "feeling" and "assumptions." The burden of proof is on those proposing the mill to show safety for fish and wildlife, not on the DEQ staff to show harm.²²

To be adequate, EQC's findings must include "a clear statement of what, specifically, the decisionmaking body believes, after hearing and considering all the evidence, to be the relevant and important facts upon which its decision is based." Sunnyside Neighborhood League v. Clackamas County, 280 Or. 3, 21 (1977) (emphasis added). DEQ has not provided any facts upon which it has based its recommendation, but has merely

²⁰ See OAR 340-41-202, Table 1.

²¹ J. Turnbaugh, Evaluation Report for the Application for NPDES Wastewater Discharge Permit, at 27, June 5, 1989.

²² WTD argues in its proposed testimony to the Commission for October 20th that the beneficial use finding need not even be made, and that EQC is "bound" by the existence of a water quality standard for aquatic life to determine that this discharge will not threaten or impair such aquatic life. WTD letter at 9. This is absurd. OAR 340-41-026 is a separate and subsequently enacted rule requiring independent findings that are in no way decided by a water quality standard finding. Numerous EQC regulations and federal law require protection of beneficial uses in addition to compliance with water quality standards.

speculated to the Commission, in the face of overwhelmingly contrary evidence, that beneficial uses will not be affected. DEQ states that "[i]t has been generally assumed that treated pulp mill discharges do not have a demonstrated adverse effect on aquatic life, outside their allowed mixing zone."²³ On this assumption alone, DEQ has said that it "feels that there is no evidence that wildlife would be significantly threatened or impaired by WTD's new discharge."²⁴ This does not constitute the kind of facts and evidence needed for a finding under Sunnyside. Furthermore, when it makes its finding, EQC must "fully explain why [the required] facts lead it to the decision it makes."²⁵

²³ J. Turnbaugh, Addendum No. 2 to July 21, 1989, EQC Staff Report, at p. 4, October 5, 1989 (emphasis added).

²⁴ Id.

²⁵ Sunnyside, 280 Or. at 20, 569 (quoting The Home Plate Inc. v. OLCC, 20 Or. App. 188, 190, (1975)).

II. EQC APPROVAL OF THE WTD PERMIT WOULD VIOLATE EQC REGULATIONS AND FEDERAL LAW

In order to approve a permit the Environmental Quality Commission must find that the new or increased discharged load "would not cause water quality standards to be violated." The EQC cannot properly reach this finding required by OAR 340-41-026(3)(a)(A) and therefore cannot properly authorize the DEQ to issue the requested permit to WTD.

A. DEQ Documents Do Not Provide Evidence of Compliance With the Water Quality Standard, But Show the Opposite

The only evidence in existence shows the entire lower Columbia River to be several times over the water quality standard for 2,3,7,8-TCDD (dioxin). The only evidence in the record is that there are no enforceable reduction orders or compliance schedules to get the necessary 80+ percent reduction in total existing discharges from the other eight mills (plus the ones in Canada). The political imperative to get this mill approved has produced a rash of contradictory statements from DEQ -- some of them between different documents and some of them within a single document, namely the just-issued second Addendum to DEQ's staff report. But the fact remains that all evidence shows the Columbia River is not in compliance and no other mills on the River in the three states and Canada are under legally binding compliance orders that would achieve the massive reductions in TCDD necessary to bring the Columbia into compliance by the date this plant is proposed to go on line.

1. The River Is Out of Compliance

The standard for TCDD in the Columbia River is 0.013 ppq (parts per quadrillion). This is set so low because of the incredibly toxic nature of this compound. The DEQ, in its July 17, 1989, "Request for EQC Action" prepared for the July 21 meeting, said that "the Department finds that the discharge would not violate water quality standards, with the exception of TCDD."²⁶ In its rationale for its first alternative proposal it likewise admitted that, based on information from the EPA 104-mill study and its "best professional judgment":

TCDD levels in the Columbia River probably exceed the EPA Water Quality Criteria/EQC standard for TCDD.²⁷

Note that the DEQ was talking about the Columbia River, not some narrowly confined point on the river. The DEQ asked whether the WTD application should "be denied until the TCDD 'overload' in the Columbia River is removed."²⁸

This was followed a few weeks later by statements in DEQ's Columbia River TCDD Analysis (August 1989) admitting that "[t]he Columbia River has been identified as water quality limited for dioxin" ²⁹ The DEQ admitted that the entire Lower Columbia is five to seven times over capacity for dioxin and that

²⁶ EQC Request For Action, July 21, 1989, p. 2.

²⁷ Id. at 4.

²⁸ Id. at 7.

²⁹ Columbia River TCDD Analysis, August 1989, at p. D-2 (emphasis added).

enforceable requirements are not in place for the eight or more mills causing the problem. The DEQ calculated the overall target load necessary to achieve the 0.013 ppq water quality standard as 6-8 mg/day.³⁰ Citing the EPA 104-mill study jointly compiled by EPA and the pulp industry, the DEQ reported that the total load of TCDD currently discharged into the river is at least 43.3 mg/day.³¹ (The Analysis shows charts displaying the cumulative load.) Therefore, the Lower Columbia is at least five to seven times over the standard.³²

Now, in DEQ's "Addendum No. 2," dated October 5, 1989, in order to get the mill approved at the October 20 EQC meeting, the DEQ staff asserts that information about TCDD is not well enough known to state with confidence that, in its best professional judgment, that

the entire receiving stream or even selected stretches should be listed as either

³⁰ Id. at D-7.

³¹ Id. at D-6.

³² Id. at D-6. The DEQ analysis assumes that all the dioxin entering the river remains in the water column. Id. at D-5. The latest staff report prepared for the upcoming October 20 meeting, however, says that "some" of the TCDD "undoubtedly" goes into the sediment and aquatic biota. Addendum No. 2 at 4. The staff has not calculated how much that is, or what change it now feels should be made in the Columbia River TCDD Analysis. But all of this supposedly "attenuated" TCDD is not really disappearing, but moving into the very organisms that the standard seeks to protect -- fish and subsequently the humans who consume them -- we do not see how the staff can take comfort from this so-called attenuation to those target organisms!

confirmed or suspected of exceeding the TCDD standard.³³

This remarkable retreat by staff will doubtless be used immediately by the three companies challenging the Commission's listing of their stretches of the Columbia River in state court, but it has absolutely no new science or calculations to support it.

The only reliable evidence is DEQ's formal Columbia River TCDD Analysis (August 1989) that produced figures and charts showing the cumulative effect of eight mills on the river and concluded that it is 5-7 times over the standard.³⁴ The Department must actually still believe this, for it asserts that by 1992 the amount of TCDD from pulp mills in Oregon "will be reduced" and the amount from Washington pulp mill on the river "should be reduced" enough that the WTD discharge "would not then cause water quality standards to be violated."³⁵

³³ October 5, 1989, Addendum (No. 2) to July 21, 1989, EQC Staff Report at 4 (hereafter, Addendum No. 2).

³⁴ Even that analysis is limited and, to a certain extent, "back-of-the-envelope" in that it omits mills in Canada on the Columbia River and assumes actions by other states that are not at all assured.

³⁵ Id. The Department also indicates that it is "reviewing" its assessment of the Columbia and Willamette rivers and has been "requested" by someone (presumably the pulp and paper industry) to "reevaluate" the applicability of the 0.013 ppq TCDD water quality standard. Id. This implicitly recognizes that the current water quality standard is too stringent to be met by this mill in combination with the existing loads in the Columbia River. In the July 17 "Request for EQC Action" the DEQ was even more forthright, asserting that approval of the WTD permit would be based on recognizing "the lack of agreement on the appropriateness of the existing TCDD standard" and "that the standard is under review." Request for EQC Action at 5, Addendum

The amount of TCDD in the river either is not confirmed or suspected of exceeding the TCDD standard or it is; the Department cannot have it both ways. These kinds of contradictions show why cross-examination is often favored by lawyers. They also show that the Commission should invite public interest advocates and the company to dig into the evidence and the files more deeply and not be rushed to a snap approval on October 20 as WTD seeks.

2. No Legally Binding Orders Exist to Bring It Into Compliance

When all is said and done, there are not in existence the necessary legally binding orders directed to other pulp mills on the Columbia River that will "ensure" that the dioxin load in the Columbia is brought down by 80+ percent to make room for the WTD mill. In the August 1989 Columbia River TCDD Analysis the DEQ staff set out three scenarios, the most critical of which (Scenario II) assumed that Washington State would impose more stringent reductions than it has proposed. (It also must have assumed that EPA's Region X would impose such reductions for the State of Idaho. It ignored dioxins from Canada.)³⁶ The lack of legally adequate assurance was forcefully pointed out to the Commission at the previous meeting in September.

The most that the DEQ staff can now point to is a letter of September 14 from EPA's Water Quality Division Director to DEQ. DEQ's Addendum No. 2 quotes it as saying that EPA "would not

for October 20 meeting at A-23.

³⁶ Columbia River TCDD Analysis at page A-44 of Addendum No. 2 submitted to the Commission.

object to a permit for a new source" under certain conditions.³⁷ Those conditions include "a waste load allocation which anticipated the new source."³⁸ Of course, no such waste load allocation has been legally enacted by Oregon or other jurisdictions. The EPA letter goes on to say that he would not object if "we had a commitment from the states of Oregon and Washington to follow through on individual control strategies (ICS) which would lead to water quality standards compliance no later than three years after approval of the ICS, or in no case later than June 4, 1993."³⁹ Leaving aside whether a vague "commitment" is legally sufficient for purposes of section 301 of the Clean Water Act and for the Commissions's rules (it is not), it should be noted that there is no evidence that the ICS's actually adopted by the State of Washington contain the stringent provisions (such as 10 ppq in the bleach plant effluent) that are necessary to attain the water quality standard according to the DEQ's Columbia River TCDD Analysis.

The EPA letter says, "I believe we have such a commitment now."⁴⁰ Such a "belief" is not sufficient under EQC's own rules or under other federal and state laws and regulations. Either Washington and EPA have adopted permit conditions that are legally enforceable and that limit dioxin in bleach plant

³⁷ Addendum No. 2 at 7, quoting letter from Bob Burd.

³⁸ Id.

³⁹ Burd letter at 1.

⁴⁰ Letter at 1.

effluent for all pulp mills on the Columbia River system or they have not. Since there is no evidence that such legally adopted conditions are in place, the Commission has no choice but to delay any approval of this discharge until such adoptions occur -- and if legal challenges are filed (as they have been in Oregon) EQC must take account of the likely compliance dates after all legal challenges have been resolved.⁴¹ The "margin of safety" and "ensure" language in the various applicable laws and regulations do not allow DEQ, EPA, or EQC to make unrealistic and "best case" assumptions about clean-up of the river in order to issue a permit to yet one more pulp mill.

Despite all the evidence that the Columbia is 5-7 times over the standard, the DEQ tries to create an air of uncertainty and then proceeds as if, in order to deny a new discharge of water pollutants, the EQC must have absolute proof that the river is in violation and must make a finding that the new dioxin would cause

⁴¹ Three mills, Pope and Talbot, James River II, and Boise Cascade, have sued DEQ seeking to be removed from the 304(1) short list which compels those mills to eliminate detectible levels of dioxin by June 4, 1992. See DEQ's "Facts About the Columbia River and WTD," September 1, 1989.

Even if effluent standard compliance schedules under § 307 or individual control strategies under 304(1) had been promulgated for all the offending mills, § 509(b) of the Clean Water Act states that any persons or businesses affected by such action may apply for review within 120 days from the date of the determination. Hence, DEQ cannot comply with requirement set forth in 301(b)(1)(C) that there shall be achieved any necessary limitations to comply with state established water quality standards until both an enforceable basin wide compliance schedule has been promulgated and the 120 day appeal limit has passed before even considering whether a discharge may be permitted.

the water quality standards to be violated. This is upside down. The regulation properly says the opposite. In order to approve a new discharge under OAR 340-41-026 the Commission must be able to find reliably that the river is clean, or will be made so by binding compliance orders,⁴² and must be able, on the basis of substantial evidence, to make a finding that the new dioxin load "would not cause" water quality violations. The burden of proof is on the permit applicant and the staff, as we will discuss next.

B. The EOC Is Legally Required to Err on the Side of Safety

Under the wording of OAR 340-41-026, even if the Commission were to conclude that the water quality standards might not be exceeded with the new mill, that would not be enough to allow the mill. The regulation requires an affirmative showing that the load "would not" cause exceedances. Not only is the burden of proof on those who would propose a new discharge, it is indeed "proof" that they must provide. This requires convincing evidence, not speculation and feelings.

The state and federal laws were consciously drafted in this way, as have been most of the federal environmental laws in our nation. Even the Addendum to the staff report recognizes this on

⁴² We reserve the right to argue in any subsequent proceeding that the river must be clean at the time of permit issuance, but merely point out now that neither test is met.

page 1, where it asks, "How should we go about seeking to ensure that [the water quality of the Columbia] is protected?"⁴³

The "err on the side of safety" approach runs throughout EQC's regulations, none of which DEQ staff or WTD seem to be mentioning to the Commission in recent filings. OAR 340-41-205(2)(p), applicable to the Lower Columbia River, states:

Levels of toxic substances shall not exceed the most recent criteria values for organic and inorganic pollutants established by EPA and published in Quality Criteria for Water (1986).⁴⁴

In addition, OAR 340-41-120(3) states that adequate controls

to insure compliance with the water quality standards

shall be provided in permits for sources or activities.

(Emphasis added).

EPA regulations contain the same requirements to "insure" attainment of water quality standards. They say that no permit can be issued to a new source:

[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states.⁴⁵

Moreover, the state permitting authority "shall ensure" that

The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies

⁴³ Addendum No. 2 at 1 (emphasis added).

⁴⁴ OAR 340-41-205(2)(p)(B).

⁴⁵ 40 C.F.R. § 122.4(d) (emphasis added).

with all applicable water quality standards.⁴⁶

Such an approach to pollution prevention is woven into the very fabric of our environmental laws. As a court of appeals stated in the famous Ethyl case, involving EPA's regulations to reduce lead in gasoline, "the very existence of such precautionary legislation would seem to demand that regulatory action precede, and optimally prevent, the perceived threat."⁴⁷ The federal pesticide laws are similarly precautionary in nature, as another Court of Appeals case noted in quoting a Congresswoman:

The burden of proof should not rest on the Government, because great damage can be done during the period the Government is developing the data necessary to remove a product which should not be marketed.⁴⁸

In a case concerning air quality standards, the Court of Appeals upheld the federal EPA's rejections of the State of Texas' inadequate plans for compliance with air quality standards. The state initially had "supplied no theoretical or empirical support for its novel model" and later provided inadequate support. The court pointed out:

⁴⁶ 40 C.F.R. § 122.44(d)(vii).

⁴⁷ Ethyl Corporation v. EPA, 541 F.2d 1, 13 (D.C. Cir. 1976) (en banc) (emphasis added).

⁴⁸ Environmental Defense Fund v. Ruckelshaus, 439 F.2d 584, 593 n.34 (D.C. Cir. 1971) (overturning a federal agency's failure to suspend a federal pesticide registration when some evidence existed of risk to human health).

The statute requires implementation plans which will insure attainment of the national air quality standards.⁴⁹

The finding that EQC would have to make before approving the WTD proposal must be based on the precautionary nature of the water quality standards program, and must show strong confidence through demonstrable evidence that the Columbia will be cleaner than the water quality standards. This cannot be done without reviewable scientific calculations to support the finding.

C. Federal Law and Regulations Require Permits to "Ensure" Water Quality Attainment

In their most recent, as well as earlier, documents the DEQ and WTD have made no mention of § 301(b)(1)(C) of the federal Clean Water Act, focusing attention instead on § 304(1), which is of marginal, if any, relevance to the WTD permit application. Section 304(1) relates to strategies for cleaning up toxic pollutants, but in no way provides an exception to the uncompromising mandate that a permit must be able to ensure compliance with water quality standards from it and other sources.

⁴⁹ State of Texas v. EPA, 499 F.2d 289, 301 (5th Cir. 1974) (emphasis added).

Federal law, which EQC and DEQ must abide by,⁵⁰ is uncompromising regarding water quality standard compliance. Section 301(b)(1) states that in NPDES permits there shall be achieved effluent limitations for point sources which "shall require" "any more stringent limitation, including those necessary to meet water quality standards."⁵¹

These requirements to meet water quality standards are not discretionary matters but mandatory ones. The House Committee Report preceding the enactment of the Clean Water Act in 1972 shows that, in addition to national feasibility-based guidelines, Congress intended that the permitting authority must apply any other measures necessary to attain recognized water quality standards:

the Committee intends that if the sum of the discharges from point sources meeting such effluent limitations would preclude the meeting of water quality standards . . . new and more stringent effluent limitations would have to be established consistent with such water quality standards.⁵²

The Senate Committee likewise stated:

⁵⁰ OAR 340-45-015(5)(c); OAR 340-45-035(1). Oregon rules also state that any recommendations regarding the issuance or denial of a NPDES permit must be:

developed in accordance with provisions of all applicable statutes, rules, regulations, and effluent guidelines of the state of Oregon and U.S. Environmental Protection Agency. OAR 340-45-035(1) (emphasis added).

⁵¹ 33 U.S.C. § 1311 (emphasis added).

⁵² H. Rep. No. 911, 92d Cong., 2d Sess. 101-02 (1972) (emphasis added).

whenever the Administrator determines that application of the best practicable treatment requirements . . . will not provide for implementation of existing water quality standards for interstate or intrastate streams, he must tighten the requirements against a source of discharge or a group of sources.⁵³

The Congressional language ("have to be established" and "must tighten") is consistent with the strong mandatory nature of the statutory language itself ("shall require").

DEQ and WTD seem to believe that § 304(1) allows a more relaxed time schedule than previously required by § 301 and the EQC's own rules. But § 304(1) did not supersede old water quality standards requirements. Addressing the slow pace at which EPA was promulgating best available technology standards for toxic substances, the Senate Committee, in the 1985 Clean Water Act hearings, stated that while it was devising new provisions for control of toxic discharges such as TMDLs, the 304(1) lists, and Individual Control Strategies, "[t]he water quality standards regulations currently in effect are strongly supported by the Committee."⁵⁴ The requirement that the permitting authority achieve any more stringent limitations

⁵³ S.Rep. No. 414, 92d Cong., 1st Sess. 44 (1971) (emphasis added).

⁵⁴ S.Rep. No. 99-50, 99th Cong., 1st Sess. 3 (1985). The Senate also said, in words clearly applicable to the pulp mill dioxin problem and Oregon's past success in making certain rivers fishable over the last 20 years, "it is indeed ironic that we must now warn people against consuming fish caught in many areas cleansed of conventional pollutants but still contaminated with toxic pollutants." Id. at 3.

necessary to attain water quality standards is not diluted by the Act's more recent provisions.

The DEQ's Addendum No. 2 suggests that the Commission should consider amending its rules to achieve more flexibility for "temporary" overloads, and in any event allow WTD several years before imposing strict requirements to achieve the water quality standards on the entire river. The Senate Committee went on to say this about the existing high-quality waters:

. . . Since standards assure continued progress toward the Act's goal, it would make little sense to allow deviations, however limited or temporary, from these judgments concerning the health and welfare of people

. . . . If economic effects truly are substantial and widespread, then a downgrading of standards may be justified, But this is a considered community wide decision to forgo higher beneficial uses of a water way, and must not be made in the narrow context of a source-specific variance.⁵⁵

This is precisely what the DEQ staff proposal, from July 17 to the present, asks the Commission to do.

⁵⁵ Id. at 6 (emphasis added).

III. AN EQC DECISION TO APPROVE WTD'S DISCHARGE REQUEST WILL VIOLATE THE ENDANGERED SPECIES ACT

A special case of a beneficial use is America's national symbol, the Bald Eagle. The eagle is listed as endangered or threatened in every state in the U.S. outside Alaska. Approval of the proposed permit by the Environmental Quality Commission will degrade the habitat of Bald Eagles, resulting in their injury or death and potentially disastrous effects on their populations. This will constitute a violation of the Endangered Species Act, which applies to state or federal government agency decisions.

A. Issuance Of A Permit Will Endanger Bald Eagles On The Lower Columbia River

Federally-protected Bald Eagles will be adversely affected by the toxic discharges that an approved permit would allow. Bald Eagles are listed as threatened in Oregon under the Endangered Species Act. Bald Eagles occupy an estimated twenty-five nests on the lower Columbia River, including one directly across the river from the Port Westward site. Eagles along the lower Columbia are already experiencing disturbing declines in reproduction rates because of deformed embryos and eggshell thinning.⁵⁶ Evidence from recent studies along the lower Columbia associates chlor-organic compounds DDT and PCB contamination with these deaths. What happens to other fish-eating birds is additional evidence of danger to eagles.

⁵⁶ "Bald Eagle Reproduction Down", The Register-Guard, September 20, 1989, (attached as Exhibit E).

Canadian biologists suspect dioxin from a pulp mill of wiping out every egg in a nearby great blue heron colony just to the north of here.⁵⁷ Studies in the U.S. also link low reproduction of cormorants and herring gulls to such contamination.⁵⁸ Increased exposure of Bald Eagles on the lower Columbia to any additional dioxins will increase the harm to eggs that is already occurring.

B. The Endangered Species Act Prohibits The EQC From Taking Any Federally-Protected Species

The Endangered Species Act⁵⁹ (ESA) prohibits all persons subject to United States jurisdiction from taking any wildlife species listed as endangered or threatened.⁶⁰ Under the ESA, "person" means "any officer, employee, agent, department, or instrumentality . . . of any State" ⁶¹ The EQC is a statutorily-created state entity,⁶² and therefore, its actions are subject to the prohibitions of the ESA.

⁵⁷ "Wipe-out of Heron Eggs Linked to Dioxin," Times Colonist, September 11, 1987 (attached as Exhibit F).

⁵⁸ "Bald Eagle Reproduction Down", The Register-Guard, September 20, 1989 (attached as Exhibit E).

⁵⁹ 16 U.S.C. §1538(a)(1)(B) (1982).

⁶⁰ See § 1538(a)(1)(B) (endangered); § 1533(d) (threatened). The EQC's responsibility will also be affected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, both of which mandate similar protective stances by persons and agencies. In addition, Oregon's own Endangered Species Act mandates such protections. All are likely to be violated by approval of a permit.

⁶¹ § 1532(13).

⁶² ORS 468.010

The ESA defines "take" as including "harm."⁶³ The U.S. Fish and Wildlife Service (USFWS) defines "harm" to include

significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.⁶⁴

Several courts have held that a state or federal agency can violate this "taking" definition through actions other than those directly causing physical injury.

In Palila v. Hawaii Dep't of Land & Natural Resources,⁶⁵ the U.S. Court of Appeals for the Ninth Circuit found that the ESA required it to enjoin a state agency from continuing to manage game animals on land that served as habitat for a protected species. There, the grazing habits of the animals maintained by the agency degraded lands critical to the endangered Palila bird. In its ruling, the court noted that there is no immediacy requirement in the ESA's "taking" prohibition.⁶⁶ An activity which could harm a protected species in the future -- for example, encroachment on critical habitat or adversely affecting a species' food source -- could amount to a taking.⁶⁷

⁶³ § 1532(19).

⁶⁴ 50 C.F.R. § 17.3. (1987).

⁶⁵ 852 F.2d 1106 (9th Cir. 1988).

⁶⁶ Id.

⁶⁷ Id.

In National Wildlife Federation v. Hodel,⁶⁸ the U.S. Fish and Wildlife Service (USFWS) authorized the use of lead shot ammunition by hunters, which resulted in secondary poisoning of Bald Eagles. The court held FWS's authorization constituted a taking under the ESA.⁶⁹ In Defenders of Wildlife v. Administrator, EPA,⁷⁰ a case decided by a U.S. Court of Appeals since the public hearings and the EQC's first meeting on this pulp mill permit, endangered species had eaten strychnine bait, either directly or indirectly, and died as a result. Strychnine can be distributed only if it is registered by the EPA under the Federal Insecticide, Fungicide, and Rodenticide Act.⁷¹ The court concluded:

the EPA's decision to register pesticides containing strychnine or to continue these registrations was critical to the resulting poisonings of endangered species.⁷²

The court held the EPA's registrations constituted takings of endangered species.⁷³

The discharge proposed in this permit will introduce dioxin, di-benzo furans, and other highly toxic organo-chlorine compounds into Columbia River fish species. The Bald Eagle's diet includes

⁶⁸ 23 Env't Rep. Cas. (BNA) 1089 (E.D. Cal. 1985).

⁶⁹ Id. at 1092-93.

⁷⁰ 1989 U.S. App. LEXIS 12232 (8th Cir. 1989).

⁷¹ Id. at screen *2.

⁷² Id. at screen *18 (emphasis added).

⁷³ Id. at screen *18.

a significant fish component. Indeed, the DEQ's October 5, 1989, Addendum No. 2 to its staff report explicitly admits that some dioxin in the Columbia River is "undoubtedly" transferred to sediment and some "is conveyed to aquatic biota,"⁷⁴ from which it moves into fish. Dioxin bioaccumulates. In consuming contaminated fish, eagles themselves are contaminated. As pointed out above, documented evidence shows that Bald Eagles residing on the lower Columbia River are already experiencing significant reproductive failure due to eggshell thinning, associated with organo-chlorine exposure. (Dioxin is an organo-chlorine.) Therefore, an EQC decision to authorize issuance of this permit will result in a taking of a protected species. The Endangered Species Act prohibits such a decision by the EQC.⁷⁵

⁷⁴ (p.4)

⁷⁵ Furthermore, if the EQC grants permit approval, the threat of violating the ESA will also fall upon the EPA and impose upon EPA a duty to veto the permit. Section 7 of the ESA and implementing regulations require the EPA Regional Administrator to ensure that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered species or adversely affect its critical habitat. ESA § 7(a)(2), 16 U.S.C. § 1536(A)(2); 50 C.F.R. § 402 et. seq.

IV. DEQ HAS VIOLATED OREGON AND FEDERAL PUBLIC NOTICE LAWS AND REGULATIONS

DEQ has violated several State and Federal laws that are mandatory parts of the public notice and comment process. None of the notices issued by DEQ mentions the existence of a Fact Sheet, which is a direct violation of both Federal and State regulations. Furthermore, the Fact Sheet that has been provided to us by DEQ does not contain the information for the public that is required by the regulations to be in the mandated Fact Sheet. As a consequence, the procedures leading to the current EQC decision-making process render any prospective decision invalid. The process must be initiated anew.

A. DEQ'S Public Notices Have Been Deficient

DEQ's failure to mention the existence of a Fact Sheet in its public notices violates both Federal and State regulations. According to Oregon legal requirements, "any public notice and fact sheet shall be prepared and circulated consistent with the requirements of regulations issued under the Federal Act."⁷⁶

The federal regulations which are binding on DEQ are promulgated under the authority of § 304(i) of the CWA.⁷⁷ Any State program approved by the EPA Administrator must at all times be conducted in accordance with requirements of the pertinent parts of the federal regulations.⁷⁸

All public notices issued in accordance with federal regulation 40 C.F.R. § 124 must contain the following minimum information: "name, address, and telephone number of the person from who interested persons may obtain further information including copies of the draft permit, statement of basis or fact sheet," and a brief description of the comment procedures required by §§ 124.11 and 124.12.⁷⁹

⁷⁶ OAR 340-45-035(6).

⁷⁷ See discussion in 40 C.F.R. § 123.1(b).

⁷⁸ 40 C.F.R. § 123.1(f). The Clean Water Act likewise mandates that State permit programs shall at all times be in compliance with the Clean Water Act and EPA guidelines promulgated pursuant to § 304(i)(2) of the Act. 33 U.S.C. § 1342(c)(2), CWA § 402(c)(2). Section 304(i)(2) establishes the minimum procedural requirements with which State programs must comply, including procedures to make information available to the public.

⁷⁹ 40 C.F.R. § 124.10(d)(1)(iv), (v) (emphasis added).

Oregon regulations require that "in order to inform potentially interested persons of the proposed discharge and of the tentative determination to issue an NPDES permit, a public notice announcement shall be prepared and circulated in a manner approved by the Director."⁸⁰ This notice "shall tell of public participation opportunities, shall encourage comments by interested individuals or agencies, and shall tell of the availability of Fact Sheets, proposed NPDES permits, applications and other related documents available for public inspection and copying."⁸¹ Although a Fact Sheet was eventually created, its existence was not disclosed to the public as required.

DEQ issued two notices regarding the WTD pulp mill NPDES permit. The first notice entitled "Chance to Comment On . . . Draft of Public Hearing Notice" was issued on June 6, 1989 (Exhibit G). There was not even a Fact Sheet in existence at that time. On July 10, DEQ issued a subsequent notice extending the public notice and comment period to August 1, 1989.⁸² None of the notices informed the public that a Fact Sheet was available, as required by 40 C.F.R. § 124.10(1)(d)(iv) and OAR

⁸⁰ OAR 340-45-035(3).

⁸¹ Id. (emphasis added).

⁸² Exhibit H. In addition, DEQ published a notice of a public hearing in the Clatskanie Chief, on July 6, 1989 (Exhibit I), and sent a news release on June 26, 1989, to several newspapers in the Portland area and all the media in Columbia and Clatsop County about the public hearing (Exhibit J). They said nothing about any Fact Sheet.

340-45-035(3).⁸³ Making the public aware of the existence of a Fact Sheet is critical in order to alert the public of critical resource issues involved in the decision to be made and to allow for meaningful and intelligent comments as underscored by the EPA in previous permitting processes.

In associated regulations under the Resource Conservation and Recovery Act, the federal Environmental Protection Agency has discussed the central role of Fact Sheets. They are "to explain the basis for any permit condition and thus allow meaningful public comments on the draft permit."⁸⁴

The purpose of draft permits and fact sheets is to inform the public and the regulated party (and EPA in the case of State-issued permits) of the restrictions. This information is needed so that interested parties can comment intelligently on what the agency proposes.⁸⁵

The failure of DEQ to inform the public of a Fact Sheet (which was later drafted) has not permitted the public to judge the adequacy of the permit or submit meaningful and effective comments, thereby rendering the process defective. It is also a procedural violation that can only be cured by a renewed opportunity for public comment.

⁸³ The first refers to some other related documents, but not to the (non-existent) Fact Sheet. The "Evaluation Report" is not a Fact Sheet and is not identified as such.

⁸⁴ 53 Fed. Reg. 7642 (1988).

⁸⁵ 54 Fed. Reg. 18716 (1989).

B. The Contents of the "Fact Sheet" Provided Last Week Does Not Comply With Regulations

DEQ has recently provided us with a document labeled Fact Sheet and dated July 6.⁸⁶ Apart from not being previously made available to the public as required, it does not comply with federal regulations requiring that the Fact Sheet "shall briefly set forth the principal facts and the significant factual legal, methodological and policy questions considered in preparing the draft permit."⁸⁷ Neither does it meet the necessary requirements of OAR 340-45-035(4).

A fact sheet for each NPDES general permit must include:

b) the type and quantity of wastes to be discharged; c) applicable standards and guidelines used as a basis for effluent limits.⁸⁸

DEQ's Fact Sheet fails to adequately describe "the type and quantity of wastes to be discharged."⁸⁹ It discusses the presence of 2,3,7,8-tetrachloro-dibenzo-p-dioxin as a recognized pollutant in effluent from bleached kraft pulp mills, but not the fact that there are some 300 different toxic and potentially toxic organochlorine compounds coming out of bleached kraft pulp mills, including additional dioxins aside from 2,3,7,8-tetrachloro-dibenzo-p-dioxin, and furans (toxicologically identical to dioxin). Neither are disclosures of "quantity"

⁸⁶ See Exhibit K.

⁸⁷ 40 C.F.R. § 124.8.

⁸⁸ OAR 34-45-035(4)(a)-(e).

⁸⁹ OAR 34-45-035(4)(b).

made. The Fact Sheet also does not discuss the "applicable standards."⁹⁰ The Fact Sheet also does not address the cumulative effects of additional dioxin, PCB's, and other chlorinated organic compounds on fish, wildlife, and public health.

In addition to meeting the requirements of 40 C.F.R. § 124.8, Fact Sheets must contain "any calculations or other necessary explanation of the derivation of specific effluent limitations and conditions, including . . . an explanation of how the alternate effluent limitations were developed."⁹¹

The Fact Sheet merely states that DEQ has calculated the water quality standard at the edge of the mixing zone, and that the levels in the effluent would have to be "less than detectability."⁹² It does not provide any "calculation" or "other necessary explanation of the derivation" of the amount of dioxin allowed. In fact, it does not state what amount of dioxin will be present in the plant's effluent. This and all other documents simply claim that WTD will be using the latest technology and methodologies and will do their utmost to reduce the amount of dioxin coming out of the plant. That does not comply with 40 C.F.R. § 124.56(a).

⁹⁰ We recognize that an "Evaluation Report" does so, but this cannot substitute for the required Fact Sheet, which must be clearly labeled as such.

⁹¹ 40 C.F.R. 124.56(a).

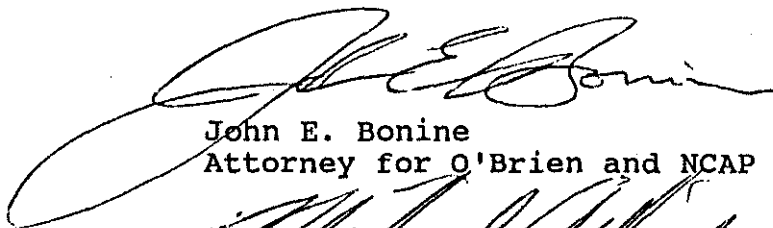
⁹² Id. at 3.

Conclusion

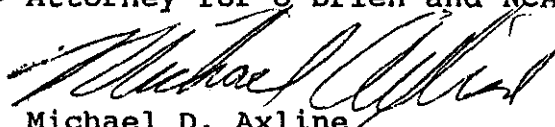
For the reasons stated above, approval of a permit for the Port Westward pulp mill at the Environmental Quality Commission on October 20, 1989, would be legally invalid. In addition, as forcefully pointed out by Federal agencies, by the Oregon Salmon Commission, by Indian interests, by ordinary citizens, by citizen groups, and by our client Dr. Mary O'Brien, approval would be unacceptably poor public policy.

The Commission would serve the people of Oregon best by taking a pause and initiating an independent look into the factual, policy, and legal issues raised by the proposed release of a significant new volume of chlorinated organic compounds into Oregon's environment. A decision can be made in an instant. The consequences will be with us and our children for decades.

Respectfully submitted,



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NORTHWEST ENVIRONMENTAL ADVOCATES



October 19, 1989

William Hutchison, Chair
Environmental Quality Commission
811 S.W. 6th
Portland, Oregon 97201

Dear Commission Hutchison:

This letter is intended to briefly address the questions raised by the Commission at its September 8, 1989 meeting. We respect the difficulty of the decision that the Commission must make as it struggles with a somewhat ambiguous regulatory framework and facts which are characterized more by their absence than their presence. We are encouraged by the Commissions's eagerness to understand these complex issues. This letter is intended to supplement the analysis presented in our previous letters.

To help you with your consideration of the major new discharge related to this permit, we explain below that the Lower Columbia River is water quality limited and that this fact restricts the Commission's ability to approve the new discharge and issue a new NPDES permit. Moreover, the Commission is prohibited from granting conditional approval because its rules do not allow and the facts do not support such an action.

We begin by reiterating at the outset two simple but critical points which we believe the Applicant -- WTD Industries -- and the Department of Environmental Quality (DEQ) continue to misrepresent. First, while WTD's commitment to state-of-the-art technology is commendable, it is also irrelevant, insofar as the proposed mill will be discharging into a water quality limited stream. This is because Oregon has adopted a water quality control program, in lieu of a technology-based regulatory program. With this new regulatory philosophy, the state is not aiming for use of the best available technology; instead it is attempting to actually meet established standards for a clean environment.

Second, as the DEQ staff points out, and as was discussed in our September 6th letter, it is one thing to have a strategy planned or even in place which will bring the river into compliance with water quality standards and quite another to have actually met the standard. DEQ Staff Report Addendum for the October 20th meeting, at page 6. This latter issue will be discussed further below.

Once the Commission has concluded that the Lower Columbia River is or may be water quality limited, an NPDES permit may not be issued pursuant to OAR 340-41-026. Instead the Total Maximum Daily Load (TMDL) process must be invoked, Waste Load Allocations (WLA's) made, and water quality standards actually

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achieved. To do otherwise renders the standards themselves mere goals and the TMDL/WLA process meaningless.

I. THE LOWER COLUMBIA RIVER IS WATER QUALITY LIMITED

The Lower Columbia River is identified as water quality limited for dioxin by Oregon's 305(b) report, by the 304(1) listing process and by DEQ's Oregon Environmental Atlas. It is also identified as water quality limited for dioxin in the draft National Estuary Program nomination package prepared by DEQ, in DEQ's own Staff Report for the EQC meetings on the WTD application, and numerous other letters and memoranda. These identifications make it impossible for the Commission to make an affirmative finding that the Lower Columbia River is not water quality limited.

The Oregon 305(b) Report lists water quality in the Lower Columbia/Clatskanie Columbia River as threatened for the beneficial uses of boating, fishing and aquatic life. Toxic organics due to discharges from industrial point sources are the parameters of concern. See 305(b) Report Appendix A-1.

DEQ's Environmental Atlas also recognizes that the water quality in the Lower Columbia River "threatens fish life and swimming." See Environmental Atlas page 35. Similarly, EPA's 1980 Environmental Profile of the Lower Columbia River found "unacceptable to severe" levels of inorganic toxicants including heavy metals such as lead, cadmium and mercury.

The Lower Columbia River is also included on Oregon's Clean Water Act (CWA) 304(1) list. This list includes waters and point source discharges which the DEQ does not expect to achieve water quality standards. The presence of dioxin in the effluent at James River (River Mile 41) and Boise Cascade (River Mile 86) has placed these point sources on the 304(1)(B) list. (The Pope and Talbot pulp mill at Willamette River Mile 148 is also on this list because as a tributary it is considered by EPA to be a contributor to the dioxin levels in the Columbia River.) DEQ Letter to Robie Russel, EPA dated June 4, 1989.

The State of Washington has also listed from Bonneville Dam to the mouth of the Columbia on its 304(1) list as contaminated with dioxin. Unlike Washington State, DEQ claims in its Staff Report Addendum for EQC's October 20 meeting that it cannot use its best professional judgement to list any more than the exact river miles where the discharge pipes are located. Washington State and the EPA have used their professional

judgement to list the entire Lower Columbia River. Similarly, DEQ has not opposed the EPA's conducting of a TMDL by arguing, for example, that a TMDL should only be done for each individual river mile where dioxin is discharged.

While the 304(1) listing process requires identification of point sources contributing to impaired waterways, it does not mean that the violation of the water quality standard occurs only in the immediate vicinity of the actual discharge. EPA has stated that "Using conservative assumptions...EPA's water quality criterion for [dioxin] will be exceeded ... at all mills where [dioxin] has been detected in fish tissue." EPA's Final Guidance on Section 304(1) Listing and Permitting of Pulp and Paper Mills, March 15, 1989, page 2. Such fish tissue samples have been analyzed for the Columbia establishing that dioxin is entering the food chain in reasonable quantities. Applying the above statement, EPA would therefore consider the Lower Columbia River as exceeding the water quality standard for dioxin. The Commission should bear in mind that Oregon's water quality standard for dioxin is set so far below the level of detection that fish sampling is one very important method of measuring compliance with that standard.

EPA's Dan Bodien testified at the EQC's September 8 meeting that some dioxin binds with organic matter and sediment and washes downstream to points that are difficult to identify, much of it likely to build up in the estuary. This points to the relative uselessness of focusing solely on the receiving water immediately surrounding the discharge pipe. (WTD's David Walseth, on the other hand, told the Commission at its July meeting that all of the dioxin will fall out at the precise river mile of the outfall pipe, and that it would all wash downstream.)

Further, DEQ and EPA's agreement to promulgate a TMDL and WLA's for dioxin on the Lower Columbia River is an admission by these agencies that the Lower Columbia River is water quality limited for dioxin. Letter to Robert Burd, EPA from Lydia Taylor, DEQ dated August 16, 1989. DEQ and EPA simply would not be engaging in the TMDL/WLA process if the Lower Columbia were not water quality limited for dioxins. Moreover, the preliminary (i.e. not yet completed) Stage I calculation made by EPA and presented in DEQ's last staff report demonstrates that current dioxin discharges from known point sources far exceed the amount calculated as the maximum allowed to meet water quality standards. This very attachment repeatedly states that the Columbia River is water quality limited for dioxin -- the basis for performing the TMDL/WLAs.

L. Taylor's letter itself states that Region X "will perform an analysis ... to determine if the river will or will not be water quality limited for TCDD once the ICS's are applied." (Emphasis added.) Since the ICS's represent a significant curtailment of current dioxin discharges, it is easy to extrapolate that all of the agencies -- including DEQ -- believe that the river is currently water quality limited.

Yet, in spite of this evidence, the Commission is being asked by DEQ and the Applicant to ignore the interrelationship of the entire Columbia River and instead regulate each river mile of the Columbia River as if they were separate waterbodies. Separate regulation of each river mile would fly in the face of scientific knowledge of dioxin discharges. This "river mile" approach would fail to recognize the fact that the EQC's rule requires the Commission to find that the "stream", as opposed to the stream "segment," is not water quality limited. Finally, it would fail to recognize the fact that the Commission must make an affirmative finding that the Lower Columbia River is not water quality limited. Such an affirmative finding cannot be made in light of the above mentioned reports and the lack of rebuttal data available.

Instead, the inclusion of the Lower Columbia in the reports listed above mandates a finding that the Lower Columbia River is, in fact, water quality limited.

II. OAR 340-41-026 PROHIBITS THE ISSUANCE OF AN NPDES PERMIT FOR A WATER QUALITY LIMITED STREAM SUCH AS THE LOWER COLUMBIA RIVER

As you know, the Commission's recently adopted rules, OAR 340-41-026, require a series of affirmative findings, made in good faith and based upon substantial evidence, before it can approve DEQ's issuance of an NPDES permit to WTD for its proposed pulp mill. These findings under OAR 340-41-026(3)(a) are that:

- o The new discharge will not cause water quality standards to be violated (Subsection A);

¹. The DEQ Staff suggests that the Commission has rejected the designation of the entire Lower Columbia River as water quality limited when in fact it has yet to take a position. DEQ Staff Report Addendum for the October 20th meeting, at pages 4 & 5.

- o The new discharge will not threaten or impair any recognized beneficial uses (Subsection B);
- o The new discharge must not be granted if the receiving stream is classified as being water quality limited (Subsection C); and
- o The activity is consistent with land use plans (Subsection D).

As will be discussed below, a number of these affirmative findings are not only not supported by -- but are, in fact, controverted by -- the agency's own admissions. Accordingly, the Commission cannot grant approval for an NPDES permit to WTD pursuant to OAR 340-41-026.

OAR 340-41-026 does not even contemplate consideration, much less approval, of new discharges where the receiving stream is water quality limited. In fact, the rule only authorizes NPDES permits for streams which presently have unused capacity to assimilate waste discharges. See DEQ Staff Report on Agency Item K for June 2, 1989 EQC Meeting. It is only to be used in rare and extraordinary circumstances. Statement of Fred Hanson at June 2, 1989 EQC Meeting. This is not a rare and extraordinary circumstance, nor is there any evidence that the Lower Columbia River has any unused capacity to assimilate waste discharges containing dioxin and other chlorinated organics. Even if the rule were interpreted as applying to water quality limited streams, such an intent would be defeated -- as it should in the instant case -- in the attempt to make a finding under subsection (C).

III. A TMDL AND WLA'S MUST BE ESTABLISHED, IMPLEMENTED AND SHOWN TO BE EFFECTIVE BEFORE AN NPDES PERMIT IS ISSUED TO A NEW SOURCE ON A WATER QUALITY LIMITED STREAM

The establishment and implementation of the TMDL will take time. WTD does not want to wait, instead chooses to encourage the EQC to abandon its water quality regulatory approach. NEDC and NWEA believe that the Commission must wait for the TMDL both to be established and implemented before an additional discharge of dioxin by WTD is considered. The establishment and implementation of an accurate and reliable TMDL will provide the Commission with a better understanding of the assimilative capacity (or lack thereof) of the Lower Columbia River. Such knowledge is essential before an additional loading of dioxin is allowed to be discharged into the Columbia River.

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EPA's discussion of the TMDL process in the Federal Register recognizes that new discharges to water quality limited streams should not be allowed until a TMDL is established.

[EPA] agree[s] that it is preferable for States to establish WLAs/LAs and TMDL's for their waters in advance of NPDES permit or construction grant decisions. However, if a State has many waterbodies where new WLA/LAs and TMDL's are needed, it may have to submit WLA/LAs to EPA with the permit or construction grant applications.

50 Fed Reg 17777 (January 11, 1985). This discussion indicates that EPA anticipates the establishment of TMDL's prior to the issuance of a new permit.

Similarly, this Commission has expressed its disapproval of allowing additional loadings to water quality limited streams for which TMDL's are being implemented. During the Tualatin TMDL process, both Commissioners Hutchinson and Sage expressed a desire to limit the approval to interim/new sources until compliance with water quality standards was achieved. EQC Meeting September 1988 Agenda Item R.

The Commission has been given contradictory and confusing advice by the DEQ Staff on the appropriateness of issuing new permits to water quality limited streams. DEQ appears to be suggesting in the Addendum to its Staff Report that as long as a TMDL/WLA is being conducted that the EQC has no rules to apply to new applications and therefore is free to approve a major new discharge based on the hope that the stream will come into compliance before the new discharge occurs. L. Taylor went so far to say at the September 8 meeting that EQC's approval is a "policy decision," implying that it could be made without the benefit of previously set policy guidelines or rules.

On the other hand the DEQ report acknowledges that there is no rule allowing consideration of new discharges into water quality limited streams undergoing the TMDL/WLA process: "(I)f they [planned reductions to bring the stream into compliance] haven't been completely implemented, no waste load increases could be considered." Addendum at page 6 (emphasis added). The DEQ, in this same document, acknowledges the need for a rule change if the EQC chooses to allow overloads. This however is contrary to Director Hansen's statement at the EQC meeting of September 8th that as long a TMDL is in progress the DEQ may allow increased loads (including new loads) until compliance is reached.

Currently the TMDL/WLA process is merely outlined in a DEQ handout and is not incorporated into its rules. Existing rules, however, clearly do not contemplate adding additional discharges where there is no assimilative capacity whether or not a TMDL is being performed. It is the position of NWEA and NEDC that if the EQC intends to engage in the creation of a new policy allowing an overload to a water quality limited stream then it must do so as a rulemaking. In addition, we believe this would be contrary to the Clean Water Act (CWA) and to a sound public policy.

As we have made clear in earlier submissions, neither DEQ nor EPA can provide verifiable assurances that in 3 years the ICS's will be fully implemented and water quality standards for dioxin achieved. Bob Burd of EPA and Director Hansen are quick to claim there will be full compliance. Agency staff are not. As discussed in our last letter, the EQC is considering this application at a time when the Phase I of the TMDL is not yet complete (expected completion January 1990), when Washington State has admitted to EPA that its proposed ICS's will be inadequate, when EPA has not yet approved the proposed ICS's for either state, when the pulp mill owners have challenged each of Oregon's proposed ICS's in court. Add to this the testimony of the Northwest Pulp and Paper Association (NWPPA), at the EQC September meeting, that there will be difficulties obtaining all the equipment needed to retrofit the entire nation's pulp mills, that industry has serious reservations about allowing permit regulation based on in-plant bleach flow monitoring, and that there are difficulties in measuring the effectiveness of newly installed retrofits and the picture is significantly less reassuring than WTD's advocates would have the Commission believe. In other words there is not a shred of evidence that the Columbia River will comply with the dioxin standard by the time WTD is ready to discharge.

IV. OAR 340-41-205 PROHIBITS THE PROPOSED DISCHARGE OF DIOXINS TO THE LOWER COLUMBIA RIVER.

OAR 340-41-205(2)(p) provides that:

Toxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may bioaccumulate to levels that adversely affect public

Commissioner Hutchison
October 19, 1989
Page 8


health, safety, or welfare; aquatic life; or other designated beneficial uses.

As discussed above, the presence of dioxin and other toxics in the Lower Columbia river already is suspected to threaten the beneficial uses of boating, fishing and habitat preservation. Certainly, the addition of more dioxin is likely to adversely affect these and other beneficial uses.

V. CONCLUSION

Therefore, we request that the Commission deny approval of the new bleached kraft pulp mill effluent discharge load to the Columbia River at this time.

Sincerely,



Nina Bell, Executive Director

Northwest Environmental Advocates
and for Northwest Environmental
Defense Center

cc: Dr. Emery N. Castle
Henry Lorenzen
Genevieve Pisarksi Sage
William W. Wessinger



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

975 S.E. Sandy Boulevard, Suite 202, Portland, Oregon 97214

Telephone (503) 238-0667

Fax (503) 235-4228

October 17, 1989

William Hutchinson
Oregon Environmental Quality Commission
811 S.W. Sixth
Portland, Oregon 97201

Re: Proposed WTD Port Westward Pulp Mill

Dear Commissioner Hutchinson:

The Columbia River Inter-Tribal Fish Commission (CRITFC) was formed by the Fish and Wildlife Committees of four tribal governments: the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakima Indian Nation.

In the Pacific Northwest, fishing is at the heart of traditional Indian social and religious activities. Sohappy v. Smith, 302 F. Supp. 899, 904-907 (D.Or. 1969); United States v. Washington, 384 F. Supp 312, 357-58 (W.D. Wash 1974). The tribal fishing right is secured by treaties with the United States. Treaty with Yakima Tribe, June 9, 1855, 12 Stat. 951; Treaty with the Tribes of Middle Oregon, June 25, 1855, 12 Stat. 963; Treaty with Umatilla Tribe, June 9, 1855, 12 Stat. 945; Treaty with Nez Perce Tribe, June 11, 1855, 12 Stat. 957. One of the rights most adamantly insisted upon during the treaty negotiations, and jealously guarded since, is the continuation of tribal fisheries. Sohappy v. Smith, 302 F. Supp. 899, 906. n.1 (D.Or. 1969).

The treaty right to take fish reserved by the tribes presumes the continued existence of the fish to be taken. In other words, the treaties secure to the tribes the continued existence of those biological conditions necessary for the fish that are the subject matter of the treaties. See Kittitas Reclamation District v. Sunnyside Valley Irrigation District, 763 F.2d 1032 (9th Cir. 1985); United States v. Adair, 723 F.2d 1394 (9th Cir. 1984).

Water quality of the Columbia River is of great concern to the Tribes CRITFC serves. Of particular interest is the current status of the Columbia River with regard to exceeding Oregon's ambient water quality standard for dioxin. According to the Department of Environmental Quality (DEQ), the river is already receiving dioxin at a level five to seven times greater than the loading capacity under current standards. Yet, the DEQ has

William Hutchinson
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recommended that the Environmental Quality Commission (EQC) give DEQ the green light to issue a permit for the WTD facility, knowing that facility will contribute even more dioxin to the river.

The basis for the DEQ recommendation is the assumption that while the plant is under construction the other eight pulp and paper facilities draining into the Columbia will significantly reduce their dioxin output. We do not believe DEQ can lawfully issue a permit to degrade the water quality of the Columbia River based on only an assumption about future activities. But, even if DEQ could legally issue the permit, the assumption is not valid. DEQ assumes, for instance, that Washington will require greater reductions in dioxins than Washington actually proposed to require for its final individual control strategies.^{1/} Nowhere has DEQ provided proof that Idaho will control dioxins at the level assumed in the recommended scenario. Even if it is safe to assume adequate individual control strategies will be in place, the DEQ proposal rests on the assumption that industry will timely comply with new strategies. This assumption is being made by DEQ at a time when industry is making legal challenges to Oregon's proposed strategies. CRITFC suggests a better assumption would be delayed industry compliance and additional industry challenges to other states' individual control strategies. It is poor public policy to rest a permitting decision on empty assumptions.

Not only are the assumptions unfounded, but to approve the discharge permit would violate both the Clean Water Act and DEQ's own regulations. At section 301(b)(1)(C), the Act requires discharge permits to contain "any more stringent [effluent] limitation, including those necessary to meet water quality standards. . ." 33 U.S.C. § 1311(b)(1)(C). Because the river

^{1/} DEQ's analysis of the impact on the permit on meeting the river's carrying capacity were based on non-deductibility limits in combined bleach plant flows. Washington, on the other hand, proposed non-deductibility limits only in total plant flows. According to the DEQ, "The Oregon [proposed] limit [using combined bleach plant flows] would be stricter than the Washington limit because bleach plant flowrates are less than the total plant flowrates (8-63 percent of the total plant flowrate, depending on type of mill)." Staff Report for Agenda Item E, (Addendum No. 2 to July 21, 1989, EQC Staff Report), page A-4. Today DEQ can only speculate that adequately strict limits will eventually be promulgated by Washington. Until adequate limits are in place and are being enforced, the assumptions are mere conjecture, and should not be the basis for a permitting decision.

currently does not meet water quality standards, and in fact violates the carrying capacity five- to seven-fold, DEQ cannot now allow more dioxin to enter the river. The Act requires DEQ to ensure that any permit issued includes a discharge limit that is necessary to meet the water quality standard. There is no basis in the Act to take a chance at exacerbating an already serious violation of water quality standards. The Clean Water Act further requires that DEQ must "assure the attainment of [the] water quality standard" and when setting an effluent limit "act consistent with the antidegradation policy" of the Clean Water Act. 33 U.S.C. § 1313(d)(4)(A) & (B).

Approval of the WTD discharge permit would also violate the policies and guidelines established in the EQC's regulations. Before the DEQ can approve the WTD permit for a new discharge, the EQC must find that the "new or increased discharged load would not cause water quality standards to be violated . . . [or] threaten or impair any recognized beneficial use." OAR 340-41-026(3)(a)(A) & (B). Given the fact that the carrying capacity is currently in violation, the EQC cannot make these findings. Nor can the EQC find that the pollutant "associated with the proposed discharge [is] unrelated either directly or indirectly to the parameter causing the receiving stream to be water quality limited." 2/ Id. at (C).

DEQ's and WTD's newest twist of logic to urge approval of the permit is to suggest that the Columbia River is water quality limited - in violation of water quality standards - only at isolated hot spots near pulp mills. Just two months ago the DEQ identified "the lower Columbia River" as water quality limited, and noted that the requirement to establish total maximum daily load (TMDL) limits for the entire river stems from this finding. See Columbia River TCDD Analysis, August, 1989. The DEQ also acknowledged that much information was not known, and the "[t]he

2/ The DEQ and WTD argue that only certain stream segments are water quality limited, and as such, the findings required by this rule can be met. But the regulation requires this finding if the "stream" is water quality limited. If, arguendo, DEQ and WTD are correct that the 304(1) water quality limited classifications only apply to stream segments, then this rule would never need to be addressed by the EQC, because no entire stream is identified as water quality limited, only segments are identified. If the finding only has to be met when a "stream segment" is water quality limited, that is what the rule would say. To give the rule meaning, therefore, the EQC must find that the criteria are not met, and not allow DEQ's limited identification of stream segments (for the purpose of the 304(1) report) to stand in its way.


William Hutchinson
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Clean Water Act specifically states that TMDLs be established with a margin of safety which takes into account any lack of knowledge." Id. See 33 U.S.C. § 1313(d)(1)(C). Now, the DEQ is taking the position that given that knowledge about attenuation characteristics, TCDD's expected life, and the relationship of its accumulation in fish tissue to the amount in the water column "is not well enough known," the DEQ will not "state with confidence that, in its best professional judgment, the entire receiving stream or even selected stretches" of the Columbia River are water quality limited (i.e., do not meet water quality standards). Staff Report, Agenda Item E, page 3. Thus, even though the Clean Water Act directs DEQ to establish TMDLs to meet water quality standards with a margin of safety that takes into account any lack of knowledge, now DEQ is relying upon its lack of knowledge to declare that the river meets water quality standards which DEQ itself cannot measure.

Fish are extremely important, and often are the mainstay to the diet of the Columbia River treaty tribes. Little is known, however, about the threats to the Indians' health caused by eating fish from waters that so greatly exceed the loading capacity for dioxin. Until more is known, CRITFC cannot support a decision to add more dioxin to the river. Only after there are demonstrated reductions from existing polluters and the Columbia actually meets water quality standards would it be appropriate to consider allowing a new discharge of dioxin-laden wastes. In the meantime, however, the law and sound public policy dictate that the EQC not allow the DEQ to issue the discharge permits.

In summary, CRITFC urges the EQC to delay giving the DEQ authority to issue the water discharge permit until such time as the other eight pulp mills in the basin are in fact held to enforceable, stricter emissions limits, and are actually implementing enforceable compliance schedules and actions.

Sincerely,


Ted Strong
Executive Director

cc: Members, Environmental Quality Commission
CRITFC Commissioners
Tribal Attorneys



Western Natural Resources Law Clinic

Law Center, University of Oregon, Eugene, Oregon 97403, 503-686-3823

Michael D. Axline
John E. Bonine
Attorneys

October 17, 1989

Bill Wessinger
1133 W. Burnside Street
Portland, OR 97209

Dear Mr. Wessinger:

We represent Dr. Mary O'Brien and the Northwest Coalition for Alternatives to Pesticides.

For the past few weeks we have examined documents and talked to staff at the Department of Environmental Quality, regarding issuance of an NPDES water pollution permit for the proposed WTD pulp mill at Clatskanie. We have also reviewed Oregon and federal laws and regulations governing the water pollution permit program. We have concluded that the action you are being asked to take at your October 20 meeting of the Environmental Quality Commission would violate several provisions of the federal Clean Water Act and U.S. EPA regulations, provisions of the Oregon Clean Water Act and EQC regulations and other laws.

The action will also be bad public policy. We enclose a copy of our client's personal comments prepared for the October 20 meeting on those policy issues. The action will cause (1) harm to public health in Oregon and elsewhere in the nation by causing a number of cancer cases that can be calculated in advance; (2) harm to commercial, sport, and Indian treaty fishing through the addition of toxic substances into the product; (3) harm to newly imperiled Bald Eagles and great blue herons protected under the Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act.

As for legal deficiencies, federal and state laws simply do not permit the prospective violation of Oregon's water quality standard for dioxin on a river that DEQ documents have found to be already 700 percent in violation of the water quality standard down to the mouth at the Pacific Ocean. No new sources of any dioxin can be approved until at a minimum there exist binding and enforceable compliance schedules in Oregon and neighboring

jurisdictions to reduce by the needed 600 percent the dioxin pollution from the eight or more existing dioxin polluters currently contributing to the extraordinarily high violations of the standard. Furthermore, several other substantive and procedural laws and regulations will be broken if the Department proceeds to issue the permit.

The prospective violations are:

13. Approval of issuance of a permit would violate laws requiring that EQC and DEQ include effluent limitations that will ensure, at the time of permit issuance, the attainment and non-violation of the water quality standard.

14. Approval of issuance of the permit would violate EQC's and DEQ's duties to protect all beneficial uses on the Lower Columbia, including human health from fish consumption, the fishing industry, and sensitive wildlife including bald eagles and great blue herons.

15. Approval of the issuance of the permit would violate other laws, including the Endangered Species Act.

16. Approval of the issuance of the permit would violate the public notice and comment procedures of federal and state laws.

The last time that an Oregon state agency took significant action regarding dioxin exposure to Oregonians was in 1978, when the State Board of Forestry considered requests for Governor Bob Straub and a petition from citizen groups to require warning notices to residents before the use of the Agent Orange herbicide, (2,4,5-T) was sprayed on any lands in Oregon. The Board of Forestry at that time decided that the issue was too important to leave to the filtered summaries of a hearings officer and therefore decided to sit as a full Board to hear directly the public testimony of those concerned with the issue. We ask that the EQC accord the same degree of personal involvement in the issue of further permits for dioxin discharges into the precious waters or air of Oregon.

On behalf of our clients, we ask that you direct the staff of DEQ that before it may propose the issuance of the permit to WTD, any permit for expansion to any other pulp mill, or the renewal of any permit for any pulp mill on the Columbia River system it must (1) prepare reviewable calculations for the probable level of dioxin in the lower Columbia River just before it reaches the Clatskanie site and from that point downstream to

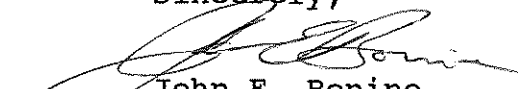
the mouth of the Columbia past Astoria (the ones that have been done and made available to us are so minimal as to be meaningless); (2) prepare specific and detailed calculations and scientific findings on the uptake from sediment by, and likely dioxin loadings in, fish, bald eagles, and great blue herons in the Columbia River; and (3) present binding legal documents showing enforceable compliance schedules for all other chlorine-bleaching pulp mills in the Columbia River system (in Oregon, Washington, Idaho, and B.C.) for which any future reduction in dioxin discharge is assumed, with calculations showing specific reductions in dioxin loading of the system as a result of such enforceable schedules but no reductions based on mere hopes.

We also request that because of the strong public importance of this issue the EQC provide a 60-day period for public comment by other federal and state agencies of these actual calculations and findings (we enclose letters you may not have seen showing the strong concerns of federal fish and wildlife agencies); and finally a public hearing or forum on dioxin attended by the members of the EQC and top staff of DEQ, not merely an appointed hearings officer, at which these calculations and findings and other science on dioxin and chlor-organics can be reviewed, along with information on alternative pulping processes. We urge that this include opportunity for qualified representatives of citizen groups and members of the EQC to direct questions during such hearing to the staff of DEQ regarding the basis of their calculations and specific findings.


The clean-up of dioxin from our society and from Oregon in particular is too critical an issue to allow a major new chlorine-bleaching pulp mill to be built without advance assurance of the complete reliability of the scientific basis for findings.

Similarly, we are charged by our client with ensuring complete compliance with all applicable laws and regulations. Our analysis of the legal unacceptability of the course of action being proposed by DEQ at present is enclosed.

Sincerely,



John E. Bonine
Attorney-



Michael Axline
Attorney

cc: Fred Hansen, DEQ

October 17, 1989
Page 4

Randall Baker
Monty Booth
Stephen Koteff
Chris Rose
Paulette Sanders
Liam Sherlock
 Legal Interns



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
 1002 NE HOLLADAY STREET - ROOM 620
 PORTLAND, OREGON 97232
 503/230-5400

JUL 27 1989

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RECEIVED

JUL 28 1989

RECEIVED

Mr. Jerry E. Turnbaugh
 Department of Environmental Quality
 Water Quality Division
 811 S. W. 6th Avenue
 Portland, Oregon 97204

RE: NPDES Wastewater Discharge Permit
 File Number: 104265 (Port Westward Pulp Co.)

Dear Mr. Turnbaugh:

The National Marine Fisheries Service (NMFS) has completed its review of the subject proposed permit and Evaluation Report. The permit would allow the discharge of wastewater from the operation of a proposed bleached-kraft pulp mill into the lower Columbia River near Clatskanie, Oregon. Our comments and recommendations are based on the NMFS's responsibility for the protection and enhancement of marine, estuarine, and anadromous fishery resources and their supporting habitats.

Studies by our Northwest Fisheries Center indicate that, of the 250 to 350 million salmon and steelhead smolts migrating out of the Columbia Basin each year, up to 30 million migrate through the nearshore areas in the vicinity of the proposed mill. Investigations on coho salmon smolts in the Chehalis River indicate that survival of these fish is less than 50 percent of a neighboring river, the Humptulips River. The Chehalis River receives effluent from two pulp mills near its mouth. The Humptulips River does not. Contaminants that could be produced by the proposed mill would pose a significant threat to the important commercial and recreational fishing resource of the Columbia River.

The Evaluation Report fails to address the cumulative impacts that this pulp mill could have on the fishery resources of the Columbia River. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels that represent significant threats to human health, the environment, and fish-eating wildlife. Effluent receiving waters associated with other bleached-kraft pulp mills on the Columbia River have been included on the U.S. Environmental Protection Agency's (EPA) 304(1) "short" lists that identify water bodies in violation of water quality standards due to toxicants. Although



the proposed mill will supposedly discharge a smaller amount of toxicants compared to other mills on the Columbia River, its effluent will only exacerbate an already recognized problem.

The Evaluation Report fails to adequately address the issue of the best available technology for this industry. Although the proposed mill is incorporating methodology that is designed to reduce toxicants in its effluent compared to existing mills, the Report states that a similar mill does not exist in Oregon, and, therefore, the predicted level of toxicants produced cannot be reliably verified. The Report does not describe and compare other pulping processes and wastewater treatment systems that could reduce toxic effluents. The Report simply indicates that the proposed mill should produce less toxicants than those that are presently operating.

Some important water quality parameters for the proposed mill are not well addressed. Bleached-kraft pulp mills are known to be a significant source of chlorine based compounds such as 2,3,7,8-TCDD ("dioxin") and a close relative 2,3,7,8-TCDF ("di-benzo furans"). Both dioxin and di-benzo furans are exceedingly stable, readily incorporate into aquatic ecosystems, are very persistent, and readily bioaccumulate. Laboratory studies have demonstrated that dioxin in minute quantities can result in acute and delayed mortality in fish. Dioxin has been linked to teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. The proposed permit properly limits dioxin to none detectable. However, it does not address the many and various chlorophenolic precursors from the chlorine dioxide bleaching stage. Chlorophenolic contaminants from pulp mills are highly toxic to aquatic life and are highly resistant to further chemical degradation. The chlorophenolics are also difficult to burn completely, and under combustion conditions they can form dioxins and other hazardous products.

The proposed permit does not adequately monitor chlorophenolics. As described in the permit, chlorophenolics would be lumped under the category of "adsorbable" organic halides. This category is too nonspecific to properly document the occurrence and regulate the release of chlorophenolics in the effluent. Methodology specific for chlorophenolics must be employed. We recommend that methods developed by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) be employed (Technical Bulletin No. 498, July 1986; methods CP-85.01 and CP-86.01). NCASI has a West Coast Regional Center in Corvallis, Oregon and is represented by Mr. Lawrence LaFleur, (503)-752-8801, who can provide copies of the NCASI procedures. Methods CP 86.01 covers 27 chlorophenolics, which are listed in Section 1.0 (copy enclosed). Schedules A and B of the proposed permit should be revised to reflect chlorophenolics monitoring. Because of the uncertainty of the results of the new methodology being employed at the proposed mill, studies of effluent effects

in the mixing zone and at the mixing zone boundary should be performed. A modeling study to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms should be performed using worst case conditions. River flow conditions that should be modeled should include the combination of spring tides, low river flow, and flood tide.

Until our concerns are fully addressed, we recommend that this permit be withheld. If you have any questions about our comments, please contact Edmond Murrell of my staff at (503) 230-5433.

Sincerely,



Einar Wold
Division Chief

Enclosure

cc: Oregon Dept. of Fish and Wildlife
Fish and Wildlife Service, ES, PFO
Oregon Division of State Lands ✓
Environmental Protection Agency, Portland



United States Department of the Interior

DIVISION OF
STATE LANDS

Can't
file

FISH AND WILDLIFE SERVICE
Portland Field Office
727 NE 24th Avenue
Portland, OR 97232

Jul 12 10 52 AM '89

July 10, 1989

Jerry E. Turnbaugh
Department of Environmental Quality
Water Quality Division
811 S.W. 8th Avenue
Portland, Oregon 97204

RE: Port Westward Pulp Co.
NPDES Wastewater Discharge Permit

Dear Mr. Turnbaugh:

The U.S. Fish and Wildlife Service (Service) has reviewed the Public Notice for Port Westward Pulp Co., which proposes to build a bleached-kraft market-pulp mill on the Columbia River near Clatskanie, Oregon. The company has applied for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit. If issued, the permit would allow discharge of wastewater from the operation of the pulp mill to the Columbia River.

We are concerned about the potential water quality degradation associated with this project and feel the subject permit has not adequately addressed this issue. The toxic substances of greatest concern are the chlorine based compounds such as dioxins (particularly 2,3,7,8-TCDD) and di-benzo furans. Bleached-kraft pulp mills are a known significant source of dioxins. 2,3,7,8-TCDD is exceedingly stable, readily incorporated into aquatic and terrestrial ecosystems, extraordinarily persistent, virtually impossible to destroy, and readily bioaccumulates in biological systems. Laboratory studies with birds, mammals, and aquatic organisms have demonstrated that exposure to 2,3,7,8-TCDD can result in acute and delayed mortality as well as carcinogenic, teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels which represent significant threats to human health, the environment, and fish-eating wildlife. The potential for biomagnification of organochlorine compounds is high. Thus, organisms at the upper end of a food chain, such as bald eagles, great blue herons, or salmon may accumulate concentrations of chlorinated dioxins that are hazardous to their reproductive capabilities and survival.

Several bleached-kraft pulp mills are in operation on the Columbia River. The receiving waters associated with these mills have been included on the U.S. Environmental Protection Agency's (EPA) 304(1) "short" lists identifying water bodies that are in violation of water quality standards due to toxicants. The addition of another mill adding organochlorine compounds to the Columbia River will only intensify the problem. Although the Port Westward Mill should discharge lower levels of dioxins, the DEQ should consider the long term consequences of additional discharges of chlorinated dioxins to the river.

Before the permit is considered for issuance the permittee should complete studies of the mixing zone and the mixing zone boundary, including dye studies and a modeling effort to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms. The detection level of 2,3,7,8-TCDD in effluent is 10 ppq, whereas the EPA's water quality criteria for dioxin is well below the detection level at 0.013 ppq. Thus, discharged effluent must have a 769-fold dilution to meet EPA's water quality criterion. Without mixing zone evaluations, this dilution factor is unknown. In addition, acute and chronic bioassays of the mixing zone and mixing zone boundary should be conducted. No sublethal effects on growth, reproduction, or survival of aquatic organisms should occur at the mixing zone boundary.

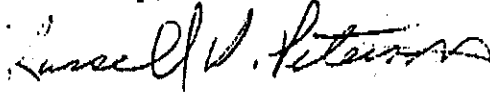
Because there are no bleached-kraft mills on the Columbia River that use the same technologies as that of the proposed Port Westward mill, the amount of dioxin actually discharged is unknown. The permit limits discharge of dioxin to below the level of analytical detectability (10 ppq). However, without evaluations of the effluent produced and discharged, a reduction of effluent toxicity can not be assured. We understand that the DEQ is already allowing for a provision to reopen the permit for modifications of the dioxin effluent limitations if the applicable dioxin regulations or regulatory policies change. We recommend that the DEQ consider limiting the permit to a discharge of no dioxins since the regulatory policies could potentially be reduced to production and discharge of zero dioxins.

The EPA's interim strategy and stated long-term goal for controlling dioxin discharges is to reduce and hopefully eliminate the production of dioxins, not just dioxin discharges to surface waters. Thus, it is appropriate for the DEQ to consider requirements that all new pulp mills use technology that produces and discharges no dioxins. It is our understanding that this technology is available and is being used in some mills operating in Sweden. If not yet available, then we recommend the DEQ question the suitability of adding another pulp mill's effluent to the Columbia River.

The Service requests that the DEQ not issue the NPDES permit until additional information is provided. Because of the magnitude of the proposed project, the likely degradation of water quality in the Columbia River, and the

potential for significant impacts we also recommend that the DEQ give serious consideration to the long range and cumulative impacts of this project.

Sincerely,



Russell D. Peterson
Field Supervisor

CS2:lg

- cc:
- EPA
- NMFS
- ODFW
- DSL
- WDE
- WDF
- WDG
- COE

2 E.P.A. Studies Confirm Threat to Fish of Dioxin From Paper Plants

Toxicity is found to far surpass levels set as hazardous.

TWO Federal studies have confirmed fears that many paper mills are discharging dioxin into rivers and that the toxic chemical is accumulating in fish downstream.

One of the studies by the Environmental Protection Agency found that fish downstream from 21 of the 81 mills that were examined contained levels of dioxin far exceeding those that Federal authorities have designated as hazardous, scientists said.

A second E.P.A. study found that the amount of dioxin in waste water at 59 of 74 mills examined, although minute, was far above the E.P.A. standard for clean water, officials said.

Dioxin, an unwanted byproduct produced when mills bleach paper pulp with chlorine, is a highly toxic substance that has been found to cause cancer in laboratory rats and has been linked to the skin disorder chloracne and immune system problems in humans. Scientists disagree about how much dioxin humans can absorb before their risk of cancer rises.

Earlier Studies Confirmed

Still, the new evidence has prompted the E.P.A. to pressure some mills to submit plans for ridding their waste water of the chemical by 1992, officials said. Dioxin appears to be a problem chiefly at "bleach kraft" mills, which use chlorine to make white paper products. In all, 104 of the country's 600 paper mills use chlorine.

E.P.A. officials said the studies prove conclusively what a less-comprehensive study of five paper mills in 1986 and a nationwide study of dioxin pollution in 1983 strongly suggested: that bleach kraft mills have been contaminating streams with dioxin for years.

"We are seeing higher levels of dioxin in effluent and sludge from the mills than we expected," said Jenny Helms, an E.P.A. environmental engineer.

Carol Raulston, vice president of the American Paper Institute, a trade group, said the industry was committed to reducing the dioxin produced by the mills. But she said many mill operators doubt the technology exists to meet Federal standards.

Seven Times Dangerous Level

The fish study is part of a larger E.P.A. study to be published next fall that will assess the accumulation of 65 pollutants in animals. Researchers found fish downstream of some mills with up to seven times the level of dioxin the Food and Drug Adminis-

tration has determined is dangerous for humans to eat regularly, 25 parts per trillion, said Stephen Kroner, chief of the exposure assessment section of E.P.A.

The highest level of contamination was 180 parts per trillion, found in creek chubsucker fish near the Weyerhaeuser Company plant in Plymouth, N.C. Carp caught near the International Paper Company mill in Bastrop, La., had the next-highest concentration, nearly 150 parts per trillion.

The study of mill waste water stemmed from an agreement last year between the American Paper Institute and the E.P.A. to survey the waste of all bleach kraft mills, Ms. Helms said.

So far, 74 of the 104 mills have been tested and all but 15 were found to be discharging water that, once it was diluted in a stream or river, would still contain a level of dioxin above the E.P.A.'s safety threshold of 0.00013 parts dioxin per trillion parts water, Ms. Helms said.

Mills Pressured to Reduce Chlorine

The highest level was found at the International Paper mill in Georgetown, S.C., whose waste water at the end of an outfall pipe measured 0.64

"The paper mills are all under the gun. They know there is a lot of public interest."

parts of dioxin per trillion. The median for the mills where the dioxin was measurable was 0.024 parts per trillion.

The E.P.A. is putting new requirements into its pollution permits to pressure mills to reduce the use of chlorine, officials said. The regional office in Boston last week became the first to require in pollution permits that four mills in Maine and New Hampshire switch to other methods of bleaching pulp by 1992, Gary Hudiburg, an E.P.A. attorney, said.

Other regional offices and state agencies plan to follow suit. California, for instance, plans to alter the permit for the Simpson Paper Company in Anderson, Calif., and the E.P.A. in Philadelphia has rejected a proposed permit for the Westvaco Corporation mill in Covington, Va., because it did not address dioxin pollution.

"The paper mills are all under the gun," said James Gallup of the E.P.A. water permit division. "They know there is a lot of public interest in this."

Dioxin refers not to one chemical but to a whole family of 75 substances

sharing a three-ring structure — two benzene rings connected by a ring of oxygen atoms. What distinguishes one dioxin from another is the number of chlorine atoms attached to the outside edges.

The chemical commonly referred to as dioxin is 2,3,7,8-tetrachlorodibenzo-p-dioxin, or TCDD, which has four chlorine atoms and is one of the most toxic chemicals ever synthesized. Chemists theorize that dioxin is formed when chlorine reacts with organic "unchlorinated" dioxins in wood fibers.

How much dioxin exposure repre-

sents a health hazard has been a matter of dispute in recent years. Recently, the E.P.A. has sought to play down the danger of exposure and is considering a proposal to raise acceptable contamination levels 16-fold.

'Nobody Knows the Risk'

Dr. Robert Sheuplein, chief toxicologist at the F.D.A., said species respond to dioxin differently and the Government guidelines are based on a decade-old study of dioxin-induced cancer in rats, which many scientists now believe are more sensitive to the substance than humans are.

"Nobody knows the risk, so the consumers and the environmentalists can make a day of it and the toxicologists can't say they're wrong," Dr. Sheuplein said. "But none of us believe it."

But Barry Commoner, director of the Center for Biology of Natural Systems at Queens College, says two recent studies of cancer among Air Force personnel exposed to Agent Orange, which contains dioxin, indicate the E.P.A.'s standards actually underestimate how lethal dioxin is.

Mindful of the public perception that dioxin, even in minuscule quanti-

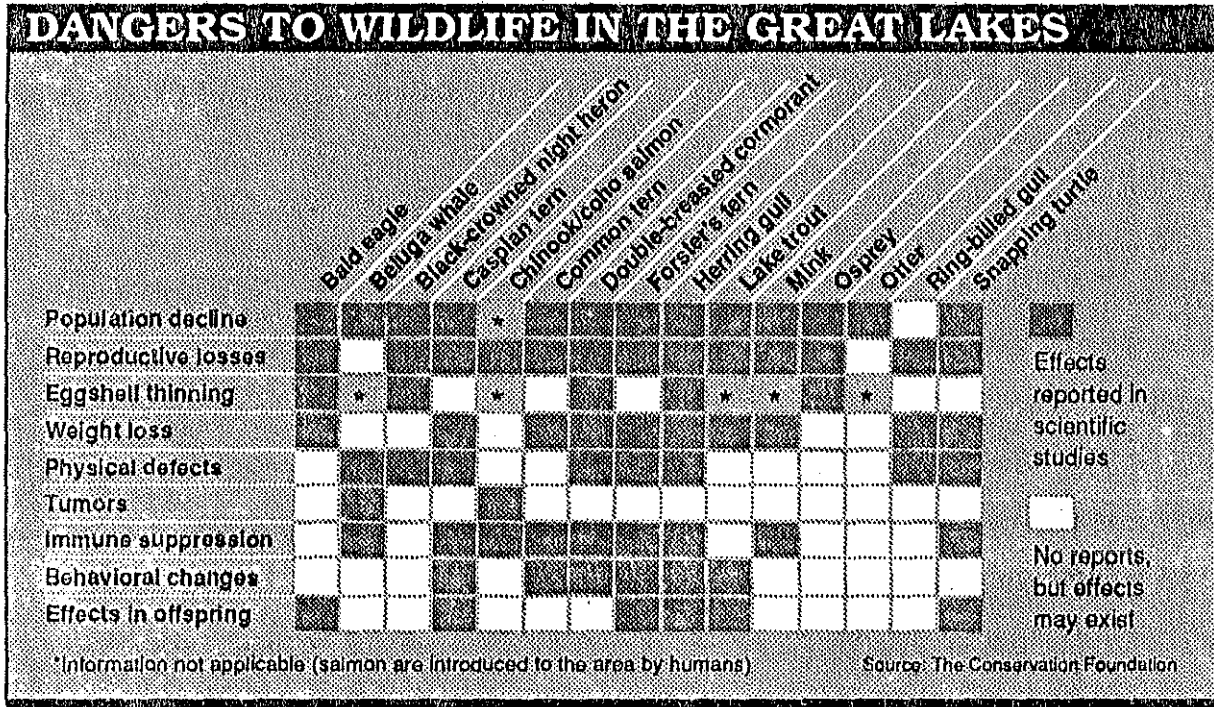
ties, is deadly, the paper industry has favored making changes to reduce the use of chlorine rather than quibbling about how much dioxin is too much, Ms. Raulston, the industry spokesman, said.

She said mill operators were considering several methods to reduce the dioxin, including washing the pulp for a longer time before bleaching it or substituting oxygen, chlorine dioxide or peroxide for chlorine.

"We're committed to getting our numbers down," she said. "We don't know if we can get them down to that level."

FIG. 7

October 12, 1989



N.Y. Times News Service

Fears voiced for Great Lakes

By **WILLIAM E. SCHMIDT**
New York Times News Service

CHICAGO — William K. Reilly, the administrator of the Environmental Protection Agency, and Canadian health officials said Wednesday that the Great Lakes were facing "a critical situation" as a result of toxic contamination and the destruction of wildlife habitat.

They called for an expanded commitment by the two nations to clean up the lakes, the world's largest surface source of fresh water, saying that gains in controlling pollution over the last two decades had been endangered.

Speaking at simultaneous news conferences here and in Toronto, officials of the two governments announced a study concluding that urgent action is needed by federal, state, provincial and local governments to reverse what it calls the widespread, long-term environmental degradation of the Lakes.

"The Great Lakes environment is sick, and is no longer getting better," said David Runnalls, a researcher with the Institute for

Research on Public Policy, an independent research group based in Toronto.

The institute compiled the report, "Great Lakes: Great Legacy?" along with The Conservation Foundation, a Washington-based, non-profit environmental group once headed by Reilly.

Although most of its findings have been published previously by other groups and government agencies, the report suggests, among other things, that state and provincial health departments in the region should re-examine and strengthen advisories warning residents to limit their consumption of sports fish contaminated by trace levels of polychlorinated biphenyls, pesticides and other toxic compounds.

Theo Colburn, a scientist with a doctorate in zoology, who was an author of the report, said, "Research suggests that female human beings should not eat contaminated Great Lakes fish until they pass child-bearing age."

Current health advisories issued by states in the Great Lakes basin generally recommend that women

who are pregnant, nursing or intend to have children limit their consumption of some fish species, such as lake trout and coho salmon, to one meal a month.

While Colburn said little is known about the direct health effects that these contaminants have on humans, scores of scientific studies have documented severe reproductive problems, tumors, extreme weight loss and other abnormalities in both fish and the predators, like terns, gulls and otters, that consume tainted fish.

She said research has demonstrated a longterm decline in population of bald eagles that nest in the Great Lakes watershed, as well as other effects, like the thinning of eggshells and suppressed immune systems that she says are related to "bio-accumulation" of toxic substances in predators that consume tainted fish.

This summer, the National Wildlife Federation, the nation's largest conservation organization, said women considering having children should not eat some contaminated species of Great Lakes sports fish because of an increased risk of cancer.

Bald eagle reproduction down

By The Associated Press

LONGVIEW, Wash. — The already poor reproductive rate of bald eagles along the lower Columbia River took a turn for the worse this year.

Biologists say that so few were born, the population won't sustain itself over the long term without outside birds.

Only seven of the estimated 25 occupied bald eagle nests from Portland to the mouth of the river produced young this spring. That's half the 10-year average.

"That is extremely poor," said Bob Anthony, a wildlife biologist for the Or-

Chemicals cited as possible cause

regon Cooperative Wildlife Research Unit at Oregon State University.

In healthy eagle populations, he said, eagles produce an average of one young per occupied nest. Along the lower Columbia, about half of the occupied eagle nests typically produce young. This year, slightly more than one-quarter produced young.

Anthony said he can't explain this year's poor birth rate. It might be a mere "random fluctuation of a population that reproduces very poorly," he said.

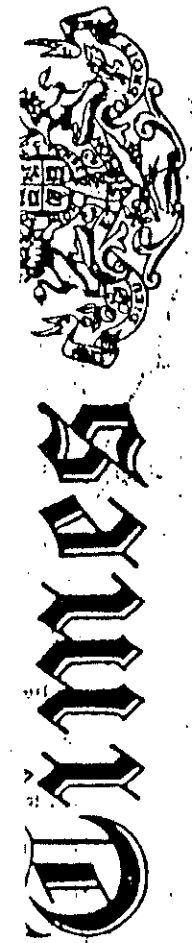
Statewide, however, numbers of the federally protected species have been increasing.

In the past several years, scientists have discovered that the banned herbicide DDT and the coolant PCB are causing the reproductive problems in the species, deforming eagle embryos and creating eggshells that are too thin.

DDT, the once widely used farm chemical, is suspected to have accumulated in river sediments. The chemical PCB has been widely used in elec-

trical transformers. When eagles eat fish that have been contaminated, the chemicals are released into their bodies.

Unpublished studies also have linked low reproduction of cormorants and herring gulls in the Great Lakes region to dioxin contamination, said Donald White of the Fish and Wildlife Service's Patuxent Research Center in Athens, Ga. Dioxin has become an issue along the lower Columbia because bleach kraft pulp mills discharge minute amounts. Tests have found fish in the river to be contaminated with the chemical. So far, no study has attempted to find dioxin in eagles.



FRIDAY

Wipe-out of heron eggs linked to dioxin

By Nancy Brown
Times-Colonist staff

High levels of dioxin from the Crofton pulp mill are suspected of wiping out all 200 eggs in a nearby great blue heron colony this year.

"The herons went in to nest, they laid eggs, not one was successful in raising young," Canadian Wildlife Service biologist Phil Whitehead said Thursday.

"Every one of the eggs was destroyed."

He said the eggshells were found in fragments beneath the nests, and there were no signs of contents.

"Whatever destroyed those eggs liked the taste of the contents as well," he said.

This could mean that every egg was taken by predators such as crows.

"It's a possibility, but it would be highly unusual for every egg to be taken," he said. "But it also happens that the highest levels of dioxin found in blue heron eggs in 1986 came from that colony near the Crofton mill."

"Apparently dioxins ... affect the development of the embryo or kill it, or they can affect the behavior of the adults so they don't care for or incubate the eggs properly."

The mystery of what happened to the embryos may be solved next year when the Wildlife Service will have results of this year's analysis of eggs taken before the rest were destroyed.

"You can be sure we will be monitoring this colony closely once nesting

starts in the spring," said Whitehead.

The Crofton colony was one of four colonies monitored in a pollution testing program begun in 1977, to be carried out at five year intervals in B.C.

Three of four colonies in the program are near industrial sites, while the control colony is at Crescent Beach south of Vancouver.

Great blue herons were selected as subjects because they are at the top of the food chain and pollutants would be

concentrated in their systems.

In addition, the colonies which nest 20 metres or more off the ground are easily located and heron families tend to remain in the same location throughout their lives.

To begin, eggs were collected and tested for DDT content, but in 1983 Canadian Wildlife Service scientist Ross Norstrom and the national wildlife research laboratory in Ottawa

HERONS A2

HERONS Continued from A1

developed a method of detecting dioxin levels in the eggs.

Those methods were applied to the 1982 egg collection and on the basis of the results another study was done the following year.

In addition to the control colony, biologists are looking at the Crofton colony; one on Gabriola Island offshore from the Harmac mill near Nanaimo; and a University of B.C. colony which feeds in the tidal flats of the Fraser River estuary.

"In 1983 we collected eggs from all four sites, analysed them for dioxin and found elevated levels in all samples except the ones from the control colony at Crescent Beach," said Whitehead. "In 1986 we sampled again, but this time we weren't able to look at Gabriola Island eggs because that colony had disappeared."

"We found high levels of dioxin again, and the highest levels were in the eggs from the Crofton colony."

He said results of 1987 samples are not yet available.

Whitehead said the disappearance of the Gabriola colony was not unusual.

"Quite often a colony will simply pack up and leave for another location," he said.

"When we search we'll probably find it in another location."

The UBC colony which had existed in the same location for many years suddenly moved about seven kilometres.

There are 75 forms of dioxin and

Norstrom said three toxic forms, including the most deadly, were present in the 1986 egg samples.

In the Crofton sample the heron eggs were found to contain up to 40 times the level of dioxin found in heron eggs in Quebec.

Norstrom said no one knows the exact effect the high dioxin levels will have on the heron, but the most likely effect would be to keep the embryos from growing inside the eggs.

This year's failure of the Crofton colony to reproduce is the first failure in the 10 years Environment Canada scientists have been studying B.C.'s heron population.

Norstrom said the presence of dioxins may be due to the trace elements of the chemicals found in man-made chlorophenols, a commonly used wood preservative.

Whitehead said the service has no evidence of a direct link between the presence of dioxins and pulp mills, but Environment Canada is in the process of expanding tests for dioxins in the environment.

FOR THE RECORD

In an editorial Sept. 9, it was incorrectly stated that the Public Sector Purchasing Policy office of the B.C. Purchasing Commission is in Vancouver. The PSP is at 1000 Seymour Pl., Victoria.

September 11, 1987
Victoria, B.C.

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INTERNATIONAL

170m1524. Rec'd 10/9/89

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

DRAFT OF PUBLIC HEARING NOTICE

Hearing Date: 7/6/89
Comments Due: 7/10/89

WHO ARE THE APPLICANTS:

Port Westward Pulp Co.
P.O. Box 5805
Portland, OR 97228

WHAT IS PROPOSED:

Port Westward Pulp Co., P.O. Box 5805, Portland, OR, 97228, proposes to build a bleached-kraft market-pulp mill on the Columbia River near Clatskanie, Oregon. The company has applied for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit and the Department has drafted a proposed permit.

WHAT ARE THE HIGHLIGHTS:

The mill will discharge wastewater to the Columbia River. The permit limits discharge of the following conventional pollutants:

- Biochemical oxygen demand (BOD₅)
- Total suspended solids (TSS)
- Fecal coliform
- pH
- Temperature

The permit also limits discharge of dioxin (2,3,7,8-TCDD) to below the level of analytical detectability (approximately 10 parts per quadrillion). Because the mill bleaching process is different from other Oregon bleached-kraft mills, it is not known to what extent dioxin will be produced.

The permittee is required to monitor discharge of the following wastewater characteristics and report the results to the DEQ to ensure compliance with the permit:

- Biochemical oxygen demand (BOD₅)
- Total suspended solids (TSS)
- Fecal coliform
- pH
- Temperature
- Color



811 S.W. 6th Avenue
Portland, OR 97204

11/1/86

FOR FURTHER INFORMATION:

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.

OVER

Exhibit G

- Acute and chronic toxicity
- Adsorbable and extractable organic halides (dioxin indicators)
- Dioxin

Two outfall mixing zones centered on the point of wastewater discharge are allowed: one at 1000-feet for color, and one at 400-feet for the other pollutants. Oregon has no water-quality standard for color, but this permit limits the visual impact of color to the first 1000-feet of the river.

**HOW IS THE
PUBLIC AFFECTED:**

The mill effluent will be diluted in the allowed mixing zone and will be carried away by the much larger flow of the Columbia River. Effluent color should not be visible beyond the 1000-foot mixing zone radius.

The effluent is not expected to have an adverse impact on the river or any beneficial uses.

HOW TO COMMENT:

Copies of the proposed permit and evaluation report can be obtained from: The Department of Environmental Quality, Water Quality Division, 811 S.W. Sixth Avenue, Portland, Oregon, 97204.

Written comments can be submitted to the same office. For further information, contact Jerry Turnbaugh at (503) 229-5374.

A public hearing will be held as follows:

WHERE: Clatskanie American Legion Hall (east of Clatskanie on Swedetown Road, 1 block north of Highway 30)

DATE: Thursday, July 6, 1989

TIME: 7:00 p.m.

Information on the mill will be provided at the hearing. The public will have an opportunity to ask questions as well as present formal testimony.

Oral and written comments will be accepted at the hearing. Additional written comments will be accepted until 5:00 p.m., Monday, July 10 at the offices of the DEQ.

**WHAT IS THE
NEXT STEP:**

Testimony received will be evaluated and the permit modified, if necessary. Because the mill is a significant new wastewater discharge source, the permit must be approved by the Environmental Quality Commission at its meeting on July 21, 1989.

rec'd from DEQ
10/9/89

**Oregon Department of Environmental Quality
A CHANCE TO COMMENT ON...**

PORT WESTWARD PULP CO. has applied for a permit to discharge treated wastewater to the Columbia River.

DEQ is extending the period for the public to send written comments on water quality issues to August 1, 1989. DEQ held a public hearing on July 6 in Clatskanie with the original deadline for comments as July 10.

Comments should be mailed to:

Jerry Turnbaugh
DEQ
Water Quality Division
811 SW Sixth Avenue
Portland, OR 97204

For further information, contact Jerry Turnbaugh at (503) 229-5374.

*date issued - July 10, 1989 - everyone received
date.*

DEPT. OF ENVIRONMENTAL QUALITY
PUBLIC HEARING

Rec'd from DEQ

10-9-89

The public is invited to comment on water quality issues of a proposed pulp mill to be built six miles north of Clatskanie. Port Westward Pulp Company has requested a permit to discharge treated industrial wastewater to the Columbia River. The permit would set limits on pollutants, including dioxin. It would also require that the treated wastewater be visible only within 1000 feet from the point of discharge.

*Thursday, July 6, 7 p.m.
Clatskanie American Legion Hall
E of Clatskanie on Swedetown Road,
1 block N of Highway 30*

A public hearing on air quality issues will be held at the same location on Tuesday, July 25 at 7 p.m.

For copies of Oregon DEQ's draft permits for air and water, call 1-800-452-4011.

*appeared in the Clatskanie
Chief on Thursday, July 6, 1989
as a paid advertisement (not
the classified public notice
section).*

Rec'd from DEQ
10-9-89

Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204

Contact: Shirley Kengla, 229-5766
or toll-free 1-800-452-4011

FOR IMMEDIATE RELEASE: June 26, 1989

HEARING SCHEDULED ON NEW PULP MILL

The Department of Environmental Quality (DEQ) is holding a public hearing on a proposed permit for pulp mill wastewater discharges to the Columbia River on July 6 in Clatskanie.

Port Westward Pulp Company has proposed to build a bleached-kraft pulp mill six miles north of Clatskanie. DEQ has reviewed the company's application for a National Pollutant Discharge Elimination System permit and is asking for public comments on the proposed permit. The hearing is scheduled for Thursday, July 6, at 7 p.m. in the Clatskanie American Legion Hall (east of Clatskanie on Swedetown Road, 1 block north of Highway 30).

The permit proposes limits on pollutants that would be discharged into the Columbia River. The mill's organic waste would be limited to levels that would not affect Oregon's water quality standards for dissolved oxygen levels, temperature, bacteria, pH and suspended solids. The permit addresses two other concerns, dioxin and color.

Dioxin, a byproduct of the bleached-kraft pulp mills, may not be discharged by the pulp mill at detectable levels. Current technology will detect dioxin in the range of 10 parts per quadrillion (comparable to 10 drops in 500 million barrels of water). Dioxin, a suspected carcinogen, has been found to build up in livers of fish exposed to it. Port Westward Pulp Company will be using state-of-the-art pulping processes which will minimize the production of dioxin.

The color removed from the wood pulp during the bleaching process will be visible when discharged into the river. DEQ is proposing a boundary for color, which may only be visible within 1000 feet from the point of discharge. Because studies have not demonstrated any adverse effects of color on aquatic life and options for removing color present other environmental concerns, DEQ is proposing no other limit on color.

An Air Contaminant Discharge Permit from DEQ will also be required for Port Westward Pulp Company.

#####

This news release was sent to Portland area media & all media in Columbia & Clatsop County. We also sent it to the Longview Daily News & radio stations on the Washington side.

Exhibit J

Department of Environmental Quality
Water Quality Division
811 S.W. Sixth Avenue
Portland, Oregon 97204

July 6, 1989

FACT SHEET
Port Westward Pulp Company
Proposed Wastewater Discharge Permit

This fact sheet summarizes the water-quality environmental issues of the proposed Port Westward Pulp Mill.

Mill Description

The proposed pulp mill would occupy approximately 250 acres on property leased from the Portland General Electric Company at the Beaver Terminal near Clatskanie, Oregon.

The mill would produce some 1200-1300 air-dried tons of bleached kraft market pulp per day at full capacity using softwood chips from Northwest sawmills. Chips would be delivered by barge, rail and truck and finished baled pulp would be shipped out by ocean-going ship, barge, rail and truck.

In-plant production processes, such as extended cooking, oxygen delignification and chlorine dioxide substitution in the bleaching process would be provided to reduce waste discharge.

Wastewater would be treated in an aerated stabilization basin to reduce biochemical oxygen demand before being discharged to the Columbia River.

The Permit Process

Port Westward must receive a National Pollutant Discharge Elimination System (NPDES) permit to discharge waste water to the Columbia River. In processing the application, Department staff evaluated the application and wrote a draft permit. The draft permit is then distributed to the public for review and comment. The public can submit written comments or may give oral testimony at the July 6, 1989 hearing. Before a permit is issued, the EQC must make findings that an increased discharge to the Columbia River will not violate water quality standards, that beneficial uses are protected, and land use requirements have been satisfied. The EQC is scheduled to discuss the increased discharge request at its July 21, 1989 meeting. If the Commission finds that the discharge from the new mill should be allowed, the DEQ Director may issue an NPDES permit.

The Department must evaluate the discharge request against the following criteria:

- o that water-quality standards established in rule both in numerical and narrative terms are not violated and that recognized beneficial uses of the river are not impaired,
- o that highest and best practicable treatment will be used to minimize degradation of water quality, and
- o that US Environmental Protection Agency technology-based effluent guidelines are met.

Water Quality Standards, Beneficial Uses

Based on its review of information submitted by Port Westward, the Department believes that water quality standards (with the possible exception of dioxin) would be met and beneficial uses of the Columbia River would be protected by in-plant processes that reduce creation of wastewater, by treatment to reduce wastes and by wastewater dilution provided by the river.

Color

The proposed mill effluent would be brown in color and, under some conditions, may be visible in the river. The Department proposes to require that Port Westward limit the visible color plume to a mixing zone radius of 1000 feet from the mill outfall diffuser. Other Oregon mills on the Columbia River do not have a similar color limitation.

Dioxin

Dioxin (2,3,7,8-tetrachloro-dibenzo-p-dioxin) has been found in the effluent from bleached kraft pulp mills throughout the nation, including the two Oregon bleached kraft mills on the Columbia River.

Dioxin is the common name of a family of chlorinated compounds. Nobody produces dioxins on purpose. It is an unwanted and often unavoidable by-product that comes from some manufacturing operations and certain types of combustion processes.

Oregon has established a water quality standard of 0.013 parts per quadrillion for dioxin. The water quality standard is based upon criteria developed and recommended by the US Environmental Protection Agency (EPA). Current technology can only detect dioxin at 10 parts per quadrillion; consequently, the water quality standard is substantially below the level of detection.

Based upon dilution calculations, the Department has determined that the concentration of 2,3,7,8 dioxin may be above the standard outside the allowable mixing zones for the two Oregon mills. Because the levels are below the detection level for dioxin, the dioxin concentrations cannot be verified from samples taken in the river. Dioxin has also been found in fish tissue taken from the river.

Based upon the dilution calculations, the Department has listed portions of the Columbia River as violating water quality standards due to dioxin.

The Department has no information about dioxin levels in the Columbia River adjacent to the proposed pulp mill site. The applicant has proposed to provide production facilities, substantially different from conventional bleached kraft mills, that would significantly reduce dioxin concentrations in the effluent. In reviewing final plans for the facility, the Department will require that all practicable means for reducing the discharge of dioxin be provided. The Department has also calculated the necessary effluent dioxin concentrations to meet water quality standards at the edge of the mixing zone. The levels in the effluent would have to be less than detectability. Permit limits for dioxin have been proposed in the draft permit at less than the level of detectability. If, in the future, capabilities for measuring dioxin are improved such that further reductions in dioxin levels are found necessary, additional requirements would be imposed upon the mill.

Wetlands Issues

Issues concerning the dredging and filling of existing wetlands for the proposed mill are not a part of the wastewater permit application being considered at this hearing. The Department, however, has proposed a condition in the permit to prohibit construction until a Section 404 (of the federal Clean Water Act) permit has been issued by the US Army Corps of Engineers. Before a Section 404 permit can be issued, the DEQ must certify, pursuant to Section 401 of the Clean Water Act, that the dredging and filling of the wetlands will not violate water quality standards. The DEQ is currently reviewing the Section 401 application and has requested further information upon which to evaluate the proposal.

The Corps of Engineers received a Section 404 permit application from Port Westward Pulp Co. and solicited public comment from May 24, 1989 to June 23, 1989.

Construction of the mill would result in the loss of 38 acres of existing wetlands. Port Westward proposes to mitigate the loss of these wetlands by creating 38-acres of wetlands, 5.6 acres of buffer around the created wetlands and 6.4 acres of spoil mounds from a 50 acre parcel of land.

Remaining existing wetlands would be protected by the wastewater discharge permit from any adverse effect of the mill, including stormwater runoff from chip and hog fuel storage piles.

Air-Quality Issues

Port Westward has also applied to the Department for an air-contaminant discharge permit. The air permit does not require approval by the EQC. Air-quality issues will be addressed in a separate hearing for that permit. The hearing will be held July 25, 1989, at 7 P.M. in the Clatskanie American Legion Hall.



**NORTHWEST COALITION for
ALTERNATIVES to PESTICIDES**

P.O. BOX 1393 EUGENE, OREGON 97440 (503) 344-5044

**OBJECTION TO EQC APPROVAL
OF NEW DISCHARGE OF DIOXIN TO THE COLUMBIA RIVER**

Dr. Mary H. O'Brien
October 16, 1989

I. INTRODUCTORY CONSIDERATIONS

- A. A "state-of-the-art" delivery system for aerially applied pesticides begs the question of whether agriculture needs to be dependent on toxic synthetic chemicals. Likewise, a brand new "state-of-the-art" chlorine bleaching mill begs the question of whether the paper industry should continue forcing the public to buy blindingly white, dioxin-contaminated paper and continue to throw away 50% of every tree in the process.

A state-of-the-art process that (a) poisons the environment and (b) is unnecessary is not state-of-the-art technology. Moreover, what is state-of-the-art for reducing damage by a chlorine-based mill is not state-of-the-art for a new mill that is not already based on an inappropriate chlorine technology conceived in ignorance as to its environmental consequences.

- B. The DEQ is failing in its critical responsibilities to the environment and fellow Oregonians (including its infants and endangered species). It has only addressed (in an inadequate and misleading fashion) the compound 2,3,7,8-TCDD while ignoring:

- (a) all the 300 or so related toxic, persistent, and bioaccumulative dioxins, furans, guaiacols, xanthenes, and other chlorinated compounds that are inevitably spewed out of chlorine-based pulp mills but for which magic numbers have not yet been prepared to spoonfeed those environmental quality agencies of limited vision and inability to move proactively for a longterm environment;
- (b) the demonstrated residence in Columbia River organisms of toxic, population-threatening levels of PCBs that are indistinguishable toxicologically from dioxins and furans (and which are therefore necessarily cumulatively toxic with dioxins and furans);

- (c) the human health-protective basis for Oregon's water quality standard for 2,3,7,8-TCDD, namely the longterm accumulation of 2,3,7,8-TCDD in fish that will be consumed;
- (d) the growing body of evidence that humans living in industrialised nations are accumulating large, persistent, and dangerous burdens of 2,3,7,8-TCDD in their milk and bodies;
- (e) the clear opportunity and choice available to industrialised societies (led by their environmental agencies and state and federal governments) to provide (1) public information regarding the environmental and health consequences of depending on organochlorine-papermaking processes; (2) environmentally responsible regulation of organochlorine wastes and enforcement of those regulations; and (3) facilitation of the public's desire that industry be both productive and environmentally protective;
- (f) the tyranny of small decisions, i.e., the critical point at which a decision on one mill becomes, in effect, a decision on five mills and, therefore, commits Oregon to decades of continued dependence on organochlorine papermaking and decades of continued organochlorine discharges into Oregon's waters, air, food chains, nursing infants, and soil storehouse; or
- (g) the need for Oregon to look at its options for pulp and papermaking, paper consumption, pulp and paper marketing, public education, North American leadership, and innovation before making a decision whose timeline has been influenced heavily by a governor's indebtedness to a particular donor and an environmental agency director's eagerness to accommodate industrial desires.

While the DEQ has put on blinders in its eagerness to facilitate the WTD application, the EQC has no need to do so. The EQC must grapple with the need for findings on the water quality standard and on beneficial uses, consider more pollutants than just TCDD, and consider the possibility of an alternative vision where Oregon can become a leader in moving away from chlorine and dioxins.

II. VIOLATION OF WATER QUALITY STANDARDS

A. The EQC is unable to make a finding that the new discharge would not cause water quality standards to be violated.

1. Recharge of dioxin into the water from sediments.

The back-of-the-envelope estimate of allowable dumping of 2,3,7,8-TCDD into the Columbia River prepared for the EQC by the Oregon Department of Environmental Quality (DEQ) and Region 10 EPA (August 1989) is based on the patently false assumption that no 2,3,7,8-TCDD currently resides in or is available to the Columbia River water.

In fact, 2,3,7,8-TCDD remains in sediments for decades while continuously being released at varying amounts into the water.

The Columbia River ecosystem is a bank into which 2,3,7,8-TCDD has been deposited for decades and from which withdrawals have not been calculated. As pointed out by Phil Cook (Chief, U.S. Environmental Protection Agency Hazardous Waste Research Branch, Environmental Research Lab, Duluth MN), it is necessary to run a mass balance model for the lower Columbia River in order to know whether mere reduction in discharges of 2,3,7,8-TCDD into the Columbia River will result in a recovery of water quality.¹ Cook notes that the strategy of merely reducing, while still continuing discharges will not be sufficient if the sediments are highly contaminated; and that the approval of continued discharges (even if the total is at a reduced rate) may push Oregon and Washington that much further away from attainment of the required water quality standard and prevention of further harm to beneficial uses.¹

Phil Cook points out that the 2,3,7,8-TCDD (and related dioxins and furans) can reenter the water column from sediments via animals that live in the sediments and are eaten by other animals; via fish and other aquatic organisms that ingest sediments; via fish that forage for detritus and insects and other organisms at the sediment-water interface; by resuspension of sediments by river currents; desorption into water; and resuspension of sediments by dredging. Although direct discharges into the river contaminate the food chain more quickly than do contaminated sediments, the contamination by sediments can be an important source of food chain contamination.¹

4

Cook indicates that Oregon could locate areas of sedimentation (e.g., behind dams) that would indicate the degree of sediment contamination at various places in the river and would be able to produce a mass balance model for the system.

The EQC is aware of the falsity of the assumptions behind the DEQ and EPA assurances to the EQC that the EQC can legally approve more dumping of 2,3,7,8-TCDD into the Columbia River (see NCAP testimony to the EQC, September 8, 1989). An EQC decision made to approve a new discharge of dioxin on the basis of such patently false assumptions would defy logic and evade the responsibility to be accountable to scientific information.

The EQC should require that evidence (direct and indirect) currently available regarding the storage, movement, and bioaccumulation of 2,3,7,8-TCDD in the Columbia River ecosystem be compiled so that an analysis of water quality would at the very least be based on what people think is probably happening regarding 2,3,7,8-TCDD in the River.

2. The likelihood of other dioxin reductions.

The measures that would supposedly eventually provide compliance with a not-yet-prepared waste load allocation have not been implemented and in fact (a) indications are that enforced compliance will be challenged; and (b) Oregon and U.S. history abound with examples of industrial facilities being constructed quickly (i.e., the WTD mill would be ready in 1992) while regulatory processes lag and languish (i.e., so-called "individual control strategies" will most likely not be in place as scheduled in June 1992).

The EQC has a responsibility to judge the distance between demonstrated realities and DEQ fantasies. If the discharge is approved, the mill will be built by mid-1992; do you have any reason to believe that all Washington and Oregon mills (including the Oregon mill not considered in the back-of-the-envelope calculations) will all have agreed to and complied with the calculated reductions by mid-1992? Did we achieve the goals of the Clean Air Act and Clean Water Act as originally envisioned? Does the sun shine at midnight in Oregon in midwinter?

3. The DEQ's tre conclusion and desire to weaken the standards. One of the best indications of what the DEQ staff really believes about the likelihood of the Columbia River being in compliance with the 2,3,7,8-TCDD

water quality standard is the fact that the DEQ is getting prepared to attempt to alter the water quality standard (which the paper industry very much wants the DEQ to do²). The DEQ notes in its October 5, 1989 Addendum to you that "The Department has also been formally requested to reevaluate the applicability of the 0.013 ppq TCDD standard.

Why repeal the current standard unless it is likely to cause trouble when a new chlorine-based pulp mill is built and ready to open? But if it is likely to cause such trouble, the EQC cannot approve the mill's 2,3,7,8-TCDD discharge now.

The DEQ also suggests in its October 5, 1989 memorandum to the EQC that maybe the rules should be changed so that EQC could approve multi-year "temporary overloads" to water quality limited streams. The suggestion of a rule change again indicates that there are, in fact, water quality problems.

(A side note: At the September 8, 1989 EQC meeting, Commissioner Henry Lorenzen asked whether the EPA hadn't recently changed their estimate of the potency of the carcinogen 2,3,7,8-TCDD. In fact, on June 27, 1988 the Reagan Administration EPA proposed choosing a 2,3,7,8-TCDD cancer potency number somewhere between several⁵ potency numbers generated via different cancer models. The number chosen would have made 2,3,7,8-TCDD look 16 times less potent as a carcinogen. The proposal was widely and severely criticized as having no scientific basis at all (e.g., no new data had been offered indicating the cancer-causing potential to be lower) and for being politically motivated; the EPA eventually withdrew the proposal.⁵

When the Northwest Pulp and Paper Association submitted comments to the DEQ on July 31, 1989 saying "Scientific review after publication of the [EPA] Water Quality Criteria recommends that EPA increase by a factor of 16 the acceptable dioxin concentration representing a one in a million risk level," and cited the 1988 EPA proposal, the Association was being disingenuous: In their same comments, the Pulp and Paper Association also cited EPA's Guidance for Section 304(1) Listing and Permitting of Pulp and Paper Mills, dated March 15, 1989, but did not mention that this document states that the EPA proposal to alter the cancer potency of 2,3,7,8-TCDD had been dropped: "2,3,7,8-TCDD is a highly potent carcinogen which probably affects humans. The Science Advisory Board recently reevaluated the potency factor used in calculating the national water quality criterion for the pollutant, and recommended that the factor remain unchanged.")

A major choice is before Oregon (and the EQC): Do we protect the environment and Oregonians by changing environmentally destructive behaviors, or do we protect environmentally destructive behaviors by changing the rules? Which will the EQC choose to protect?

B. Bioconcentration calculations suggest the Columbia River is much farther over the standard than claimed by DEQ.

The EQC must critically examine numbers if they are simultaneously going to invoke the Oregon Water Quality Criterion formula and the DEQ's back-of-the envelope Columbia River TCDD Analysis. Here is major discrepancy: The bioconcentration factor being relied upon for determination of the water quality standard, when used in conjunction with real-life Columbia River fish contamination data, indicates that Columbia River water contamination is dozens of times over the water quality standard. Here is a step-by-step explanation:

The water quality criterion for 2,3,7,8-TCDD that was adopted by Oregon is based on allowing one in a million citizens to be given cancer as a result of drinking water and consuming fish and shellfish from water that has been contaminated with 2,3,7,8-TCDD.

The EPA first estimated the daily dose of 2,3,7,8-TCDD that would cause one in a million citizens to contract cancer. The EPA then calculated that 94.2% of human exposure to 2,3,7,8-TCDD from contaminated water would be via consumption of fish and shellfish (6.5 grams/day). The remaining 5.8% of 2,3,7,8-TCDD exposure was calculated to result from drinking water (2 liters/day).

The fish were assumed to bioaccumulate 2,3,7,8-TCDD 5,000 times above the concentration in water. (This assumption was later shown by EPA to be false: Philip Cook, EPA Chief of the Hazardous Waste Research Branch in Duluth, MN noted in a 1987 memorandum that "[The] EPA Water Quality Criteria Document presently uses a value of 5000 for the 2,3,7,8-TCDD BCF [bioconcentration factor]. We determined a value of 66,000 for carp and 97,000 and 159,000 for fathead minnows at two different exposure concentrations."⁴ (Emphasis added.)

As a result of calculating how much 2,3,7,8-TCDD in fish and drinking water would cause one cancer in every million citizens, the EPA back-calculated (with the woefully inadequate bioconcentration factor of 5,000) that 0.013 parts per quadrillion (ppq) 2,3,7,8-TCDD would be associated with cancer-causing levels in fish and water.

The Oregon Water Quality Criterion is therefore based on the assumption that fish bioconcentrate 2,3,7,8-TCDD 5,000 times. This means that if, for instance, a fish caught in the Columbia River were to contain 5,000 ppq 2,3,7,8-TCDD, the water would contain 1 ppq 2,3,7,8 TCDD. At 1 ppq, the water would be 77 times over the water quality standard of .013 ppq (i.e., $1 \div .013 = 76.92$).

Now let's take the levels (ppq) of 2,3,7,8-TCDD that have been found in Columbia River fish. Table A indicates results from the four fish samples taken from the Columbia River in Oregon in the region of pulp mills during the U.S. Environmental Protection Agency's National Bioaccumulation Study. In Table A, each 2,3,7,8-TCDD fish contamination (in ppq) is divided by 5,000 to calculate the ppq 2,3,7,8-TCDD in the Columbia River water. That number is divided by 0.013 ppq (the water quality standard) to determine the number of times the water contamination exceeds the water quality standard. According to the four fish samples and a bioaccumulation factor of 5,000, Columbia River water is 34 (thirty-four) times over the water quality standard.

In that case, the River still won't be in compliance with the water quality standard after the reductions fervently hoped for by Oregon DEQ. (The DEQ back-of-the-envelope calculation indicates the DEQ will only have to worry about a river seven times over the standard).

C. The current water quality standard may not be protective enough.

1. Bioconcentration data indicate that the standard must be made more stringent.

EPA researcher Phil Cook's documentation that at least some fish bioaccumulate 2,3,7,8-TCDD at least 159,000 times indicates that the water quality criteria for 2,3,7,8-TCDD underestimate the cancer incidence that is associated with a given level of 2,3,7,8-TCDD water contamination. If fish bioconcentrate 2,3,7,8-TCDD at a rate of 159,000 times rather than a rate of 5,000 times, then the water quality standard will have to be accordingly lowered about 32 times below 0.013 ppq in order not to give more than one Oregon citizen in every million cancer from fish and water contaminated with the mills' 2,3,7,8-TCDD effluent. This does not even count the other dioxins and furans and toxic organochlorines in the effluent that also add to the cancer rate.

If the DEQ looks at these more recent bioconcentration data and reevaluates the standard, the DEQ will have to be responsible for a much greater lowering of the 2,3,7,8-TCDD contamination of the River than they are currently planning.

- 2. The standard ignores the continued uptake of 2,3,7,8-TCDD into fish from contaminated sediment even if current discharges of 2,3,7,8-TCDD into the water are lowered.

Fish become contaminated with 2,3,7,8-TCDD and 2,3,7,8-TCDF because dioxins and furans are fat soluble and, like DDT and PCBs, bioaccumulate through food chains (e.g., plankton-fish-bald eagles) in the lipids of organisms. When chlorines are present at the 2, 3, 7, and 8 positions on a dioxin or furan, the dioxin and furan are protected from being metabolized by such organisms as fish, rodents, cattle, and humans (For some reason, crabs bioaccumulate many more of the dioxin and furan congeners. Their hepatopancreas seems to prevent metabolism of dioxins and furans; they are therefore good indicators of the accumulation of dioxins and furans in an aquatic environment).

Once stored in an organism, 2,3,7,8-TCDD is only very slowly metabolized and eliminated, although it can be released to the body at higher rates during weight loss or released into milk fed to infants during lactation by mammals (e.g., humans, cattle).

(I suppose DEQ would, as they have in their October 5 Addendum regarding "attenuation" of 2,3,7,8-TCDD in the Columbia River, say with satisfaction, "Look, we have concluded that adult women with infants don't have as much 2,3,7,8-TCDD in their bodies as previously calculated: It is attenuated by their babies!")

Far too little is known about the relationship of changes in sediment contamination to fish contamination levels,4 but evidence points to a longterm relationship between soil storage of organochlorine contaminants and continued contamination of the food chain. The EPA indicates that "...recent data indicate that the half-life of 2,3,7,8-TCDD in soil is about 10-12 years."

One study to determine the bioavailability of 2,3,7,8-TCDD to fish from sediments involved exposing carp to contaminated sediment. The fish were sampled on days 0, 15, 30, and 55; the contaminated sediment was then removed, and the fish were further sampled on days 85, 150, and 355. The carp exposed to sediment containing 39 pg/g (ppt) 2,3,7,8-TCDD had accumulated 7.5 pg/g (ppt) after 55 days but had not reached a steady state (i.e., they were still accumulating the 2,3,7,8-TCDD). After 205 days in clean water (i.e., 205 days after all contaminated sediment had been removed), the fish still retained 67% of the 2,3,7,8-TCDD they had accumulated during the 55 days they had been exposed to contaminated sediment (i.e., taking growth dilution into account).

The data in the report produced under contract to the Army Corps of Engineers, Ecology of Bald Eagles on the Lower Columbia River, show that DDT remaining in Lower Columbia River area sediments from DDT spraying at least 17 years ago (when DDT was banned) is still being taken up by, and accumulating in, fish (the food of eagles) at levels high enough to be causing thinning of bald eagle egg shells and low reproductive rates. DDT, like 2,3,7,8-TCDD, is an organochlorine compound that adsorbs to sediments, is highly lipophilic (going into fat), and bioaccumulates in food chains.

Oregon certainly has a responsibility to estimate conservatively the fate of dioxin currently in the sediments and Columbia River food chain before determining that the protection supposedly offered to most citizens by the 2,3,7,8-TCDD water quality standard will not be violated by continued discharge of dioxin into the Columbia River dioxin "bank" as a result of an approved new source of dioxin discharge.

D. Summary of Deficiencies

The EQC cannot claim to have made a finding that a new discharge will not cause water quality standards to be violated or beneficial uses impaired unless the EQC cynically says:

(a) "We don't have a sediment standard and we don't need to know how much 2,3,7,8-TCDD is in the sediments or how much is recharging into the river system;

(b) "we don't have a fish standard and so we don't need to know how much 2,3,7,8-TCDD is in the fish that people are eating (i.e., their major source of exposure

to this carcinogen, teratogen, immunosuppressant, hepatic toxin, and reproductive toxin);

(c) "we only have a water standard the noncompliance with which we can't directly measure, and as for indirect calculations, we are going to assume away every fact that could suggest violation, including any 2,3,7,8-TCDD migrating downstream from other pulp mills and other sources;

(d) "we don't want to become informed about what is currently known regarding the persistence of 2,3,7,8-TCDD in sediments and the bioavailability of this dioxin for continued and longterm contamination of the water and the food chain (including humans); and so...

(e) "we therefore feel that the water quality is just fine. More can be dumped in every day."

"Ok, fellow Oregonians?" No.

It would be profoundly discouraging to see an independent, citizen oversight body like the EQC act as if it doesn't know that the Columbia River is already and will most likely continue to be in violation of a one-in-a-million cancer risk from consumption of 2,3,7,8-TCDD-contaminated fish for a long time in the future -- even without approving dumping of dioxin by another new and unnecessary source.

If ever we needed a demonstration of the reasons for Oregon's unique system of putting lay citizens in charge of "expert," but possibly captured agencies, the WTD permit proposal and associated 2,3,7,8-TCDD issues provide that demonstration.

III. THREAT TO AND IMPAIRMENT OF BENEFICIAL USES

- A. The EQC is unable to make a finding that the new discharge will not threaten or impair any recognized beneficial uses.
1. The EQC must look at the cumulative adverse impacts from various toxic substances on wildlife along the Columbia River.

The bald eagle is an endangered species and its reproduction is reduced on the lower Columbia River due to contamination by DDT and PCBs. As the 1988 report prepared for the U.S. Army Corps of Engineers noted, "The results of this study revealed high concentrations of DDE [a metabolite of DDT] and PCB's in bald eagle eggs and carcasses. Significant eggshell thinning and low reproductive success were associated with the presence of these contaminants in the eagle population on the LCR [lower Columbia River]." (Emphasis added.)

The report notes that (a) the eagles are obtaining the DDE and PCBs from fish; (b) the DDE is being made available from stores in Columbia River sediments [!]; and (c) PCBs are entering the Columbia River system at the present time from sources in plastics, coolants, and electrical transformers. "[Management emphasis] should be placed on the entire Columbia River system and all potential sources of environmental contaminants," the report concludes.

This finding is not an isolated one. In 1980, researchers at the Patuxent Wildlife Research Center and Columbia National Fisheries Research Laboratory documented PCB residues in six of nine Columbia River mink livers that were as high as those reported in livers of experimental female mink that experienced total reproductive failure. River otter livers from the same area (lower Columbia River) contained even higher levels of PCBs, and the researchers noted that the river otter harvest along the Lower Columbia River has declined in the last three decades, whereas the statewide harvest trend is upward. Lower Columbia River collections also showed the highest organochlorine pesticides (mainly DDE) in both species of any region in Oregon.

Fish species collected in 1986 from the Lower Columbia River by US Fish and Wildlife researchers were found to contain DDE, DDD, and PCB concentrations that "appear to be elevated to an extent that may impact those species in higher levels of the food chain that use fish as part

of their food resources (e.g., bald eagles, gulls, herons, otters)."²²

What is important here is the fact that 2,3,7,8 TCDD and PCBs act by the same toxicological mechanism. As the EPA notes, "A number of reviews and comparative studies [citations] clearly indicate that the toxic halogenated mixtures and individual compounds (including the PCDDs [dioxins], PCDFs [furans], PCBs and PBBs) elicit similar toxic and biologic responses..."¹⁰ (p. 8-74, emphases added). Likewise, "These [cited] observations support a common mechanism of action for all the toxic halogenated aryl hydrocarbons [citations]."¹⁰ (p. 8-75). I enclose the EPA discussion and citations as Attachment A.

Simplified, the toxicological mechanism of 2,3,7,8-TCDD, PCBs, and other related halogenated aryl hydrocarbon compounds involves binding of 2,3,7,8-TCDD (and related compounds) to a protein called the Ah receptor in organisms such as humans and mice. The Ah receptor is a gene regulatory protein having some normal function in basic cellular processes. The binding of 2,3,7,8-TCDD to this protein is followed by migration of the dioxin-protein complex into the nucleus and interaction with nuclear genetic material. This interaction results in the induction of cellular enzymes (e.g., aryl hydrocarbon hydroxylase or AHH and other monooxygenases) that mediate the cells' response to aromatic hydrocarbons such as PAHs (produced in combustion of organic material).^{10,12}

The results of the mediated response of the cells to certain environmental contaminants include toxicity to the kidney, immunotoxicity, porphyria,¹² body weight loss, birth defects, and cancer promotion. The events between binding of the 2,3,7,8-TCDD to the protein and ultimate biological responses are not clear and other factors are involved in the processes. It appears that the AHH induced by 2,3,7,8-TCDD is capable of turning a variety of potential carcinogens ubiquitous in the environment into active carcinogens; hence the association of 2,3,7,8-TCDD exposure with multiple types of tumors.

At any rate, the fact that PCBs and 2,3,7,8-TCDD operate by the same mechanism means that the DEQ and EQC must consider the cumulative impacts of adding 2,3,7,8-TCDD (and other dioxins and furans) to the known PCB load when making a finding whether the new, cumulative discharge will not threaten or impair any recognized beneficial uses.

In 1983, then EPA Assistant Administrator for Pesticides and Toxic Substances Dr. John A. Moore testified to Congress regarding the ramifications of substances having common mechanisms of toxicity:

"[T]he 'dioxin' we all refer to is but one member of a chemical family. . . . Members of another closely related family of chemicals, the chlorinated dibenzo-furans, are frequently found as contaminants in products that contain dioxins. The pattern of disease that the other toxic dioxins and dibenzofurans produce is indistinguishable from th[at] observed with TCDD. Basic research with these chemicals indicates that a common mechanism is probably involved in their toxicity. Therefore, the public health risk should be assessed by calculating aggregate exposure, to all of these chemicals, not only to TCDD."¹³ (emphasis added).

In other words, the effects of the various dioxins and dibenzofurans are cumulative, and, since PCBs operate by the same toxicological mechanism as dioxins and furans, they are all mutually cumulative.

Approval of a new discharge of 2,3,7,8-TCDD thereby would approve addition to the toxicological load that currently threatens an endangered species which is resident on the lower Columbia River. the beneficial use by bald eagles and by Oregon families who enjoy them will be impaired by the discharge of more dioxins and furans into the Columbia River.

2. Has the DEQ told you that federal wildlife agencies oppose this new discharge of 2,3,7,8-TCDD? In its October 5, 1989 addendum to its staff report to the EQC, the DEQ makes the astonishing statement that "The Department feels that there is no evidence that wildlife would be significantly threatened or impaired by WTD's new discharge and feels that the findings required by (B) are met." (Emphases added).

In reporting to you that the DEQ "feels that there is no evidence that wildlife would be significantly threatened or impaired by WTD's, new discharge" (emphases added), the DEQ has perhaps not passed along to you the US Fish and Wildlife Service's July 1989 comments on the proposed NPDES permit for the WTD chlorine-based mill.¹⁷ I enclose the U.S. Fish and Wildlife Service comments as Attachment B and quote thus from them:

"We [the US Fish and Wildlife Service] are concerned about the potential water quality degradation associated with this project and feel the subject permit has not

adequately addressed this issue. The toxic substances of greatest concern are the chlorine based compounds [such as dioxins and furans]... 2,3,7,8-TCDD is exceedingly stable, readily incorporated into aquatic and terrestrial ecosystems, extraordinarily persistent, virtually impossible to destroy, and readily bioaccumulates in biological systems. Laboratory studies with birds, mammals, and aquatic organisms have demonstrated that exposure to 2,3,7,8-TCDD can result in acute and delayed mortality as well as carcinogenic, teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels which represent significant threats to human health, the environment, and fish-eating wildlife. The potential for biomagnification of organochlorine compounds is high. Thus, organisms at the upper end of a food chain, such as bald eagles, great blue herons, or salmon may accumulate concentrations of chlorinated dioxins that are hazardous to their reproductive capabilities and survival....

"Before the [NPDES permit for WTD] is considered for issuance the permittee should complete...a modeling effort to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms... In addition, acute and chronic bioassays of the mixing zone and mixing zone boundary should be conducted. No sublethal effects on growth, reproduction, or survival of aquatic organisms should occur at the mixing zone boundary...

"Thus, it is appropriate for the DEQ to consider requirements that all new pulp mills use technology that produces and discharges no dioxins. It is our understanding that this technology is available and is being used in some mills operating in Sweden. If not yet available, then we recommend the DEQ question the suitability of adding another pulp mill's effluent to the Columbia River.

"The Service requests that the DEQ not issue the NPDES permit until additional information is provided. Because of the magnitude of the proposed project, the likely degradation of water quality in the Columbia River, and the potential for significant impacts we also recommend that the DEQ give serious consideration to the long range and cumulative impacts of this project."

Has the DEQ informed the EQC of these concerns of the US Fish and Wildlife Service? Has the DEQ considered any cumulative impacts of the WTD mill?

3. How low are amounts of 2,3,7,8-TCDD that harm wildlife?

In its October 5, 1989 Addendum, the DEQ disingenuously repeats the industry line that studies showing acute and chronic damage to aquatic life have been "at water concentrations that are orders of magnitude above the .013 ppq standard." This industry line is disgustingly misleading for two reasons:

- a) The lowest doses that laboratories have been able to reliably produce have damaged and killed fish. When young rainbow trout were exposed to 38 ppq 2,3,7,8-TCDD, the trout displayed significantly reduced growth, significantly abnormal behavior, and significantly reduced survival.¹⁴ (It should be appreciated that 38 parts per quadrillion 2,3,7,8-TCDD is equivalent to 38 seconds in 32 million years.)

(Note: The DEQ makes the statement in its October 5 addendum that "Very little data exist on the acute and chronic toxicity of TCDD to aquatic life." It is true that until recently there little research has been undertaken on this, but DEQ is again being disingenuous: the research that has been done finds, uniformly, that 2,3,7,8-TCDD is astonishingly toxic to aquatic organisms. The 1987 introduction to the study that exposed rainbow trout to the lowest dose ever experimentally produced reviews this literature¹⁴ (Attachment C) It would be more meaningful if the DEQ were able to point to experimental work that showed lack of 2,3,7,8-TCDD toxicity to aquatic organisms.)

The federal Australian Commonwealth Scientific and Industrial Research Organisation, in reviewing the toxicity of 2,3,7,8-TCDD to rainbow trout noted that "it may be the lowest lethal concentration of any toxic substance ever recorded."²⁵

- b) When 2,3,7,8-TCDD is found at lower levels in the field, it is accompanied by other organochlorines (e.g., in mill effluent) and at that point the industry (and apparently DEQ) then whines that the damage observed in those field situations cannot be attributed unequivocally to 2,3,7,8-TCDD rather than to the other toxic compounds present. But of course these other compounds, e.g., chlorinated guaiacols, are produced by pulp mills, too, posing acute and chronic hazards that have been largely overlooked by regulatory agencies

myopically focused on the 2,3,7,8-TCDD water quality standard.

One study, for instance, looked at the effects of the chlorinated flushings of the Swedish Norrsundett mill, an oxygen delignification kraft mill using chlorine dioxide to substitute for some of the chlorine in the bleaching. The mill dropped its consumption of free chlorine from 12,000 tons/year to 7,000 tons per year during the period of the study (1983-1986).¹⁵ (The WTD mill, at its proposed 50% substitution of chlorine dioxide for chlorine would use approximately 6,400 tons of chlorine per year. This figure is based on an assumption of 28.3 lbs chlorine/ADMT per day and is interpolated from use of 17 lbs/ADMT per day at 1240 ADMT a day, 365 days per year for 70% substitution of chlorine dioxide. This may not be accurate. One problem is that WTD has not indicated a mass balance for its use of chlorine at its proposed actual functioning of 50% chlorine dioxide substitution. The DEQ apparently does not want to know the path of chlorine through furnaces, pulp, river, and landfill, but this is vitally important to public interest advocates such as NCAP. There can be no reliable estimates of the likely consequences of WTD's use of chlorine until a mass balance is prepared, which has not been done despite our requests for one.)

The researchers found that perch as far away as 8-10 km from the Norrsundett mill's effluent pipe have reduced gonad size (preventing normal reproduction), are leaking plasma chloride (which they need for operating in ocean, brackish, and fresh water), have suppressed immune systems (which weakens their defense against viral and other diseases), and have increased production of cytochrome p-450-dependent enzymes that will metabolize numerous other compounds in their environment into carcinogens.¹⁶

A three year study at this plant found that "Near the effluent outlet the fish biomass was low, and the species composition of the fish community had changed. Perch (Perca fluviatilis L.) exhibited reduced reproduction and disturbed physiology in all parts of the receiving body of water. The effluent also affected the diversity, biomass and distribution of invertebrates and plants."¹⁵

4. The issue is all the organochlorine compounds in pulp mill effluent, not just 2,3,7,8-TCDD.

Dioxin, of course, is only one of several hundreds of chlorinated compounds emitted by any chlorine-based mill.¹⁸ Most of these compounds have never been chemically analyzed,¹⁹ but some have been tested in wildlife.

Swedish researchers exposed fish (fourhorn sculpin, Myoxocephalus quadricornis) to just one of the hundreds of compounds present in kraft pulp mill effluent (i.e., tetrachloro-1,2-benzoquinone) at 0.1 ppm for 4.5 months.²⁰ The fish experienced:

- a) spinal deformities;
- b) changed mechanical properties of vertebrae;
- c) an increase in red blood cells (a response to dealing with increased oxygen needs from increased metabolic and detoxification activities);¹⁶
- d) an increase in neutrophilic granulocytes in white blood cells (a response to bacteria, inflammations, cell/tissue damage, or stress); and
- e) an increase in liver ascorbic acid (involved in detoxification activity).

The fact that the effluent of chlorine-based mills necessarily contains dioxins, furans, and hundreds of other organochlorine compounds shows the necessity of considering the inevitable companions of 2,3,7,8-TCDD before making a finding that the new discharge of 2,3,7,8-TCDD will not threaten or impair any recognized beneficial uses.

To make a finding that the new discharge of 2,3,7,8-TCDD and its accompanying hundreds of organochlorines will not threaten or impair any organisms exposed to the discharges, the DEQ and EQC must do more than "feel" that there is no evidence that wildlife would be impaired. Swedish and other studies exist to show that organisms are impaired by bleach kraft mill effluent; the burden of proof must be on the EQC to decide on evidence that the effluent will not impair any recognized beneficial uses.

Will you operate by your standards? What are citizens to do if they have to watch an EQC say that a standard has been met because their agency, eager to

please industry, tells the EQC that the Department "feels that there is no evidence" that wildlife would be threatened or impaired?

As 2,3,7,8-TCDD is toxic at every dose that has been tested on laboratory animals and in the field, the standard may not be able to be met by a chlorine-dependent pulp mill, given our growing understanding of the effects of dioxin. If environmental protection standards are to mean anything, however, then we must have the humility to change our behaviors when we learn that our behaviors are not meeting the environmental quality standards we have set for ourselves as a society.

5. And what of humans?

A recent review of literature, funded by the American Paper Institute, the pulp and paper mill industry association and lobby group, provides an excellent review of animal studies and human studies of the effects of dioxins and furans.¹² This report notes that the accumulation of dioxins in human tissues worldwide is resulting in background levels in human bodies that are close to levels causing health damage in laboratory animals, meaning that it is possible "some individuals are at risk of adverse health consequences from any additional sources of exposure. In such situations, a threshold model is not useful for estimating incremental health risks from additional sources of exposure."

The review is saying that it may no longer be useful to consider how much more 2,3,7,8-TCDD someone can ingest from fish in the Columbia River; any more exposure may be enough to make some individuals ill. When we're making ourselves sick from dioxins, isn't it time to look at alternatives to chlorine-dependency in our society?

At a 1987 meeting of the World Health Organization's Working Group on Assessment of Health Hazards in Infants Associated with Exposure to PCBs, Dioxins and Related Compounds in Human Milk, Dr. Astrup Jensen of the Danish National Institute of Occupational Health presented a paper entitled "Polychlorobiphenyls (PCBs), Polychlorodibenzo-p-dioxins (PCDDs) and Polychlorodibenzofurans (PCDFs) in Human Milk, Blood and Adipose Fat."²¹

As a mother as well as a scientist, I wish to quote from this paper because I think the material bears on whether the EQC can make a finding that the approval of a new discharge of 2,3,7,8-TCDD into a river from which people drink water and consume fish and which is already

contaminated with 2,3,7,8-TCDD, other dioxins and furans, and PCBs will not threaten human health: "[PCBs, dioxins, and furans] circulate in the body associated with lipids, thus highest concentrations are obtained in fat-rich tissues such as adipose tissue and milk... Lactation is the most important elimination route for such chemicals [citations], and because breast milk contains higher concentrations of these chemicals than most other diets, breast fed infants happen to be a special risk group for potential toxic effects [citation]."

"It is remarkable that the PCDDs [dioxins] detected in human milk all have the toxic 2,3,7,8-substitution by chlorine."

"Levels in adipose tissue from developing countries are much lower than levels from industrialized countries, and tissue samples frozen 100 years ago contained no measurable PCDDs [citation]." (Emphasis added.)

"The average levels measured in breast milk [of women in industrialized nations] have only been a factor ten [sic] lower than levels affecting animals and possible [sic] breastfed infants...."

"In an overall assessment it may be wrong to only look at one contaminant at a time, because these organohalogenes [e.g., organochlorines] have similar targets in the body, indicating a potential for toxicological interactions."²¹

Alternatives to chlorine-dependency exist. Will we reach for them or will we change the rules so we can start another round of construction of chlorine-dependent mills and continue the injection of 2,3,7,8-TCDD into our ecosystem and bodies and infants?

IV. ALTERNATIVES EXIST TO PRODUCING PULP WITH CHLORINE

Alternatives exist to our continued degradation of the lower Columbia River ecosystem with chlorinated and dioxin-contaminated pulp mill effluent. NCAP requests that the EQC postpone any decision on approval of a new source of discharge of 2,3,7,8-TCDD into the Columbia River until the EQC can attend a public forum exploring the economic, environmental, marketing, and leadership potential that faces Oregon should it lead the United States toward production of unbleached and non-chlorine bleached paper products. NCAP has formally requested the Oregon Legislature Joint Committee on Energy, Environment, and Hazardous Waste to convene such a forum in early December. Sen. Dick Springer and Rep. Ron Cease, Joint Committee co-chairs, have expressed interest in this suggestion and feel that it is feasible.

If the approval of a major new discharge of dioxin is given for WTD prior to such a forum, approval will be given for other chlorine-based mills, and there will be use for such a forum and debate; the EQC will have committed Oregon to decades of expanded organochlorine papermaking, dioxin discharges, and waste of trees.

Although the North American public has not been extensively informed of the connection between bleached paper and organochlorine wastes and 2,3,7,8-TCDD and other toxic organochlorine compounds in drinking water, cows' milk, breast milk, fish, shellfish, tampons, coffee filters, baby diapers, municipal incinerator discharges, etc.; and although the North American public has been offered essentially no alternatives to chlorine-contaminated paper products, the U.S. pulp and paper industry cynically whines that there is "no market for chlorine-free paper products." In fact, chlorine is not necessary to bleach pulp and bleached pulp is not necessary for many, perhaps most, paper products.

A. New pulp mills can produce bleached pulp without chlorine for paper products that "have" to be white.

The claim by the U.S. pulp and paper industry that there is no market for chlorine-free paper products statements is belied by the response of Swedish, British, and European consumers who have been informed of the environmental contamination associated with chlorine-based paper making and are being offered chlorine-free papers on the market.

I enclose as an example, a recent article²³ in the British science journal, New Scientist (Attachment D). This article notes a breakthrough in which even computer paper can be produced using hydrogen peroxide rather than chlorine as a bleach. "One of Europe's largest suppliers of paper this week launched the world's first 'environmentally friendly' stationery for

computers, " the article notes. "Roffs Stralfors, a Swedish paper company, has run trials of the paper on the Swedish market and now plans to exploit the large potential market in Britain.... Several large companies in the computing and banking industries have tested the paper...[and] are keen to use the paper as an easy way to adopt a 'green' image. Such industries use huge amounts of paper in pre-printed form, for example in the continuous listings that make bank statements."

The production of chlorine-free bleached computer paper is a breakthrough in part because "the paper has to be of a very high quality in order to be suitable for laser printing. It must also be able to run as a continuous roll through a printer. The paper must also stack well and have a high surface strength, so that it does not produce paper 'dust'."²³

Isn't this "state of the art" technology for making white paper? A process that avoids the dumping of dioxin and hundreds of other organochlorines into a nation's waters around the clock?

B. New (and existing) pulp mills can produce unbleached pulp for paper products that do not need to be sparkling white.

How much of the paper you use each day needs to be white? Do you ever write on yellow legal pad paper? Do you ever write on pale green paper to cut down on the eyestrain of looking at bright white paper? Do you care if your coffee filter or milk cartons are tan? Do you think women would mind using a tan tampon if they were informed that 2,3,7,8-TCDD migrates out of the tampon into fats in their body? Do you think you would mind placing a tan paper diaper on your infant if you knew 2,3,7,8-TCDD would migrate out of a chlorine-contaminated diaper into lipids in your infant's body?

Isn't this state-of-the-art technology? To provide consumers with quality paper products that do not poison the consumers and the environment?

Do you remember when agribusiness said there was no market for organically grown food and that consumers insisted on having cosmetically perfect fruit and vegetables? Once consumers walked into Safeway, did they have a choice as to whether they bought food free of synthetic pesticides? Have you read the new National Research Council report, Alternative Agriculture, which puts the lie to years and years of chemical agribusiness claims that environmentally sound organic farming is not profitable or productive? Have you been following the heavy and growing market demand for organically grown food?

Do you remember how quickly Americans abandoned spray cans that contained chloro-fluorocarbons (CFCs) when they learned that the CFCs are harmful to the earth's ozone layer?

C. Producing bleached pulp without chlorine and producing unbleached pulp uses 100% of each tree rather than throwing away 50% of each tree.

With chlorine bleaching, 50% of the tree is thrown away because the chlorine and chlorine dioxide are used to remove and throw away the lignin in the tree. Bleached chemi-thermomechanical pulping (which uses hydrogen peroxide instead of chlorine and chlorine dioxide to bleach) retains the lignin in the final paper as does paper made without bleaching. That is twice as much paper from each tree and reduction of organochlorine-contaminated organic wasteloads into Oregon's rivers.

As the New Scientist article, notes, mechanical pulping has other advantages over chlorine bleaching: "It is less likely to chop the fibres, as happens in chemical pulping, so the resulting paper is stronger. TMP [thermomechanical pulping] also makes use of all of the wood so it needs roughly half as much timber to produce the same weight of paper as chemical pulping."²³

Isn't this state-of-the-art technology? To produce stronger paper, white paper, and twice as much paper from one tree than when chlorine and chlorine dioxide are used in the process?

D. Oregon can provide leadership for North America to follow the examples of Sweden, Britain, and other European countries who are producing, selling, consuming, and marketing chlorine-free paper products.

At the present time, NCAP is unable to purchase a supply of unbleached or non-chlorine bleached paper for our writing and computer. We are forced to compose this objection to approval of dioxin discharges from a chlorine-based mill on organochlorine-contaminated, bright white computer paper. The EQC Commissioners are likewise constrained to use organochlorine-contaminated paper for nearly all of their paper consumption. that is not a market choice. It is a terribly constricted market controlled by an inflexible industry that has been allowed to contaminate North American waterways for decades with dioxins, furans, and other toxic organochlorine compounds.

While Oregon could provide leadership for North America in addressing this major, longterm environmental problem, Oregon will not be the first in this game: Sweden, Britain, and other European countries are ahead of us. The people of Tasmania, the state of Australia most dependent on the timber industry and (coincidentally) the state with the highest unemployment rate, recently rejected a \$1 billion investment in a new, state-of-the-art chlorine-based pulp mill that was going to use oxygen delignification and

chlorine dioxide substitution for chlorine....because it was going to²⁵ produce tons of organochlorine wastes, including dioxin.

Oregon can, however, provide for North America the kind of leadership Sweden has been providing for the world with its production of chlorine-free paper, its stated intention to eliminate as many uses of chlorine from its economy as possible, and its heavy investment in research documenting the damage caused by organochlorines in pulp mill effluents and waste incineration.

As Birgitta Dahl, Swedish Minister of the Environment and Energy noted at the "Dioxin 88" International Conference in Umea, "Here, it may be appropriate to emphasise a very important principle. For all substances or processes causing irrevocable damage, the strategy should be to eliminate their use entirely, as quickly as possible... This applies, for example, to freons or other substances that damage the ozone layer, or to the pulp industry's discharges of various stable, and highly toxic chlorinated substances, or to dioxins."²⁷

V. CONCLUSION

NCAP urges the EQC to:

1. Disapprove the proposed major new discharge of 2,3,7,8-TCDD into the Columbia River because:

(a) The EQC is unable to make a finding that the proposed discharge of 2,3,7,8-TCDD will not cause water quality standards to be violated; and

(b) The EQC is unable to make a finding that the proposed discharge of 2,3,7,8-TCDD will not threaten or impair any recognized beneficial uses.

2. Direct the DEQ to investigate the cumulative impacts of 2,3,7,8-TCDD, other dioxins and furans, PCBs, and other organochlorines in the Lower Columbia River sediments, water, and biota before..... so that individual control strategies for mills currently committed to chlorine-based pulp making will be adequate to reduce the current damaging organochlorine contamination of the Columbia River ecosystem.

3. Direct the DEQ to participate in and facilitate a statewide public examination of opportunities offered by alternatives to the use of chlorine and chlorine dioxide for production of paper.

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TABLE A. IF FISH BIOCONCENTRATE 2,3,7,8-TCDD 5,000 TIMES,^a WHAT DO COLUMBIA RIVER FISH CONTAMINATION LEVELS^b TELL US ABOUT THE CURRENT WATER QUALITY OF THE COLUMBIA RIVER?

<u>Site</u>	St. Helens	Wauna	Wauna	Portland	Average
<u>Fish</u>	Squawfish	sucker	squawfish	carp	—
Observed ppq 2,3,7,8-TCDD in Columbia R. fish ^b	1,280	2,780	1,730	2,860	2,162
Calculated ppq 2,3,7,8-TCDD in Columbia R. water ^c	0.26	0.56	0.35	0.57	0.44
Calculated exceedance of 0.013 ppq water quality standard ^d	20.0X	43.1X	26.9X	43.8X	33.8X

^a The Oregon water quality standard for 2,3,7,8-TCDD is adopted from the U.S. Environmental Protection Agency Ambient Water Quality Criteria for 2,3,7,8-Tetrachlorodibenzo-p-dioxin which assumes (p. c-181) that fish bioconcentrate 2,3,7,8-TCDD 5000 times and that consumption of fish and shellfish is the major source of human exposure to 2,3,7,8-TCDD in water.

^b Data from U.S. Environmental Protection Agency National Bioaccumulation Study, circulated by Region 10 EPA, June 21, 1988. NDS Phase II: Bioaccumulative Pollutant Study.

^c Contamination of water calculated by dividing observed contamination of fish by 5,000.

^d Exceedance of Oregon water quality standard calculated by dividing calculated water contamination by 0.013

Health Assessment Document
for
Polychlorinated
Dibenzo-p-Dioxins

Excerpts re:
Common toxicological
mechanism of dioxins,
furans, PCBs, and
related aryl hydrocarbons

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Office of Health and Environmental Assessment
Environmental Criteria and Assessment Office
Cincinnati, Ohio 45268

studies in which rhesus monkeys were fed small amounts of dietary 2,3,7,8-TCDD and analogy with human data on the minimum toxic dose of 2,3,7,8-tetrachlorodibenzo-p-furan (TCDF), the cumulative minimum toxic dose of 2,3,7,8-TCDD in man was estimated to be 0.1 $\mu\text{g}/\text{kg}$ (Stevens, 1981). Based on application rates (4.1 g Agent Orange/ m^2) and 2,3,7,8-TCDD concentration in the herbicide (2 ppm), the average concentration of 2,3,7,8-TCDD on sprayed surfaces of Vietnam was estimated to be $\sim 8 \mu\text{g}/\text{m}^2$. Based on accidental exposures to 2,3,7,8-TCDD in humans (industrial accidents, Eastern Missouri cases), Stevens (1981) estimated an average intake transfer factor (ratio of absorbed compound to environmentally available compound) of 1:2050 for 2,3,7,8-TCDD. Assuming this absorption-to-exposure ratio and even assuming that a soldier was directly sprayed (exposed to $8 \mu\text{g}/\text{m}^2$) for each day of his 1-year service in Vietnam, his cumulative intake would be only 1.4 μg or 0.02 $\mu\text{g}/\text{kg}$ of 2,3,7,8-TCDD (Stevens, 1981). Based on these calculations and assumptions, Stevens (1981) reported that 5 years of direct daily contact with Agent Orange would be necessary to reach a toxic level of 2,3,7,8-TCDD and felt that claims of illness caused by 2,3,7,8-TCDD in Agent Orange were without merit. Exception is made, however, for certain workers (forest industries) who may have been exposed to 2,4,5-T and 2,3,7,8-TCDD for many years.

8.3. MECHANISM OF TOXICITY

A number of studies have attempted to determine the mechanism of toxicity of 2,3,7,8-TCDD. The ultimate purpose is to provide a better estimate of man's relative sensitivity to 2,3,7,8-TCDD and other compounds having a similar mode of action. Specifically, these studies may be able to explain the reason for the marked interspecies differences in 2,3,7,8-TCDD toxicity and, thus, help determine if humans possess factors that are associated with sensitivity to 2,3,7,8-TCDD toxicity.

8.3.1. Receptor-Mediated Toxicity. Pharmacogenetic studies have played an important role in understanding the biologic and toxic effects of drugs and xenobiotics. Nebert and coworkers have shown that carcinogenic polycyclic aromatic hydrocarbons (PAHs) induce the cytochrome P-450-dependent monooxygenase AHH in certain responsive strains of mice (e.g., C57B1/6J, BALBc, C3HF/He), whereas this PAH induction activity is minimal or nonexistent in nonresponsive strains (DBA/2J) (Nebert, 1979, 1982; Nebert and Gielen, 1972; Nebert and Jensen, 1979; Nebert et al., 1972, 1981, 1983). The gene complex responsible for the induction of AHH and several other enzymes has been designated the Ah locus that comprises regulatory, structural and possible temporal genes. Extensive studies on genetically inbred responsive and nonresponsive mice (and their backcrosses) indicate that these differences are related to the Aromatic Hydrocarbons (Ah) regulatory gene (termed "Ah complex" or "AH cluster") and its gene product, the Ah cytosolic receptor protein. This receptor protein interacts with PAH ligands and the resultant PAH:Ah receptor complex translocates into the nucleus and presumably initiates the induction of AHH by a process comparable to that proposed for the steroid hormones.

Since the carcinogenic and toxic effects of PAHs are dependent on their oxidative metabolism to reactive electrophilic forms, it is not surprising that the Ah receptor plays an important role in mediating their toxicity and carcinogenicity (Kouri, 1976; Kouri et al., 1974; Benedict et al., 1973; Shum et al., 1979; Thomas et al., 1973; Legraverend et al., 1980; Duran-Reynolds et al., 1978; Robinson et al., 1975; Mattison and Thorgeirsson, 1979). Responsive mice are more susceptible to the toxic (inflammation, fetotoxicity, primordial oocyte depletion) and carcinogenic effects of PAH at organs/tissues in direct contact with the applied chemical; in contrast,

nonresponsive mice are more susceptible to the tumorigenic effects of PAHs at tissue/organ sites remote from the initial site of exposure to the PAHs. These differences in susceptibility are due to several factors including AHH-mediated toxication and detoxication.

2,3,7,8-TCDD can produce dermal lesions including epidermal hyperplasia, hyperkeratosis and squamous metaplasia of the sebaceous glands in hairless mice (HRS/J), homozygous for hr/hr locus, but not in heterozygous (hr/+) or normal haired wild type (+/+) mice. These effects on the skin seem to be mediated through the Ah receptor (Poland, 1984).

8.3.1.1. 2,3,7,8-TCDD: SEGREGATION OF ACTIVITY WITH THE Ah LOCUS -- Genetic studies also support the role of the Ah receptor in mediating the toxic and biologic effects of 2,3,7,8-TCDD. Initial studies by Poland and coworkers (Poland et al., 1974, 1983; Poland and Glover, 1975; Nebert et al., 1975) demonstrated that the microsomal AHH-inducing activity of 2,3,7,8-TCDD and 3-MC in several genetically inbred mice strains were similar. Like MC and related PAHs, 2,3,7,8-TCDD induced AHH in several responsive mouse strains (i.e., C57B1/6J). In contrast to 3-MC, 2,3,7,8-TCDD induced microsomal AHH in the DBA/2J nonresponsive mice; however, the ED₅₀ for this biologic response was significantly higher than values reported for the responsive mice. In genetic crosses between responsive C57B1/6 and nonresponsive DBA/2 mice it was also shown for both 3-MC and 2,3,7,8-TCDD that the trait of responsiveness is inherited in a simple autosomal dominant mode (Poland and Knutson, 1982). It has been suggested that the observed differences in the activities of 3-MC and 2,3,7,8-TCDD are related to their relative Ah receptor affinities (Poland and Knutson, 1982) and the pharmacokinetic and metabolic factors that would more rapidly diminish the "available" concentrations of 3-MC caused by metabolism and excretion.

Several studies with 2,3,7,8-TCDD in genetically inbred mice support the receptor mediated hypothesis. The induction of UDP-glucuronosyl transferase, DT diaphorase, δ -aminolevulinic acid, glutathione-S-transferase B, T-aldehyde dehydrogenase and choline kinase by 2,3,7,8-TCDD or 3-MC in genetically inbred mice have also been shown to segregate with the Ah locus (Beatty and Neal, 1976b; Owens, 1977; Kirsch et al., 1975; Dietrich et al., 1977; Ishidate et al., 1980; Poland and Glover, 1973a). Toxicology studies with genetically-inbred mice confirm the role of the Ah locus in mediating several toxic effects including porphyria, immunotoxicity a wasting syndrome, thymic atrophy and cleft palate formation (Jones and Sweeney, 1980; Poland and Glover, 1980; Courtney and Moore, 1971; Vecchi et al., 1980, 1983). Poland et al. (1982) also linked the tumor-promoting activity of 2,3,7,8-TCDD in hairless mice to the cytosolic receptor. In vitro studies with XB cells in culture also support the role of receptor in mediating a dose-related cell keratinization by 2,3,7,8-TCDD that resembles some of the characteristics of chloracne (Knutson and Poland, 1980). This cell line is also responsive to AHH induction and contains a cytosolic receptor binding protein. Although the murine Ah receptor has not been characterized, several studies confirm that a protein with high affinity for 3-MC and 2,3,7,8-TCDD is present in low concentrations in the hepatic (~30-50 fmolar) and extrahepatic tissues of responsive C57B1/6J mice (Greenlee and Poland, 1979; Okey et al., 1979, 1980; Poland et al., 1976; Mason and Okey, 1982; Gasiewicz and Neal, 1982; Okey and Vella, 1982; Okey, 1983; Nebert et al., 1983). In responsive C57B1/6J mice and Sprague-Dawley rats, but not in nonresponsive DBA/2J mice, the Ah receptor can be induced by pretreatment with phenobarbital, which is the only known agent at present that has been demonstrated to affect tissue concentrations of the receptor (Okey and

Vella, 1984). Although the Ah receptor has not been detected in the cytosol of DBA/2J mice, after the administration of radiolabeled 2,3,7,8-TCDD to these mice, some of the radiolabel is detected in the nuclei of the non-responsive mice. Moreover, the sedimentation characteristics of the [³H]-2,3,7,8-TCDD:nuclear protein complex in DBA/2J mice are similar to those observed with the bound Ah cytosolic receptor protein in C57B1/6J mice using a sucrose density gradient centrifugation separation technique (Okey, 1983). The cytosolic Ah receptor protein migrates into the nucleus of the cell only after binding with 2,3,7,8-TCDD (Nebert and Jensen, 1979; Nebert, 1980; Greenlee and Poland, 1979; Okey et al., 1979, 1980; Tukey et al., 1982; Gonzalez et al., 1984), and this parallels the observations noted for the interactions between steroids and their receptor proteins. The 2,3,7,8-TCDD inducer-Ah receptor complex undergoes a temperature-dependent step before gaining high affinity for DNA (Okey et al., 1980; Kimura et al., 1984). The 2,3,7,8-TCDD Ah-receptor complex thus binds to the nucleus and regulates the transcription of cytochrome P₁-450, which represents the gene product of Ah-structural loci, in mouse hepatoma cells in culture (Whitlock et al., 1984; Eisen, 1984) and in mice with various Ah genotypes (Eisen, 1984). This results in induction of AHH activity which may remain elevated for a prolonged period. Such prolongation of activity may be because cytochrome P₁-450 mRNA remains elevated even after 1 week following single exposure to 2,3,7,8-TCDD (Eisen, 1984).

In elucidating the mechanisms of 2,3,7,8-TCDD induced teratogenic effect in the formation of cleft palate in C57 mouse fetus, the presence of Ah-receptor in the palatal shelves of the embryo seems to be necessary for alteration/inhibition of terminal differentiation of the medial epithelial cells in the palate (Denker and Pratt, 1981; Pratt, 1983; Pratt et al.,

1984a,b). Pratt and Willis (1985) have even suggested utilizing growth inhibition of an established line of human embryonic palatal mesenchymal cells for in vitro short-term screening for assessment of the teratogenic potential of environmental agents.

The presence of Ah-receptor have been detected in normal lung, liver, kidney, spleen and intestine from human fetus. In addition, normal lung tissue from 10 of the 50 individuals examined were found to have Ah-receptor (Roberts et al., 1985). Ah-receptor has also been observed in cell lines of human squamous cell carcinoma at a concentration of 5-10 fmol/mg (Hudson et al., 1983; Roberts et al., 1985). Whether variation in Ah-receptor content in human is genetically determined and is a critical determinant of individual susceptibility to PCDDs is not known and warrants further investigation.

8.3.1.2. 2,3,7,8-TCDD AND RELATED TOXIC HALOGENATED ARYL HYDROCARBONS: STRUCTURE-ACTIVITY CORRELATIONS -- The evidence for a receptor mediated mechanism of action for 2,3,7,8-TCDD is supported by data reported for the effects of other halogenated aryl hydrocarbons in genetically inbred mice and other diverse animal species. A number of reviews and comparative studies (Allen et al., 1979; Kimbrough, 1974; Kimbrough et al., 1978; McConnell and Moore, 1979; Taylor, 1979) clearly indicate that the toxic halogenated mixtures and individual compounds (including the PCDDs, PCDFs, PCBs and PBBs) elicit similar toxic and biologic responses that include 1) a wasting syndrome which is manifested by a progressive weight loss and decreased food consumption by the treated animals; 2) skin disorders including acneform eruptions or chloracne, alopecia, edema, hyperkeratosis, and hypertrophy of the Meibomian glands; 3) lymphoid involution and atrophy; 4) porphyria (resembling porphyria cutanea tarda); 5) endocrine and reproductive disorders; 6) modulation of chemical carcinogenesis; and 7) the

induction of numerous enzymes including the cytochrome P-448 (or P-450c) dependent monooxygenases. It is apparent that the effects of these compounds are not manifested in all the animal species tested. McConnell and Moore (1979) summarized the pathologic findings observed in several animal species after pretreatment with PCDDs, PCDFs, PCBs and PBBs; these data illustrate the different species and organ/tissue susceptibilities to these compounds. It is also evident that for most of these effects, all the toxic halogenated aromatics elicit similar effects in these species that also contain the cytosolic receptor protein (Carlstedt-Duke, 1979; Carlstedt-Duke et al., 1979, 1981; Okey, 1983; Okey and Vella, 1982; Mason and Okey, 1982). These observations support a common mechanism of action for all the toxic halogenated aryl hydrocarbons (Poland and Knutson, 1982; Safe et al., 1982; McConnell and Moore, 1979).

Several reports have demonstrated the effects of structure on the activity of PCDDs. The most active member of this group is substituted in the lateral 2, 3, 7 and 8 positions; activity is decreased with 1) decreasing lateral substituents, and 2) increasing Cl substitution. Moreover, for several PCDDs, there is an excellent correlation between the toxicity of individual PCDD congeners in guinea pigs and mice (McConnell et al., 1978b) and their AHH induction potencies in chick embryos and rat hepatoma H-4-II-E cells in culture and their binding affinities for the C57B1/6J mouse hepatic cytosolic receptor protein (Poland et al., 1976, 1979; Bradlaw et al., 1980; Bradlaw and Casterline, 1979). Comparable structure-activity correlations have been reported for the PCDFs in which the most active compound, 2,3,7,8-TCDF, is an approximate isostereomer of 2,3,7,8-TCDD (Poland et al., 1979; Poland and Knutson, 1982). Moreover, like the PCDDs, there was an excellent correlation among the toxicity of several individual PCDFs (Yoshihara et

al., 1981), their AHH induction potencies in rat H-4-II-E hepatoma cells and binding affinities to male Wistar rat hepatic cytosolic receptor protein (Bandiera et al., 1983).

Correlations between structure-activities of PCDDs and Ah-receptor site binding, AHH induction potencies and systemic toxicity have also been suggested (Safe et al., 1984). 2,3,7,8-TCDD, the isomer substituted with Cl in all four lateral positions is most active for all of the above three parameters. Increased or decreased substitution of 2,3,7,8-substituted PCDDs tend to decrease receptor binding affinity and toxic action.

The most active PCB congeners, 3,4,4',5-tetra-, 3,3',4,4'-tetra-, 3,3',4,4',5-penta- and 3,3',4,4',5,5'-hexachlorobiphenyl, are substituted at both para and at two or more meta positions. The four coplanar PCBs induce rat hepatic microsomal AHH and cytochromes P-450a, P-450c and P-450d and resemble 3-MC and 2,3,7,8-TCDD in their mode of induction of the cytochrome P-450 isozymes (34) (Parkinson et al., 1980a,b, 1983; Safe et al., 1982; Sawyer and Safe, 1982; Poland and Glover, 1980; Goldstein et al., 1977). Like Aroclor 1254, all the monoortho and at least eight diortho-chloro analogs of the coplanar PCBs exhibited a "mixed-type" induction pattern and induced microsomal AHH, DMAP N-demethylase and cytochromes P-450a to P-450e (Parkinson et al., 1983, 1980a,c). Quantitative structure-activity relationships (QSARs) within this series of PCBs were determined by comparing their AHH induction potencies (EC_{50}) in rat hepatoma H-4-II-E cells and their binding affinities (ED_{50}) for the 2,3,7,8-TCDD rat cytosolic receptor protein (Sawyer and Safe, 1982; Bandiera et al., 1983). The results showed that there was an excellent correlation between AHH induction potencies and receptor binding avidities of these compounds and the order of activity was coplanar PCBs (3,3',4,4'-tetra-, 3,3',4,4',5-penta- and

3,3',4,4',5,5'-hexachlorobiphenyls) > 3,4,4',5-tetrachlorobiphenyl > mono-ortho coplanar PCBs > diortho coplanar PCBs. It was also apparent that the relative toxicities of this group of PCBs paralleled their biological potencies (Biocca et al., 1981; Yoshihara et al., 1979; Marks et al., 1981; McKinney et al., 1976; Yamamoto et al., 1976; Ax and Hansen, 1975; Kuroki and Masuda, 1977).

The coplanar and monoortho coplanar PCBs also exhibit differential effects in the inbred C57B1/6J and DBA/2J mice. These compounds induce AHH and cause thymic atrophy in the former "responsive" mice whereas at comparable or higher doses none of these effects are observed in the nonresponsive DBA/2J mice (Parkinson et al., 1982). The results obtained for structurally diverse PCDDs, PCBs and PCDFs clearly support the role of the receptor protein in initiating the broad spectrum of biologic and toxic effects elicited by these chemicals. Bandiera et al. (1983) demonstrated that the 2,3,7,8-TCDD receptor protein is not only susceptible to halogen substitution patterns but also the structure of the substituent. The cytosol receptor binding avidities and AHH induction potencies in rat hepatoma H-4-II-E cells for several 4'-X-2,3,4,5-tetrachlorobiphenyls were remarkably dependent on the structure of the X substituent. The binding data for 13 different substituents was subjected to multiparameter regression analysis to correlate binding avidities with the physical and chemical characteristics of the critical lateral X substituents. The equation

$$\log \left(\frac{1}{EC_{50}} \right) = 1.53\sigma + 1.47 \Upsilon + 1.09 \text{ HB} + 4.08$$

showed that ligand binding was dependent on substituent electronegativity (σ), lipophilicity (Υ) and hydrogen binding (HB) with a correlation coefficient (r) equal to 0.978 for 13 different substituents.

Dependency of ligand-receptor complex and the biological activity of PCDDs on their electronic and geometric structure investigated by an in vitro molecular fragment analysis has also been suggested (Cheney, 1982).

The receptor mediated hypothesis for the mechanism of action of 2,3,7,8-TCDD still requires further confirmation and numerous problems must be clarified. For example:

1. Several cell culture lines that appear to have the Ah receptor are highly resistant to the toxicity of TCDD; the nonresponsive HTC and responsive H-4-II-E cell lines (i.e., for AHH inducibility by TCDD) do not possess cytosolic receptor; however, the nonresponsive HTC cells possess more nuclear receptor binding protein than the responsive H-4-II-E cells (Okey, 1983; Okey et al., 1980).
2. Hepatic cytosolic receptor levels in rats (Wistar and Sprague-Dawley), C57B1/6J mice, hamsters and guinea pigs are comparable (Gasiewicz et al., 1983b); however, their susceptibility to the biologic and toxic effects of TCDD are highly variable: guinea pigs are highly susceptible to the lethal effects of TCDD ($LD_{50} = 1-2 \mu\text{g}/\text{kg}$) whereas the susceptibility of the other species follows the order rat > C57B1/6J mice > DBA/2J mice > hamster (Neal et al., 1982).
3. "Responsiveness" of the mouse to 2,3,7,8-TCDD induced toxicity seems to be highly dependent on the genetic conditions, as regards the Ah^D allele gene, of the animal. However, cell lines "nonresponsive" to P₁-450 induction by 2,3,7,8-TCDD have also been found to possess Ah-receptor protein (Guenther and Nebert, 1977).

Ah receptor protein is also present in human tissue (Roberts et al., 1985). Whether variation in Ah-locus is critical for individual susceptibility to toxicity by PCDDs remains to be demonstrated in human population.

8.3.2. Metabolism. The metabolism of 2,3,7,8-TCDD has been examined in the guinea pig, rat, mouse and hamster. Urine and bile from ¹⁴C-TCDD-treated animals were found to be free of unmetabolized 2,3,7,8-TCDD, demonstrating that metabolism was required for elimination through these routes (Olson et al., 1983). The direct intestinal elimination of unchanged 2,3,7,8-TCDD in feces suggests, however, that some routes of excretion may not be dependent on prior metabolism of the toxin (Olson et al., 1983).

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Portland Field Office

727 NE 24th Avenue

Portland, OR 97232

July 10, 1989

Jerry E. Turnbaugh
 Department of Environmental Quality
 Water Quality Division
 811 S.W. 6th Avenue
 Portland, Oregon 97204

RE: Port Westward Pulp Co.
 NPDES Wastewater Discharge Permit

Dear Mr. Turnbaugh;

The U.S. Fish and Wildlife Service (Service) has reviewed the Public Notice for Port Westward Pulp Co., which proposes to build a bleached-kraft market-pulp mill on the Columbia River near Clatskanie, Oregon. The company has applied for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit. If issued, the permit would allow discharge of wastewater from the operation of the pulp mill to the Columbia River.

We are concerned about the potential water quality degradation associated with this project and feel the subject permit has not adequately addressed this issue. The toxic substances of greatest concern are the chlorine based compounds such as dioxins (particularly 2,3,7,8-TCDD) and di-benzo furans. Bleached-kraft pulp mills are a known significant source of dioxins. 2,3,7,8-TCDD is exceedingly stable, readily incorporated into aquatic and terrestrial ecosystems, extraordinarily persistent, virtually impossible to destroy, and readily bioaccumulates in biological systems. Laboratory studies with birds, mammals, and aquatic organisms have demonstrated that exposure to 2,3,7,8-TCDD can result in acute and delayed mortality as well as carcinogenic, teratogenic, mutagenic, histopathologic, immunotoxic, and reproductive effects. Studies have shown that fish downstream of bleached-kraft pulp mills are bioaccumulating dioxins at levels which represent significant threats to human health, the environment, and fish-eating wildlife. The potential for biomagnification of organochlorine compounds is high. Thus, organisms at the upper end of a food chain, such as bald eagles, great blue herons, or salmon may accumulate concentrations of chlorinated dioxins that are hazardous to their reproductive capabilities and survival.

Several bleached-kraft pulp mills are in operation on the Columbia River. The receiving waters associated with these mills have been included on the U.S. Environmental Protection Agency's (EPA) 304(1) "short" lists identifying water bodies that are in violation of water quality standards due to toxicants. The addition of another mill adding organochlorine compounds to the Columbia River will only intensify the problem. Although the Port Westward Mill should discharge lower levels of dioxins, the DEQ should consider the long term consequences of additional discharges of chlorinated dioxins to the river.

Before the permit is considered for issuance the permittee should complete studies of the mixing zone and the mixing zone boundary, including dye studies and a modeling effort to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms. The detection level of 2,3,7,8-TCDD in effluent is 10 ppq, whereas the EPA's water quality criteria for dioxin is well below the detection level at 0.013 ppq. Thus, discharged effluent must have a 769-fold dilution to meet EPA's water quality criterion. Without mixing zone evaluations, this dilution factor is unknown. In addition, acute and chronic bioassays of the mixing zone and mixing zone boundary should be conducted. No sublethal effects on growth, reproduction, or survival of aquatic organisms should occur at the mixing zone boundary.

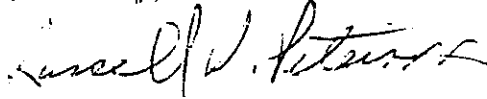
Because there are no bleached-kraft mills on the Columbia River that use the same technologies as that of the proposed Port Westward mill, the amount of dioxin actually discharged is unknown. The permit limits discharge of dioxin to below the level of analytical detectability (10 ppq). However, without evaluations of the effluent produced and discharged, a reduction of effluent toxicity can not be assured. We understand that the DEQ is already allowing for a provision to reopen the permit for modifications of the dioxin effluent limitations if the applicable dioxin regulations or regulatory policies change. We recommend that the DEQ consider limiting the permit to a discharge of no dioxins since the regulatory policies could potentially be reduced to production and discharge of zero dioxins.

The EPA's interim strategy and stated long-term goal for controlling dioxin discharges is to reduce and hopefully eliminate the production of dioxins, not just dioxin discharges to surface waters. Thus, it is appropriate for the DEQ to consider requirements that all new pulp mills use technology that produces and discharges no dioxins. It is our understanding that this technology is available and is being used in some mills operating in Sweden. If not yet available, then we recommend the DEQ question the suitability of adding another pulp mill's effluent to the Columbia River.

The Service requests that the DEQ not issue the NPDES permit until additional information is provided. Because of the magnitude of the proposed project, the likely degradation of water quality in the Columbia River, and the

potential for significant impacts we also recommend that the DEQ give serious consideration to the long range and cumulative impacts of this project.

Sincerely,



Russell D. Peterson
Field Supervisor

CS2:lg

- cc:
- EPA
- NMFS
- ODFW
- DSL
- WDE
- WDF
- WDG
- COE

Toxicity and Bioconcentration of 2,3,7,8-tetrachlorodibenzodioxin
and 2,3,7,8-tetrachlorodibenzofuran in Rainbow Trout

by

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The chronic toxicity and bioconcentration of TCDD and TCDF in aquatic species have not been well elucidated. Helder [10,11] reported that exposure of fertilized eggs of rainbow trout (*Salmo gairdneri*) for 96 h to TCDD concentrations of 0.1 ng/L significantly decreased the growth of the resulting fry, and that exposure of rainbow trout fry for 96 h to 10 and 100 ng/L TCDD retarded growth and caused histological changes in tissues and delayed mortality. Miller et al. [12] reported the toxicity and pathologic changes induced by short-term exposures of guppies (*Poecilia reticulata*) and coho salmon (*Oncorhynchus kisutch*) to TCDD. Coho salmon exposed to 56 pg/L and 1000 ng/L for 24 hours exhibited delayed mortality. Cooper et al. [13] observed delayed development and decreased survival in Japanese medaka (*Oryzias latipes*) exposed to TCDD concentrations of 6 to 500 ng/L. The oral toxicity and metabolism of TCDD in rainbow trout and yellow perch (*Perca flavescens*) was recently reported by Kleeman et al. [14,15]. In rainbow trout exposed for 6 h to 107 ng/L of TCDD, followed by a 139-day depuration period Branson et al. [16] estimated the bioconcentration factor (BCF) to be 9270 and the elimination half-life to be 58 days. Significant delayed effects were similar to those reported by Miller et al. [12]. No similar studies have been conducted to characterize the toxicity and bioconcentration of TCDF in aquatic species.

Because of the lack of chronic toxicity data involving continuous low level exposures of fish to TCDD and TCDF, we attempted to measure the chronic toxicity of these two compounds to rainbow trout. Their effects on survival, growth, and behavior were evaluated during a 28-day continuous exposure followed by a 28-day depuration phase. Uptake and depuration kinetics and bioconcentration factors of TCDD and TCDF were also estimated.

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TECHNOLOGY

'Green' look for computer print-outs

ONE of Europe's largest suppliers of paper this week launched the world's first "environmentally friendly" stationery for computers. Roffs Stralfors, a Swedish paper company, has run trials of the paper on the Swedish market and now plans to exploit the large potential market in Britain. This market has been created by growing concern over the use of chlorine as a bleaching agent in the paper industry, and its implication in the release of harmful dioxins into the environment.

Stralfors's new paper, Stralfors Zero, is produced by Holmen, one of Sweden's

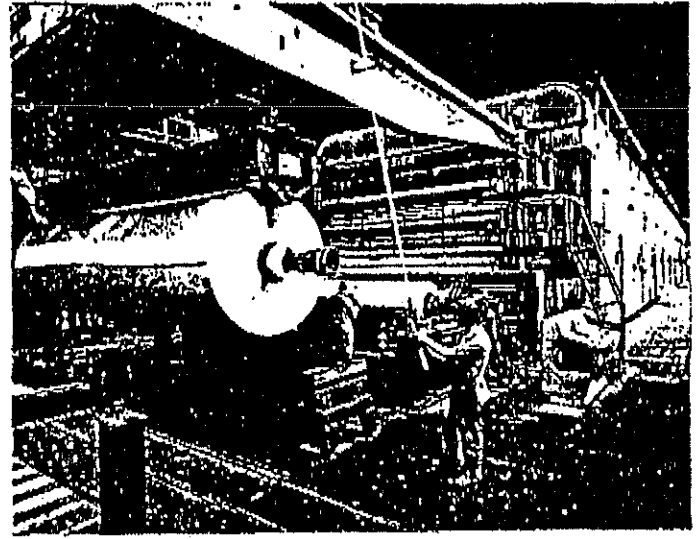
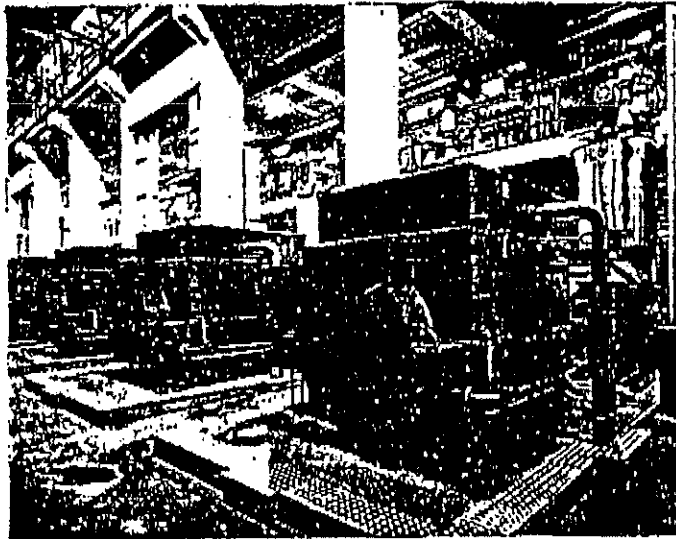
Susan Watts, Stockholm

enough to satisfy their customers. First, they remove the residual lignin with chlorine gas, then they bleach the pulp in up to eight alternating acid and alkaline stages, using chlorine dioxide and hypochlorite.

Researchers in paper processing are still not sure exactly how dioxins form in the chlorination process. Dioxins are compounds with three benzene rings, lying flat in one plane. If chlorine binds to these so-called tricyclic compounds in particular positions, then the rings become poisonous. The term "dioxins" covers

hydrogen peroxide as a bleach, but they still use a form of chemical processing to pulp their wood. In Europe, the US and Canada, some mills are now using a hybrid of chemical and mechanical pulping, but this effort produces only 1 per cent of the total output of pulp.

The mill at Hullstavik uses spruce wood from forests in Sweden, and claims to be planting more trees than it harvests, to meet Swedish law. Holmen was the first mill in the world to use the TMP process when it opened its plant in 1974. Since then, it has produced relatively low-grade paper for the newspaper industry by this "clean" process.



Holmen has converted an old pulping plant (left) to produce environmentally friendly paper for an image-conscious computer industry

major paper mills, which uses hydrogen peroxide rather than chlorine as a bleach. Several large companies in the computing and banking industries have tested the paper, which Stralfors's sales director, Iain Morrison, describes as "November white".

These companies are keen to use the paper as an easy way to adopt a "green" image. Such industries use huge amounts of paper in pre-printed form, for example in the continuous listings that make bank statements.

Holmen's mill, at Hullstavik, north of Stockholm, uses a pulping process called thermomechanical pulping (TMP). This process relies on steam and brute force to soften the fibres of wood, rather than the traditional chemical pulping process that is still the most popular way of producing paper.

Almost all chemical pulp is made by a method known as the kraft, or sulphate, process using sodium hydroxide and sodium sulphide. Chemical pulping dissolves out some of the lignins that bind the fibres of the wood together, but leaves enough behind to produce paper with a very fine finish.

The main disadvantage of this approach is that a relatively large amount of lignin remains in the pulp. This lignin has a dark colour, so paper mills have to use strong, chlorine-based bleaches to make it white

two types of compound, chlorinated dibenzoparadioxins and chlorinated dibenzofurans. Some scientists believe that many dioxins are highly carcinogenic.

The main advantage of TMP is that it softens the wood fibres and extracts more lignin, so leaving the pulp whiter than that created by chemical pulping. In order to produce an acceptably "white" paper, the mill need use only hydrogen peroxide, a less powerful bleach than chlorine. Bleaching with hydrogen peroxide gives out only hydrogen and oxygen as by-products. The main drawback has been that the lack of lignin in the pulp means that the fibres are less tightly bonded, so more likely to flake off from the surface of the paper. This is not acceptable for computer rooms.

However, mechanical pulping has other advantages. It is less likely to chop the fibres, as happens in chemical pulping, so the resulting paper is stronger. TMP also makes use of all of the wood so it needs roughly half as much timber to produce the same weight of paper as chemical pulping.

Canada, like Sweden, is a leading supplier of paper, yet it has done little to move away from chlorine-based bleaching. It has put most of its development effort into more efficient techniques for planting and harvesting trees.

Two of Britain's six paper mills use

Paper produced by TMP has proved hard to turn into stationery for computers. This is because the paper has to be of a very high quality in order to be suitable for laser printing. It must also be able to run as a continuous roll through a printer. The paper must also stack well and have a high surface strength, so that it does not produce paper "dust".

Holmen's mill uses very high temperatures and pressures to produce its paper. This means that the fibres in Stralfors Zero are so well bonded that none can rub off the surface of the paper.

Holmen's managing director, Anders Nordstrand, admits that the mill also uses an additive to strengthen the hydrogen-hydrogen bonds between the fibres. He is not prepared to say what this additive is, although he says it is "natural".

Other mills which pulp paper thermomechanically and bleach it with hydrogen peroxide sometimes treat their pulp with ozone. They find that ozone activates the surfaces of the fibres so that they are more likely to bond to each other.

Stralfors Zero will be 5 per cent cheaper than the company's ordinary continuous stationery. National Semiconductor in the US, Access and Britain's National Westminster Bank are already interested in ordering supplies. □

Hydrogen peroxide = H₂O₂ = No chlorine

INTRODUCTION

The DEQ's Addendum No. 2, dated October 5, 1989, and recently sent to the Commission, says that EQC rules should perhaps "be amended to give the Commission greater discretionary power in approving temporary overloads to water quality limited streams" and suggests that, given the time it will take to clean up current pollution in Oregon rivers, "the Commission can be severely restricted in applying its judgment to specific cases" under the current rules.¹ This is true. Both Oregon law and federal law do not give the "flexibility" to allow new polluters to add to the existing load of dirty rivers, and do not allow approval of the WTD Port Westward pulp mill permit.

Before it can approve a new discharge to the Columbia River, the Environmental Quality Commission (EQC or Commission) must be able to make an affirmative finding that the Port Westward Pulp Company (WTD Industries) pulp mill cannot cause a violation of any water quality standard on the Lower Columbia. Separately it must find that the mill will not impair any beneficial uses. These findings must be scientifically defensible and adequate to withstand court challenge. Such findings cannot be made by the Commission at its October 20 meeting.

Unfortunately, the DEQ Staff Report sidesteps the clarity of the state requirements under OAR 340-41-026 and other regulations, does not mention at all the applicable federal statutory requirement in § 301 of the Federal Clean Water Act,

¹ Addendum No. 2 at p. 6.

and focuses much of its attention on a separate federal statutory provision (§ 304(1)) of only marginal relevance to the decision that must be reached. Similarly, WTD Industries in its October 13 comments has missed the critical legal issues and provided no facts adequate for the Commission to make a legally defensible finding in favor of the permit.

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I. EQC CANNOT FIND THAT THERE IS NO THREAT TO BENEFICIAL USES ON THE COLUMBIA

In order to approve a permit for a major new water pollution source the Commission must be able to find that the new or increased discharge load "would not threaten or impair any recognized beneficial uses" ² In its latest Addendum No. 2 to its staff report, the Department has simply stated that it "feels that there is no evidence that wildlife would be significantly threatened or impaired." ³ This is not sufficient. Given current evidence, it is not possible to state that beneficial uses will definitely not be threatened. This is because the available evidence is, in fact, to the contrary.

A. Federal Agencies Assert That Beneficial Uses Will Be Harmed

Federal agencies have offered extensive comments to DEQ voicing their concern over the harmful effects that all organochlorines from the proposed mill, all dioxins, and TCDD in particular, will have on the beneficial uses in and around the river. We do not believe these federal objections have been shared with the Commission, so we are enclosing copies.

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA) have expressed concern that "fish downstream of bleached-kraft pulp mills are bioaccumulating

² OAR 340-41-026(3) (a) (B) (emphasis added).

³ J. Turnbaugh, Addendum No. 2 to July 21, 1989, EQC Staff Report, at p. 4, October 5, 1989 (emphasis added).

dioxins at levels that represent significant threats to human health, the environment, and fish-eating wildlife," and have recommended denial of the proposed draft NPDES permit.⁴

NOAA cites several areas of concern that were not relayed to EQC by DEQ in its extraordinarily brief summary of public comments in August of this year.⁵ NOAA criticizes the DEQ Evaluation Report for failing "to address the cumulative impacts that this pulp mill could have on the fishery resources of the Columbia River," noting that survival rates of coho salmon smelts on the Chehalis River, which receives discharges from two pulp mills, are half that on the Humptulips River, which receives no pulp mill effluent.⁶ These criticisms also include the fact that "important water quality parameters for the proposed mill are not well addressed," and that "[t]he proposed permit does not adequately monitor chlorophenolics," which are "highly toxic to aquatic life and are highly resistant to further chemical degradation."⁷

⁴ NOAA Letter to Jerry Turnbaugh, DEQ, July, 27, 1989 (NOAA Letter); USFWS Letter to Jerry Turnbaugh, DEQ, July 10, 1989 (USFWS Letter) (both attached as Exhibits A and B). This statement was not quoted by DEQ.

⁵ DEQ's summary of USFWS and NOAA comments is on pages A-10 to A-11 of the latest Addendum No. 2 submitted to the Commission on October 5. These pages are in the Addendum originally submitted to the Commission on August 29, 1989.

⁶ NOAA Letter at 1. This was not quoted.

⁷ Id. at 2. The DEQ summary only quoted one of those three statements, regarding monitoring, and not the other two. NOAA also calls for "[a] modelling study to determine the actual dilution of effluent constituents and associated impacts to aquatic organisms . . . using worst case conditions," id. at 3, a

USFWS has also voiced other concerns which have not been identified to EQC. While recommending that "DEQ question the suitability of adding another pulp mill's effluent to the Columbia River," USFWS calls on DEQ "to consider requirements that all new pulp mills use technology that produces and discharges no dioxins."⁸ These comments are a result of USFWS concerns that "without evaluations of the effluent being produced and discharged, a reduction of effluent toxicity can not be assured."⁹ USFWS "request[ed] that the DEQ not issue the NPDES permit until additional information is provided."¹⁰ To date, DEQ has not provided the requested information, nor did DEQ in its summary of comments mention that USFWS has asked you to suspend processing of the permit.

There is no evidence that DEQ has seriously considered any of these agency comments. DEQ made only passing reference to these and other comments in its August 29th Addendum to the Commission.¹¹ Such a high degree of concern from federal agencies entrusted to protect recognized beneficial uses should

point DEQ quoted, but not with the context provided above to show the seriousness of the need for such a study before any permit is issued.

⁸ USFWS Letter at 2. This statement was not quoted by DEQ. Note that USFWS is asking that all 75 dioxins be prohibited, not just TCDD. DEQ is not proposing anything like this.

⁹ Id.

¹⁰ Id. (Emphasis added.)

¹¹ Addendum to July 21, 1989, Environmental Quality Commission Staff Report, August 29, 1989.

trigger a stricter scrutiny by the Commission of the parameters of concern.

B. Dioxin and Other Chlor-organics Will Adversely Effect Beneficial Uses

There is ample evidence to show that dioxin and other chlor-organics in the effluent from the proposed mill will adversely affect beneficial uses.¹² Studies done on fish exposed to dioxin have shown that the toxin is bioaccumulated at alarming rates. One such study finds that for some fish, the bioconcentration factor is as high as 159,000.¹³ This means that 159,000 times as much dioxin occurs within fish tissue as is found in ambient surroundings.

Another study has shown that exposing fingerling trout to 38 parts per quadrillion (ppq) of dioxin resulted in significantly reduced growth, significantly abnormal behavior, and significantly reduced survival.¹⁴

Other reports have documented an array of abnormalities in fish living downstream from bleached-kraft pulp mills, including

¹² See, for example, 2 EPA Studies Confirm Threat to Fish of Dioxin from Paper Plants, New York Times, March 14, 1989 (attached as Exhibit C). (The article erroneously stated that EPA was considering relaxing its dioxin standards. As we have pointed out elsewhere in this brief, EPA stated on March 15 (coincidentally, the next day) that that effort had been dropped.)

¹³ Memo from Philip M. Cook, Chief, Hazardous Research Branch, to Jim Cummings, Office of Assistant to the Administrator for Solid Waste and Emergency Response, Environmental Protection Agency, 2,3,7,8-TCDD in Aquatic Environments, February 4, 1987.

¹⁴ Mehrle, Toxicity of 2,3,7,8-tetrachlorodibenzodioxin and 2,3,7,8-tetrachlorodibenzofuran in Rainbow Trout, 27 Environmental Toxicology and Chemistry 47 (1987).

reduced gonad growth, liver enlargement, metabolic disturbances, impaired ionic balance, suppressed immune defense, vertebral deformities, decreased red blood cell numbers and blood hemoglobin concentrations, and increased amounts of methemoglobin.¹⁵ In the Great Lakes region the effects on fish and wildlife prompted an extraordinary two-nation call for action last week. Such compounds and effects must be studied on the Lower Columbia before the Commission can make a finding to allow this new pulp mill.¹⁶

The Bald Eagle and other fish-eating birds are a special type of beneficial use. We will address them under a separate heading, involving the Endangered Species Act.

C. EQC Must Be Certain That No Harm Will Occur Before It Allows This Mill

The "feelings" and "assumptions" of DEQ staff are not enough to allow EQC to make the required finding under OAR 340-41-026 of no impairment of beneficial uses. All EQC rules require it to err on the side of safety, and Oregon

¹⁵ See Larsson, Physiological Disturbances in Fish Exposed to Bleached Kraft Pulp Mill Effluents, 20 Wat. Sci. Tech. 67 (1988); Bengtsson, Sublethal Effects of Tetrachloro-1,2-benzoquinone--A Component in Bleachery Effluents from Pulp Mills--On Vertebral Quality and Physiological Parameters in Fourhorn Sculpin, 15 Ecotoxicology and Environmental Safety 62 (1988); Hardig, Long -Term Effects Of Bleached Kraft Mill Effluents on Red and White Blood Cell Status, Ion Balance, and Vertebral Structure in Fish, 15 Ecotoxicology and Environmental Safety 96 (1988).

¹⁶ See Fears Voiced for Great Lakes, New York Times, October 12, 1989 (attached as Exhibit D).

administrative law requires it to have substantial evidence of no possible harm before a new pollution source can be approved.

EQC rule OAR 340-41-025(2)(p) prohibits introducing toxic substances into state waters "above natural background levels . . . in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may bioaccumulate to levels that adversely affect public health, safety, or welfare; aquatic life; or other designated beneficial uses."¹⁷ EQC must prevent any discharge of dioxins or the 300 other chlorinated organic compounds unless shown that they will affirmatively not be harmful to beneficial uses. To this point, no such showing has been made, and allowing any additional dioxins or other fish-and wildlife-harming compounds to be introduced into the Lower Columbia will violate the rule.¹⁸

OAR 340-41-205(1)(i) states that "[t]he creation of . . . toxic or other conditions that are deleterious to fish or other aquatic life . . . shall not be allowed" in the waters of the lower Columbia River Basin.¹⁹ Fish and aquatic life are named

¹⁷ OAR 340-41-025(2)(p) (emphasis added).

¹⁸ EQC rules prohibit discharges which "in combination with other wastes or activities will cause violation" of toxic substances standards. OAR 340-41-205(2). This means that even if WTD's proposed pollution would, by itself, not violate the toxic standards established to protect aquatic life and beneficial uses, EQC still cannot approve the permit unless it can find that, when combined with the total load of dioxin in the Lower Columbia and with other compounds such as PCBs, the new discharge would not harm beneficial uses.

¹⁹ OAR 340-41-205(2)(i).

beneficial uses.²⁰ While noting in its report that the water quality "standard is self-explanatory in its purpose to prohibit the discharge of substances . . . that would be toxic to aquatic life," DEQ then mentions nothing more than possible impacts on "palatability of fish or shellfish."²¹ At a minimum, DEQ must address this issue and show that no toxic conditions deleterious to fish and aquatic life will exist as a result of the WTD plant effluent. This cannot be done on the basis of "feeling" and "assumptions." The burden of proof is on those proposing the mill to show safety for fish and wildlife, not on the DEQ staff to show harm.²²

To be adequate, EQC's findings must include "a clear statement of what, specifically, the decisionmaking body believes, after hearing and considering all the evidence, to be the relevant and important facts upon which its decision is based." Sunnyside Neighborhood League v. Clackamas County, 280 Or. 3, 21 (1977) (emphasis added). DEQ has not provided any facts upon which it has based its recommendation, but has merely

²⁰ See OAR 340-41-202, Table 1.

²¹ J. Turnbaugh, Evaluation Report for the Application for NPDES Wastewater Discharge Permit, at 27, June 5, 1989.

²² WTD argues in its proposed testimony to the Commission for October 20th that the beneficial use finding need not even be made, and that EQC is "bound" by the existence of a water quality standard for aquatic life to determine that this discharge will not threaten or impair such aquatic life. WTD letter at 9. This is absurd. OAR 340-41-026 is a separate and subsequently enacted rule requiring independent findings that are in no way decided by a water quality standard finding. Numerous EQC regulations and federal law require protection of beneficial uses in addition to compliance with water quality standards.

speculated to the Commission, in the face of overwhelmingly contrary evidence, that beneficial uses will not be affected. DEQ states that "[i]t has been generally assumed that treated pulp mill discharges do not have a demonstrated adverse effect on aquatic life, outside their allowed mixing zone."²³ On this assumption alone, DEQ has said that it "feels that there is no evidence that wildlife would be significantly threatened or impaired by WTD's new discharge."²⁴ This does not constitute the kind of facts and evidence needed for a finding under Sunnyside. Furthermore, when it makes its finding, EQC must "fully explain why [the required] facts lead it to the decision it makes."²⁵

²³ J. Turnbaugh, Addendum No. 2 to July 21, 1989, EQC Staff Report, at p. 4, October 5, 1989 (emphasis added).

²⁴ Id.

²⁵ Sunnyside, 280 Or. at 20, 569 (quoting The Home Plate Inc. v. OLCC, 20 Or. App. 188, 190, (1975)).

II. EQC APPROVAL OF THE WTD PERMIT WOULD VIOLATE EQC REGULATIONS AND FEDERAL LAW

In order to approve a permit the Environmental Quality Commission must find that the new or increased discharged load "would not cause water quality standards to be violated." The EQC cannot properly reach this finding required by OAR 340-41-026(3)(a)(A) and therefore cannot properly authorize the DEQ to issue the requested permit to WTD.

A. DEQ Documents Do Not Provide Evidence of Compliance With the Water Quality Standard, But Show the Opposite

The only evidence in existence shows the entire lower Columbia River to be several times over the water quality standard for 2,3,7,8-TCDD (dioxin). The only evidence in the record is that there are no enforceable reduction orders or compliance schedules to get the necessary 80+ percent reduction in total existing discharges from the other eight mills (plus the ones in Canada). The political imperative to get this mill approved has produced a rash of contradictory statements from DEQ -- some of them between different documents and some of them within a single document, namely the just-issued second Addendum to DEQ's staff report. But the fact remains that all evidence shows the Columbia River is not in compliance and no other mills on the River in the three states and Canada are under legally binding compliance orders that would achieve the massive reductions in TCDD necessary to bring the Columbia into compliance by the date this plant is proposed to go on line.

1. The River Is Out of Compliance

The standard for TCDD in the Columbia River is 0.013 ppq (parts per quadrillion). This is set so low because of the incredibly toxic nature of this compound. The DEQ, in its July 17, 1989, "Request for EQC Action" prepared for the July 21 meeting, said that "the Department finds that the discharge would not violate water quality standards, with the exception of TCDD."²⁶ In its rationale for its first alternative proposal it likewise admitted that, based on information from the EPA 104-mill study and its "best professional judgment":

TCDD levels in the Columbia River probably exceed the EPA Water Quality Criteria/EQC standard for TCDD.²⁷

Note that the DEQ was talking about the Columbia River, not some narrowly confined point on the river. The DEQ asked whether the WTD application should "be denied until the TCDD 'overload' in the Columbia River is removed."²⁸

This was followed a few weeks later by statements in DEQ's Columbia River TCDD Analysis (August 1989) admitting that "[t]he Columbia River has been identified as water quality limited for dioxin" ²⁹ The DEQ admitted that the entire Lower Columbia is five to seven times over capacity for dioxin and that

²⁶ EQC Request For Action, July 21, 1989, p. 2.

²⁷ Id. at 4.

²⁸ Id. at 7.

²⁹ Columbia River TCDD Analysis, August 1989, at p. D-2 (emphasis added).

enforceable requirements are not in place for the eight or more mills causing the problem. The DEQ calculated the overall target load necessary to achieve the 0.013 ppq water quality standard as 6-8 mg/day.³⁰ Citing the EPA 104-mill study jointly compiled by EPA and the pulp industry, the DEQ reported that the total load of TCDD currently discharged into the river is at least 43.3 mg/day.³¹ (The Analysis shows charts displaying the cumulative load.) Therefore, the Lower Columbia is at least five to seven times over the standard.³²

Now, in DEQ's "Addendum No. 2," dated October 5, 1989, in order to get the mill approved at the October 20 EQC meeting, the DEQ staff asserts that information about TCDD is not well enough known to state with confidence that, in its best professional judgment, that

the entire receiving stream or even selected stretches should be listed as either

³⁰ Id. at D-7.

³¹ Id. at D-6.

³² Id. at D-6. The DEQ analysis assumes that all the dioxin entering the river remains in the water column. Id. at D-5. The latest staff report prepared for the upcoming October 20 meeting, however, says that "some" of the TCDD "undoubtedly" goes into the sediment and aquatic biota. Addendum No. 2 at 4. The staff has not calculated how much that is, or what change it now feels should be made in the Columbia River TCDD Analysis. But all of this supposedly "attenuated" TCDD is not really disappearing, but moving into the very organisms that the standard seeks to protect -- fish and subsequently the humans who consume them -- we do not see how the staff can take comfort from this so-called attenuation to those target organisms!

confirmed or suspected of exceeding the TCDD standard.³³

This remarkable retreat by staff will doubtless be used immediately by the three companies challenging the Commission's listing of their stretches of the Columbia River in state court, but it has absolutely no new science or calculations to support it.

The only reliable evidence is DEQ's formal Columbia River TCDD Analysis (August 1989) that produced figures and charts showing the cumulative effect of eight mills on the river and concluded that it is 5-7 times over the standard.³⁴ The Department must actually still believe this, for it asserts that by 1992 the amount of TCDD from pulp mills in Oregon "will be reduced" and the amount from Washington pulp mill on the river "should be reduced" enough that the WTD discharge "would not then cause water quality standards to be violated."³⁵

³³ October 5, 1989, Addendum (No. 2) to July 21, 1989, EQC Staff Report at 4 (hereafter, Addendum No. 2).

³⁴ Even that analysis is limited and, to a certain extent, "back-of-the-envelope" in that it omits mills in Canada on the Columbia River and assumes actions by other states that are not at all assured.

³⁵ Id. The Department also indicates that it is "reviewing" its assessment of the Columbia and Willamette rivers and has been "requested" by someone (presumably the pulp and paper industry) to "reevaluate" the applicability of the 0.013 ppq TCDD water quality standard. Id. This implicitly recognizes that the current water quality standard is too stringent to be met by this mill in combination with the existing loads in the Columbia River. In the July 17 "Request for EQC Action" the DEQ was even more forthright, asserting that approval of the WTD permit would be based on recognizing "the lack of agreement on the appropriateness of the existing TCDD standard" and "that the standard is under review." Request for EQC Action at 5, Addendum

The amount of TCDD in the river either is not confirmed or suspected of exceeding the TCDD standard or it is; the Department cannot have it both ways. These kinds of contradictions show why cross-examination is often favored by lawyers. They also show that the Commission should invite public interest advocates and the company to dig into the evidence and the files more deeply and not be rushed to a snap approval on October 20 as WTD seeks.

2. No Legally Binding Orders Exist to Bring It Into Compliance

When all is said and done, there are not in existence the necessary legally binding orders directed to other pulp mills on the Columbia River that will "ensure" that the dioxin load in the Columbia is brought down by 80+ percent to make room for the WTD mill. In the August 1989 Columbia River TCDD Analysis the DEQ staff set out three scenarios, the most critical of which (Scenario II) assumed that Washington State would impose more stringent reductions than it has proposed. (It also must have assumed that EPA's Region X would impose such reductions for the State of Idaho. It ignored dioxins from Canada.)³⁶ The lack of legally adequate assurance was forcefully pointed out to the Commission at the previous meeting in September.

The most that the DEQ staff can now point to is a letter of September 14 from EPA's Water Quality Division Director to DEQ. DEQ's Addendum No. 2 quotes it as saying that EPA "would not

for October 20 meeting at A-23.

³⁶ Columbia River TCDD Analysis at page A-44 of Addendum No. 2 submitted to the Commission.

object to a permit for a new source" under certain conditions.³⁷ Those conditions include "a waste load allocation which anticipated the new source."³⁸ Of course, no such waste load allocation has been legally enacted by Oregon or other jurisdictions. The EPA letter goes on to say that he would not object if "we had a commitment from the states of Oregon and Washington to follow through on individual control strategies (ICS) which would lead to water quality standards compliance no later than three years after approval of the ICS, or in no case later than June 4, 1993."³⁹ Leaving aside whether a vague "commitment" is legally sufficient for purposes of section 301 of the Clean Water Act and for the Commissions's rules (it is not), it should be noted that there is no evidence that the ICS's actually adopted by the State of Washington contain the stringent provisions (such as 10 ppq in the bleach plant effluent) that are necessary to attain the water quality standard according to the DEQ's Columbia River TCDD Analysis.

The EPA letter says, "I believe we have such a commitment now."⁴⁰ Such a "belief" is not sufficient under EQC's own rules or under other federal and state laws and regulations. Either Washington and EPA have adopted permit conditions that are legally enforceable and that limit dioxin in bleach plant

³⁷ Addendum No. 2 at 7, quoting letter from Bob Burd.

³⁸ Id.

³⁹ Burd letter at 1.

⁴⁰ Letter at 1.

effluent for all pulp mills on the Columbia River system or they have not. Since there is no evidence that such legally adopted conditions are in place, the Commission has no choice but to delay any approval of this discharge until such adoptions occur -- and if legal challenges are filed (as they have been in Oregon) EQC must take account of the likely compliance dates after all legal challenges have been resolved.⁴¹ The "margin of safety" and "ensure" language in the various applicable laws and regulations do not allow DEQ, EPA, or EQC to make unrealistic and "best case" assumptions about clean-up of the river in order to issue a permit to yet one more pulp mill.

Despite all the evidence that the Columbia is 5-7 times over the standard, the DEQ tries to create an air of uncertainty and then proceeds as if, in order to deny a new discharge of water pollutants, the EQC must have absolute proof that the river is in violation and must make a finding that the new dioxin would cause

⁴¹ Three mills, Pope and Talbot, James River II, and Boise Cascade, have sued DEQ seeking to be removed from the 304(1) short list which compels those mills to eliminate detectable levels of dioxin by June 4, 1992. See DEQ's "Facts About the Columbia River and WTD," September 1, 1989.

Even if effluent standard compliance schedules under § 307 or individual control strategies under 304(1) had been promulgated for all the offending mills, § 509(b) of the Clean Water Act states that any persons or businesses affected by such action may apply for review within 120 days from the date of the determination. Hence, DEQ cannot comply with requirement set forth in 301(b)(1)(C) that there shall be achieved any necessary limitations to comply with state established water quality standards until both an enforceable basin wide compliance schedule has been promulgated and the 120 day appeal limit has passed before even considering whether a discharge may be permitted.

the water quality standards to be violated. This is upside down. The regulation properly says the opposite. In order to approve a new discharge under OAR 340-41-026 the Commission must be able to find reliably that the river is clean, or will be made so by binding compliance orders,⁴² and must be able, on the basis of substantial evidence, to make a finding that the new dioxin load "would not cause" water quality violations. The burden of proof is on the permit applicant and the staff, as we will discuss next.

B. The EOC Is Legally Required to Err on the Side of Safety

Under the wording of OAR 340-41-026, even if the Commission were to conclude that the water quality standards might not be exceeded with the new mill, that would not be enough to allow the mill. The regulation requires an affirmative showing that the load "would not" cause exceedances. Not only is the burden of proof on those who would propose a new discharge, it is indeed "proof" that they must provide. This requires convincing evidence, not speculation and feelings.

The state and federal laws were consciously drafted in this way, as have been most of the federal environmental laws in our nation. Even the Addendum to the staff report recognizes this on

⁴² We reserve the right to argue in any subsequent proceeding that the river must be clean at the time of permit issuance, but merely point out now that neither test is met.

page 1, where it asks, "How should we go about seeking to ensure that [the water quality of the Columbia] is protected?"⁴³

The "err on the side of safety" approach runs throughout EQC's regulations, none of which DEQ staff or WTD seem to be mentioning to the Commission in recent filings. OAR 340-41-205(2)(p), applicable to the Lower Columbia River, states:

Levels of toxic substances shall not exceed the most recent criteria values for organic and inorganic pollutants established by EPA and published in Quality Criteria for Water (1986).⁴⁴

In addition, OAR 340-41-120(3) states that adequate controls to insure compliance with the water quality standards

shall be provided in permits for sources or activities.

(Emphasis added).

EPA regulations contain the same requirements to "insure" attainment of water quality standards. They say that no permit can be issued to a new source:

[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states.⁴⁵

Moreover, the state permitting authority "shall ensure" that

The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies

⁴³ Addendum No. 2 at 1 (emphasis added).

⁴⁴ OAR 340-41-205(2)(p)(B).

⁴⁵ 40 C.F.R. § 122.4(d) (emphasis added).

with all applicable water quality standards.⁴⁶

Such an approach to pollution prevention is woven into the very fabric of our environmental laws. As a court of appeals stated in the famous Ethyl case, involving EPA's regulations to reduce lead in gasoline, "the very existence of such precautionary legislation would seem to demand that regulatory action precede, and optimally prevent, the perceived threat."⁴⁷ The federal pesticide laws are similarly precautionary in nature, as another Court of Appeals case noted in quoting a Congresswoman:

The burden of proof should not rest on the Government, because great damage can be done during the period the Government is developing the data necessary to remove a product which should not be marketed.⁴⁸

In a case concerning air quality standards, the Court of Appeals upheld the federal EPA's rejections of the State of Texas' inadequate plans for compliance with air quality standards. The state initially had "supplied no theoretical or empirical support for its novel model" and later provided inadequate support. The court pointed out:

⁴⁶ 40 C.F.R. § 122.44(d)(vii).

⁴⁷ Ethyl Corporation v. EPA, 541 F.2d 1, 13 (D.C. Cir. 1976) (en banc) (emphasis added).

⁴⁸ Environmental Defense Fund v. Ruckelshaus, 439 F.2d 584, 593 n.34 (D.C. Cir. 1971) (overturning a federal agency's failure to suspend a federal pesticide registration when some evidence existed of risk to human health).

The statute requires implementation plans which will insure attainment of the national air quality standards.⁴⁹

The finding that EQC would have to make before approving the WTD proposal must be based on the precautionary nature of the water quality standards program, and must show strong confidence through demonstrable evidence that the Columbia will be cleaner than the water quality standards. This cannot be done without reviewable scientific calculations to support the finding.

C. Federal Law and Regulations Require Permits to "Ensure" Water Quality Attainment

In their most recent, as well as earlier, documents the DEQ and WTD have made no mention of § 301(b)(1)(C) of the federal Clean Water Act, focusing attention instead on § 304(1), which is of marginal, if any, relevance to the WTD permit application. Section 304(1) relates to strategies for cleaning up toxic pollutants, but in no way provides an exception to the uncompromising mandate that a permit must be able to ensure compliance with water quality standards from it and other sources.

⁴⁹ State of Texas v. EPA, 499 F.2d 289, 301 (5th Cir. 1974) (emphasis added).

Federal law, which EQC and DEQ must abide by,⁵⁰ is uncompromising regarding water quality standard compliance. Section 301(b)(1) states that in NPDES permits there shall be achieved effluent limitations for point sources which "shall require" "any more stringent limitation, including those necessary to meet water quality standards."⁵¹

These requirements to meet water quality standards are not discretionary matters but mandatory ones. The House Committee Report preceding the enactment of the Clean Water Act in 1972 shows that, in addition to national feasibility-based guidelines, Congress intended that the permitting authority must apply any other measures necessary to attain recognized water quality standards:

the Committee intends that if the sum of the discharges from point sources meeting such effluent limitations would preclude the meeting of water quality standards . . . new and more stringent effluent limitations would have to be established consistent with such water quality standards.⁵²

The Senate Committee likewise stated:

⁵⁰ OAR 340-45-015(5)(c); OAR 340-45-035(1). Oregon rules also state that any recommendations regarding the issuance or denial of a NPDES permit must be:

developed in accordance with provisions of all applicable statutes, rules, regulations, and effluent guidelines of the state of Oregon and U.S. Environmental Protection Agency. OAR 340-45-035(1) (emphasis added).

⁵¹ 33 U.S.C. § 1311 (emphasis added).

⁵² H. Rep. No. 911, 92d Cong., 2d Sess. 101-02 (1972) (emphasis added).

whenever the Administrator determines that application of the best practicable treatment requirements . . . will not provide for implementation of existing water quality standards for interstate or intrastate streams, he must tighten the requirements against a source of discharge or a group of sources.⁵³

The Congressional language ("have to be established" and "must tighten") is consistent with the strong mandatory nature of the statutory language itself ("shall require").

DEQ and WTD seem to believe that § 304(1) allows a more relaxed time schedule than previously required by § 301 and the EQC's own rules. But § 304(1) did not supersede old water quality standards requirements. Addressing the slow pace at which EPA was promulgating best available technology standards for toxic substances, the Senate Committee, in the 1985 Clean Water Act hearings, stated that while it was devising new provisions for control of toxic discharges such as TMDLs, the 304(1) lists, and Individual Control Strategies, "[t]he water quality standards regulations currently in effect are strongly supported by the Committee."⁵⁴ The requirement that the permitting authority achieve any more stringent limitations

⁵³ S.Rep. No. 414, 92d Cong., 1st Sess. 44 (1971) (emphasis added).

⁵⁴ S.Rep. No. 99-50, 99th Cong., 1st Sess. 3 (1985). The Senate also said, in words clearly applicable to the pulp mill dioxin problem and Oregon's past success in making certain rivers fishable over the last 20 years, "it is indeed ironic that we must now warn people against consuming fish caught in many areas cleansed of conventional pollutants but still contaminated with toxic pollutants." Id. at 3.

necessary to attain water quality standards is not diluted by the Act's more recent provisions.

The DEQ's Addendum No. 2 suggests that the Commission should consider amending its rules to achieve more flexibility for "temporary" overloads, and in any event allow WTD several years before imposing strict requirements to achieve the water quality standards on the entire river. The Senate Committee went on to say this about the existing high-quality waters:

. . . Since standards assure continued progress toward the Act's goal, it would make little sense to allow deviations, however limited or temporary, from these judgments concerning the health and welfare of people

. . . . If economic effects truly are substantial and widespread, then a downgrading of standards may be justified, But this is a considered community wide decision to forgo higher beneficial uses of a water way, and must not be made in the narrow context of a source-specific variance.⁵⁵

This is precisely what the DEQ staff proposal, from July 17 to the present, asks the Commission to do.

⁵⁵ Id. at 6 (emphasis added).

III. AN EOC DECISION TO APPROVE WTD'S DISCHARGE REQUEST WILL VIOLATE THE ENDANGERED SPECIES ACT

A special case of a beneficial use is America's national symbol, the Bald Eagle. The eagle is listed as endangered or threatened in every state in the U.S. outside Alaska. Approval of the proposed permit by the Environmental Quality Commission will degrade the habitat of Bald Eagles, resulting in their injury or death and potentially disastrous effects on their populations. This will constitute a violation of the Endangered Species Act, which applies to state or federal government agency decisions.

A. Issuance Of A Permit Will Endanger Bald Eagles On The Lower Columbia River

Federally-protected Bald Eagles will be adversely affected by the toxic discharges that an approved permit would allow. Bald Eagles are listed as threatened in Oregon under the Endangered Species Act. Bald Eagles occupy an estimated twenty-five nests on the lower Columbia River, including one directly across the river from the Port Westward site. Eagles along the lower Columbia are already experiencing disturbing declines in reproduction rates because of deformed embryos and eggshell thinning.⁵⁶ Evidence from recent studies along the lower Columbia associates chlor-organic compounds DDT and PCB contamination with these deaths. What happens to other fish-eating birds is additional evidence of danger to eagles.

⁵⁶ "Bald Eagle Reproduction Down", The Register-Guard, September 20, 1989, (attached as Exhibit E).

Canadian biologists suspect dioxin from a pulp mill of wiping out every egg in a nearby great blue heron colony just to the north of here.⁵⁷ Studies in the U.S. also link low reproduction of cormorants and herring gulls to such contamination.⁵⁸ Increased exposure of Bald Eagles on the lower Columbia to any additional dioxins will increase the harm to eggs that is already occurring.

B. The Endangered Species Act Prohibits The EQC From Taking Any Federally-Protected Species

The Endangered Species Act⁵⁹ (ESA) prohibits all persons subject to United States jurisdiction from taking any wildlife species listed as endangered or threatened.⁶⁰ Under the ESA, "person" means "any officer, employee, agent, department, or instrumentality . . . of any State" ⁶¹ The EQC is a statutorily-created state entity,⁶² and therefore, its actions are subject to the prohibitions of the ESA.

⁵⁷ "Wipe-out of Heron Eggs Linked to Dioxin," Times Colonist, September 11, 1987 (attached as Exhibit F).

⁵⁸ "Bald Eagle Reproduction Down", The Register-Guard, September 20, 1989 (attached as Exhibit E).

⁵⁹ 16 U.S.C. §1538(a)(1)(B) (1982).

⁶⁰ See § 1538(a)(1)(B) (endangered); § 1533(d) (threatened). The EQC's responsibility will also be affected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, both of which mandate similar protective stances by persons and agencies. In addition, Oregon's own Endangered Species Act mandates such protections. All are likely to be violated by approval of a permit.

⁶¹ § 1532(13).

⁶² ORS 468.010

The ESA defines "take" as including "harm."⁶³ The U.S. Fish and Wildlife Service (USFWS) defines "harm" to include

significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.⁶⁴

Several courts have held that a state or federal agency can violate this "taking" definition through actions other than those directly causing physical injury.

In Palila v. Hawaii Dep't of Land & Natural Resources,⁶⁵ the U.S. Court of Appeals for the Ninth Circuit found that the ESA required it to enjoin a state agency from continuing to manage game animals on land that served as habitat for a protected species. There, the grazing habits of the animals maintained by the agency degraded lands critical to the endangered Palila bird. In its ruling, the court noted that there is no immediacy requirement in the ESA's "taking" prohibition.⁶⁶ An activity which could harm a protected species in the future -- for example, encroachment on critical habitat or adversely affecting a species' food source -- could amount to a taking.⁶⁷

⁶³ § 1532(19).

⁶⁴ 50 C.F.R. § 17.3. (1987).

⁶⁵ 852 F.2d 1106 (9th Cir. 1988).

⁶⁶ Id.

⁶⁷ Id.

In National Wildlife Federation v. Hodel,⁶⁸ the U.S. Fish and Wildlife Service (USFWS) authorized the use of lead shot ammunition by hunters, which resulted in secondary poisoning of Bald Eagles. The court held FWS's authorization constituted a taking under the ESA.⁶⁹ In Defenders of Wildlife v. Administrator, EPA,⁷⁰ a case decided by a U.S. Court of Appeals since the public hearings and the EQC's first meeting on this pulp mill permit, endangered species had eaten strychnine bait, either directly or indirectly, and died as a result. Strychnine can be distributed only if it is registered by the EPA under the Federal Insecticide, Fungicide, and Rodenticide Act.⁷¹ The court concluded:

the EPA's decision to register pesticides containing strychnine or to continue these registrations was critical to the resulting poisonings of endangered species.⁷²

The court held the EPA's registrations constituted takings of endangered species.⁷³

The discharge proposed in this permit will introduce dioxin, di-benzo furans, and other highly toxic organo-chlorine compounds into Columbia River fish species. The Bald Eagle's diet includes

⁶⁸ 23 Env't Rep. Cas. (BNA) 1089 (E.D. Cal. 1985).

⁶⁹ Id. at 1092-93.

⁷⁰ 1989 U.S. App. LEXIS 12232 (8th Cir. 1989).

⁷¹ Id. at screen *2.

⁷² Id. at screen *18 (emphasis added).

⁷³ Id. at screen *18.

a significant fish component. Indeed, the DEQ's October 5, 1989, Addendum No. 2 to its staff report explicitly admits that some dioxin in the Columbia River is "undoubtedly" transferred to sediment and some "is conveyed to aquatic biota,"⁷⁴ from which it moves into fish. Dioxin bioaccumulates. In consuming contaminated fish, eagles themselves are contaminated. As pointed out above, documented evidence shows that Bald Eagles residing on the lower Columbia River are already experiencing significant reproductive failure due to eggshell thinning associated with organo-chlorine exposure. (Dioxin is an organo-chlorine.) Therefore, an EQC decision to authorize issuance of this permit will result in a taking of a protected species. The Endangered Species Act prohibits such a decision by the EQC.⁷⁵

⁷⁴ (p.4)

⁷⁵ Furthermore, if the EQC grants permit approval, the threat of violating the ESA will also fall upon the EPA and impose upon EPA a duty to veto the permit. Section 7 of the ESA and implementing regulations require the EPA Regional Administrator to ensure that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered species or adversely affect its critical habitat. ESA § 7(a)(2), 16 U.S.C. § 1536(A)(2); 50 C.F.R. § 402 et. seq.

IV. DEQ HAS VIOLATED OREGON AND FEDERAL PUBLIC NOTICE LAWS AND REGULATIONS

DEQ has violated several State and Federal laws that are mandatory parts of the public notice and comment process. None of the notices issued by DEQ mentions the existence of a Fact Sheet, which is a direct violation of both Federal and State regulations. Furthermore, the Fact Sheet that has been provided to us by DEQ does not contain the information for the public that is required by the regulations to be in the mandated Fact Sheet. As a consequence, the procedures leading to the current EQC decision-making process render any prospective decision invalid. The process must be initiated anew.

A. DEQ'S Public Notices Have Been Deficient

DEQ's failure to mention the existence of a Fact Sheet in its public notices violates both Federal and State regulations. According to Oregon legal requirements, "any public notice and fact sheet shall be prepared and circulated consistent with the requirements of regulations issued under the Federal Act."⁷⁶

The federal regulations which are binding on DEQ are promulgated under the authority of § 304(i) of the CWA.⁷⁷ Any State program approved by the EPA Administrator must at all times be conducted in accordance with requirements of the pertinent parts of the federal regulations.⁷⁸

All public notices issued in accordance with federal regulation 40 C.F.R. § 124 must contain the following minimum information: "name, address, and telephone number of the person from who interested persons may obtain further information including copies of the draft permit, statement of basis or fact sheet," and a brief description of the comment procedures required by §§ 124.11 and 124.12.⁷⁹

⁷⁶ OAR 340-45-035(6).

⁷⁷ See discussion in 40 C.F.R. § 123.1(b).

⁷⁸ 40 C.F.R. § 123.1(f). The Clean Water Act likewise mandates that State permit programs shall at all times be in compliance with the Clean Water Act and EPA guidelines promulgated pursuant to § 304(i)(2) of the Act. 33 U.S.C. § 1342(c)(2), CWA § 402(c)(2). Section 304(i)(2) establishes the minimum procedural requirements with which State programs must comply, including procedures to make information available to the public.

⁷⁹ 40 C.F.R. § 124.10(d)(1)(iv), (v) (emphasis added).

Oregon regulations require that "in order to inform potentially interested persons of the proposed discharge and of the tentative determination to issue an NPDES permit, a public notice announcement shall be prepared and circulated in a manner approved by the Director."⁸⁰ This notice "shall tell of public participation opportunities, shall encourage comments by interested individuals or agencies, and shall tell of the availability of Fact Sheets, proposed NPDES permits, applications and other related documents available for public inspection and copying."⁸¹ Although a Fact Sheet was eventually created, its existence was not disclosed to the public as required.

DEQ issued two notices regarding the WTD pulp mill NPDES permit. The first notice entitled "Chance to Comment On . . . Draft of Public Hearing Notice" was issued on June 6, 1989 (Exhibit G). There was not even a Fact Sheet in existence at that time. On July 10, DEQ issued a subsequent notice extending the public notice and comment period to August 1, 1989.⁸² None of the notices informed the public that a Fact Sheet was available, as required by 40 C.F.R. § 124.10(1)(d)(iv) and OAR

⁸⁰ OAR 340-45-035(3).

⁸¹ Id. (emphasis added).

⁸² Exhibit H. In addition, DEQ published a notice of a public hearing in the Clatskanie Chief, on July 6, 1989 (Exhibit I), and sent a news release on June 26, 1989, to several newspapers in the Portland area and all the media in Columbia and Clatsop County about the public hearing (Exhibit J). They said nothing about any Fact Sheet.

340-45-035(3).⁸³ Making the public aware of the existence of a Fact Sheet is critical in order to alert the public of critical resource issues involved in the decision to be made and to allow for meaningful and intelligent comments as underscored by the EPA in previous permitting processes.

In associated regulations under the Resource Conservation and Recovery Act, the federal Environmental Protection Agency has discussed the central role of Fact Sheets. They are "to explain the basis for any permit condition and thus allow meaningful public comments on the draft permit."⁸⁴

The purpose of draft permits and fact sheets is to inform the public and the regulated party (and EPA in the case of State-issued permits) of the restrictions. This information is needed so that interested parties can comment intelligently on what the agency proposes.⁸⁵

The failure of DEQ to inform the public of a Fact Sheet (which was later drafted) has not permitted the public to judge the adequacy of the permit or submit meaningful and effective comments, thereby rendering the process defective. It is also a procedural violation that can only be cured by a renewed opportunity for public comment.

⁸³ The first refers to some other related documents, but not to the (non-existent) Fact Sheet. The "Evaluation Report" is not a Fact Sheet and is not identified as such.

⁸⁴ 53 Fed. Reg. 7642 (1988).

⁸⁵ 54 Fed. Reg. 18716 (1989).

B. The Contents of the "Fact Sheet" Provided Last Week Does Not Comply With Regulations

DEQ has recently provided us with a document labeled Fact Sheet and dated July 6.⁸⁶ Apart from not being previously made available to the public as required, it does not comply with federal regulations requiring that the Fact Sheet "shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit."⁸⁷ Neither does it meet the necessary requirements of OAR 340-45-035(4).

A fact sheet for each NPDES general permit must include:

b) the type and quantity of wastes to be discharged; c) applicable standards and guidelines used as a basis for effluent limits.⁸⁸

DEQ's Fact Sheet fails to adequately describe "the type and quantity of wastes to be discharged."⁸⁹ It discusses the presence of 2,3,7,8-tetrachloro-dibenzo-p-dioxin as a recognized pollutant in effluent from bleached kraft pulp mills, but not the fact that there are some 300 different toxic and potentially toxic organochlorine compounds coming out of bleached kraft pulp mills, including additional dioxins aside from 2,3,7,8-tetrachloro-dibenzo-p-dioxin, and furans (toxicologically identical to dioxin). Neither are disclosures of "quantity"

⁸⁶ See Exhibit K.

⁸⁷ 40 C.F.R. § 124.8.

⁸⁸ OAR 34-45-035(4)(a)-(e).

⁸⁹ OAR 34-45-035(4)(b).

made. The Fact Sheet also does not discuss the "applicable standards."⁹⁰ The Fact Sheet also does not address the cumulative effects of additional dioxin, PCB's, and other chlorinated organic compounds on fish, wildlife, and public health.

In addition to meeting the requirements of 40 C.F.R. § 124.8, Fact Sheets must contain "any calculations or other necessary explanation of the derivation of specific effluent limitations and conditions, including . . . an explanation of how the alternate effluent limitations were developed."⁹¹

The Fact Sheet merely states that DEQ has calculated the water quality standard at the edge of the mixing zone, and that the levels in the effluent would have to be "less than detectability."⁹² It does not provide any "calculation" or "other necessary explanation of the derivation" of the amount of dioxin allowed. In fact, it does not state what amount of dioxin will be present in the plant's effluent. This and all other documents simply claim that WTD will be using the latest technology and methodologies and will do their utmost to reduce the amount of dioxin coming out of the plant. That does not comply with 40 C.F.R. § 124.56(a).

⁹⁰ We recognize that an "Evaluation Report" does so, but this cannot substitute for the required Fact Sheet, which must be clearly labeled as such.

⁹¹ 40 C.F.R. 124.56(a).

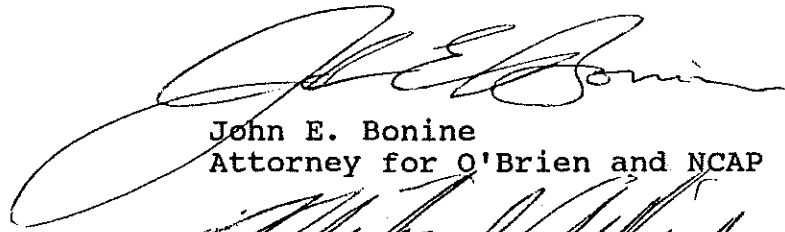
⁹² Id. at 3.

Conclusion

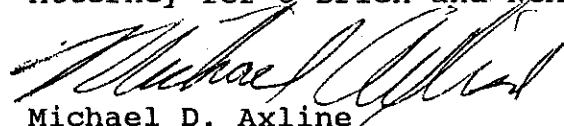
For the reasons stated above, approval of a permit for the Port Westward pulp mill at the Environmental Quality Commission on October 20, 1989, would be legally invalid. In addition, as forcefully pointed out by Federal agencies, by the Oregon Salmon Commission, by Indian interests, by ordinary citizens, by citizen groups, and by our client Dr. Mary O'Brien, approval would be unacceptably poor public policy.

The Commission would serve the people of Oregon best by taking a pause and initiating an independent look into the factual, policy, and legal issues raised by the proposed release of a significant new volume of chlorinated organic compounds into Oregon's environment. A decision can be made in an instant. The consequences will be with us and our children for decades.

Respectfully submitted,

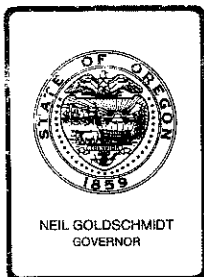


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Legal Interns



Environmental Quality Commission

811 SW SIXTH AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

October 12, 1989

Phillip E. Grillo
Attorney at Law
1727 N. W. Hoyt Street
Portland, OR 97209

Kurt Burkholder
Assistant Attorney General
1515 S. W. 5th Avenue, Suite 410
Portland, OR 97201

Re: SA-891-706

Before I issued the September 25, 1989 order, we agreed to defer discussing appeal procedure until you had reviewed and considered the order. We have now had two extended discussions about appeal procedure.

In the meantime, the City has filed appeals in the Court of Appeals and with the Environmental Quality Commission and expects to file shortly in circuit court. The applicable review procedure is an issue on appeal.

Under these circumstances, I will not be supplementing the September 25, 1989 order to address review procedure.

Enclosed is a copy of the materials I am providing to the Environmental Quality Commission in connection with its October 20, 1989 meeting. As agreed, the scope of requested EQC action is to review the City's request for a stay of further EQC action.

Sincerely,

Linda K. Zucker
Hearings Officer

LKZ:y
HY8985

Enclosures

cc: Environmental Quality Commission
Fred Hansen, Director, DEQ
Environmental Cleanup Division, DEQ

PERKINS COIE

A LAW PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS
U.S. BANCORP TOWER, SUITE 2500 • 111 SOUTHWEST FIFTH AVENUE • PORTLAND, OREGON 97204
TELEPHONE: (503) 295-4400

October 17, 1989

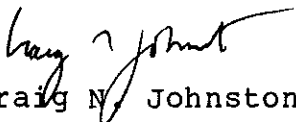
Via Hand Delivery

Mr. William P. Hutchison, Jr.
Tooze, Marshall, Shenker,
Holloway & Duden
333 S.W. Taylor Street
Portland, OR 97204

Dear Bill:

Enclosed is a copy of Attachment A to the testimony to be presented by WTD Industries at the October 20, 1989, hearing regarding the new source application. This Attachment was inadvertantly omitted from the package you received on Friday, October 13, 1989. We apologize for any inconvenience this oversight may have caused.

Very truly yours,


Craig N. Johnston

CNJ/cab
1357w
cc with enc.:

Via Hand Delivery

William W. Wessinger
Michael Huston
Eugene Rosalie
Lydia Taylor

Via Federal Express

Emery N. Castle
Genevieve Pisarski Sage
Mary O'Brien
Henry Lorenzen

WTD

INDUSTRIES INC.

October 13, 1989

Testimony on the Port Westward Pulp New Source Application

Thank you for the opportunity to testify before you today. My name is David Walseth and I am the Pulp Mill Project Manager for WTD Industries. Upon completion of the mill, I will be the plant manager in charge of day-to-day operations at the mill.

I come before you today to testify in favor of the new source application that is before you concerning the proposed Port Westward mill. As you may recall, I also testified before you in both July and September. I will not repeat my prior testimony today. Instead, I will focus on establishing that the Commission can make the findings required under OAR 340-41-026(3)(a) as a precondition to the approval of the proposed discharge.¹

At the outset, I would like to make two points. First, I would like to point out that the levels of TCDD at issue do not pose risks that are qualitatively or quantitatively different

¹ The Northwest Coalition for Alternative to Pesticides ("NCAP") has also raised a series of arguments based on the premise that this is a rulemaking proceeding. In fact, however, this proceeding will result in an order other than a contested case under ORS 183.310 and 183.384. See Linnton Plywood Association v. Department of Environmental Quality, 68 Or App 412 (1984). The Attorney General's office supports this view. Moreover, even if this were a rulemaking, NCAP's concerns have been addressed in substance.

Testimony of WTD Industries
October 13, 1989

from those that DEQ deals with on a day-to-day basis.

Notwithstanding the legitimate debate in the scientific community concerning TCDD's effects on humans, EPA and, in turn, DEQ have set water quality standards that are premised on worst-case assumptions as to its toxicity. Further, EPA's water quality criteria (and DEQ's water quality standard) are based on the most stringent acceptable risk range (1×10^{-6}) that EPA uses for potential carcinogens.² Given these factors, the Commission should recognize that, if anything, the risk levels here are lower than those typically presented.

Secondly, I would like to emphasize that the proposed mill represents a "best case" scenario for any additional pulp mills in the Columbia River Basin. Both DEQ and EPA have recognized as much. As a policy matter, it simply makes no sense to stop the construction of such a mill because of any perceived inadequacies

² Two points are worth noting here. First, EPA and other regulatory authorities have used different risk levels at different times in setting health-based standards. Frequently, the risk levels are much less restrictive than that used here. For example, EPA has recently adopted a 10^{-4} maximum individual risk level for emissions of benzene (a known carcinogen) to the atmosphere. 54 Fed.Reg. 38045, 38052-53 (September 14, 1989).

Secondly, the relative risk posed by the DEQ water quality standard for dioxin is put in perspective when one considers that the underlying 10^{-6} risk range is the lower than the level of risk than a person assumes in drinking one beer in a lifetime. See M. Gough, "Effects of Dioxin on Humans and Regulatory Policies About Dioxin" (citing the analysis of the noted toxicologist Bruce Ames on relative risks).

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of the existing mills.³ Far from exacerbating the problem, the Commission has the opportunity here to take the first step in moving the Columbia River Basin into a new era of pollution control.

I now turn to the requirements of OAR 340-41-026(3)(a). The first three of these requirements have been raised as outstanding issues. I will not address these requirements in the order set forth in the rule. Instead, I will first address subsection (C), which precludes the approval of new discharges into water bodies that are classified as being water quality limited, then subsection (A), which requires a finding that the new discharge will not cause a water quality standard violation, and finally subsection (B), which requires a finding that the new discharge will not threaten or impair any recognized beneficial uses.

1. The Columbia is not classified as water quality limited in the reach to be affected by the proposed discharge.

Section 304(1)(1)(A) and (B) of the Clean Water Act required each state to submit to EPA by February 4, 1989 a list of those waters within the state that could not reasonably be anticipated to attain or maintain water quality standards. 33 U.S.C. § 1314(1)(1)(A) and (B). Other portions of Section 304(1) make clear that the states were not required to list entire rivers

³ This is particularly true where, as in this case, the problem is really one of discrete areas or contamination, rather than river-wide contamination.

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when only portions thereof might have water quality problems. Indeed, subsections 304(1)(1)(C) and (D) specifically embrace the idea of river segmentation. For example, Section 304(1)(1)(C) required the states to submit information regarding specific point sources "for each segment of the navigable waters included on such lists." 33 U.S.C. § 1314(1)(1)(C) (emphasis added).

The idea of considering water bodies on a segment-by-segment basis is also consistent with both common sense and the legislative history of Section 304(1). Some pollutants, like TCDD, are subject to attenuation and, therefore, do not distribute themselves evenly throughout the water column. Rather, they tend to form isolated "toxic hot spots" around a given source area. If a given river has one or more of such hot spots, it makes sense to deal with them as a series of one or more discrete problems, rather than as a river-wide problem. See, e.g., 2 A Legislative History of the Water Quality Act of 1987 at 1655-56 (statement of Jack E. Ravan, Asst. Administrator of EPA, as to how Section 304(1) was designed to deal with "toxic hot spots").

The DEQ submitted its Section 304(1) list to EPA on June 4, 1989. In accordance with the dictates of Section 304(1), DEQ specifically listed only two river mile segments in the Columbia River as being water quality limited for TCDD. Both of these segments are associated with an existing pulp mill. Most

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importantly, neither of these segments include the river reach that is relevant here. The only logical conclusion that can be drawn from these facts is that the segment here at issue is not classified as being water quality limited as a matter of Oregon law.⁴

DEQ took the proper legal approach in the Section 304(1) listing process. As indicated in Addendum No. 2 to DEQ's July 21, 1989 staff report (the addendum is dated October 5, 1989), there is currently no supportable basis for concluding that there are any water quality exceedances for TCDD in the Columbia other than in the areas immediately surrounding the existing pulp mills. See pages 2-3 of Addendum No. 2. DEQ further points out that, in its best professional judgment, there is currently insufficient evidence to even list the relevant reach as being "suspected" of not meeting water quality standards for TCDD. Id. In light of these determinations, any decision to list the entire river, or even broader segments of the river, would have violated the "substantial evidence" standard embodied in ORS 183.484(4)(c).⁵

⁴ The Commission is a creature of Oregon law and is not required or authorized to enforce standards based on the law of other states.

⁵ The Attorney General's office has characterized the DEQ's 304(1) listing process as an "order other than a contested case" under the Oregon Administrative Procedures Act. ORS 183.484(4)(c) requires that any such order be "supported by substantial evidence in the record."

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On June 9, 1989, EPA approved Oregon's submittals pursuant to Section 304(1)(A) and (B). This approval reflects EPA's support of the approach that DEQ has taken to the listing process.

Moreover, DEQ's approach to the 304(1) listing process is in accordance with the facts. It is well established that TCDD does not remain dissolved in water, but rather partitions readily to organic carbon solids, including biota.⁶ An October 1988 EPA Region 5 report indicates that the TCDD in pulp mill effluent is already more than 75% distributed to solids in the effluent when it leaves the mill. EPA's even more recent 104 mill study of U.S. bleached pulp mills confirms this extreme TCDD partitioning between pulp mill solids and liquids in effluent treatment.

The partitioning process described above continues when effluent is discharged into a river. The National Council for Air and Stream Improvement (NCASI) has estimated the ratio of the concentration of TCDD absorbed to organic carbon solids to the concentration dissolved in the water phase to be between 10^6 and 10^7 . This means that more than 99.99% of the TCDD in the river is attached to solids, most of which settle to the river bottom. In this case, the nearest suspected source, the Weyerhaeuser mill

⁶ In addition to being supported by the EPA studies mentioned below, this point was made by the Northwest Coalition for Alternatives to Pesticides ("NCAP") in testimony before the Commission on September 8, 1989.

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in Longview, Washington, is more than 10 river miles away. Given the partitioning and settling that is known to occur, it is highly unlikely that TCDD from any upstream mill is still present at levels exceeding water quality standards in the vicinity of the proposed mill.⁷

2. The new discharge will utilize highest and best control technologies and will not cause a water quality standard violation.

To the extent that there is any TCDD problem in the Columbia River, this mill is a part of the solution, not a part of the problem. The proposed discharge that you are being asked to approve will be from a state-of-the-art mill that was specifically designed to minimize the problems that some traditional mills have had with TCDD and other chlorinated organics. We know of no bleached kraft pulp mill in the world that has ever been subject to requirements for these constituents that are as strict or more strict than those contemplated in the draft permit. In accordance with the conditions that DEQ established in its July 21, 1989 staff report, WTD has now

⁷ It is our further position that this discharge could be approved even if the river were limited in the relevant reach. As pointed out by Robert Burd, the Director of the Water Division in EPA Region 10, in his letter to Lydia Taylor dated September 14, 1989 (Attachment A hereto), the relevant agencies (EPA, DEQ and the Washington Department of Ecology) have agreed on a strategy that will solve all of the TCDD water quality problems in the Columbia River by June 4, 1993. Given that this strategy is in place, the substance of OAR 340-41-026(3) would be met even if the relevant reach were classified as being water quality limited.

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provided DEQ with a refined engineering analysis demonstrating that the plant will in fact use the "highest and best practicable" control technologies to minimize the formation of TCDD and other chlororganic compounds. As indicated in Addendum No. 2 to that staff report, both DEQ and EPA concur with our assessment in this regard (see page 8 of Addendum No. 2). Rather than "causing" any perceived problem, this mill is actually part of the solution.

To the extent that OAR 340-41-026(3)(a)(A) imposes any restriction beyond that imposed by OAR 340-41-026(3)(a)(C), it can only serve to preclude the approval of any new discharge that would push a river over the water quality threshold and into a state of noncompliance. In this case, however, the relevant discharge will contain TCDD at levels below 2 parts per quadrillion ("ppq"). DEQ has specifically determined that this discharge will not cause a water quality standard violation outside of the allowed mixing zone (see page 4 of Addendum No. 2). Accordingly, the Commission can clearly make the finding required by OAR 340-41-026(3)(a)(A).

3. The new discharge will not threaten or impair any beneficial uses.

OAR 340-41-202 sets forth the relevant beneficial uses for the North Coast-Lower Columbia River Basin. Amongst others, these uses include anadromous fish passage, salmonid fish rearing and spawning, and resident fish and aquatic life. NCAP focuses

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on impacts to fisheries in arguing that this finding cannot be made. See NCAP's Statement in Opposition pp. 4-6.

There is no evidence that fish or wildlife would be threatened or impaired by TCDD discharges at the levels allowed in the draft permit. In fact, the evidence is clearly to the contrary. DEQ and the Commission have formally promulgated a TCDD standard of 10 ppq beyond the mixing zone for the protection of aquatic life. See OAR 340-041-205(2)(q) and Table 20. As pointed out above, DEQ has set the discharge level in this case at a level that will ensure that the TCDD in the river is at levels below 0.013 ppq. Thus, the Commission is bound by its own rules to determine that the TCDD discharge in this case will not threaten or impair aquatic life.

Moreover, the 0.013 ppq standard itself was based upon fish consumption. See OAR 340-41-205(2)(q)(B) and Table 20.⁸ Because this standard is set at levels to ensure that fish can continue to be consumed by people, the EQC can find, and indeed is required to find, that the discharge will not threaten or impair the fisheries industry.

Conclusion

⁸ See also NCAP's Statement in Opposition p. 4. This concern is not exclusive, however. OAR 340-41-205(2)(q)(B) and the accompanying Table 20 indicate that DEQ also considered direct human consumption of the water.

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In closing, we would like to reiterate that the proposed discharge you are being asked to approve is subject to the most stringent requirements ever required for any bleached kraft pulp mill in the world. From the outset, WTD has been willing to meet every legal requirement, and in some areas has agreed to go beyond what the law requires to meet the concerns of both DEQ and the Commission in this environmentally sensitive area. Most significantly, we have not challenged the very stringent water quality standard that is being applied to us despite the fact that we believe it to be overly restrictive.

We believe that WTD has done all it can do to satisfy the concerns raised by DEQ and the Commission throughout this process. We further believe that we have been successful in resolving these issues, and that a favorable decision can and should be made today. As you are well aware, this is now the third Commission meeting dealing with this topic. All issues have now been raised and considered in careful detail. With these points in mind, we urge the Commission to immediately approve the proposed discharge now.

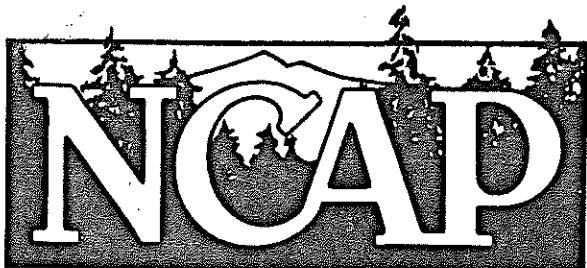
We underscore our request by reemphasizing our belief that this mill represents a "best case" scenario for any additional pulp mills in the Columbia River Basin. Again, it makes no sense to preclude the addition of a state-of-the-art mill because of any perceived inadequacies of the existing mills. Moreover,

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there are no legal impediments to reaching the correct result in this case; as pointed out by DEQ and, separately, by WTD in these materials, the Commission can make the necessary findings under OAR 340-41-026(3)(a).

Finally, we would like to point out our most stringent opposition to the type of "conditional" permit discussed briefly at the Commission's last hearing on September 8. Quite frankly, neither WTD nor any other industrial entity could reasonably contemplate spending more than \$450 million in building a mill that it might never be able to operate. This is particularly so in situations where, as here, the conditions at issue are not only beyond its control, but in fact are in the control of its competitors in the marketplace. As pointed out by Bob Burd of EPA in his September 14, 1989 to Lydia Taylor (Attachment A hereto), such a permit condition would be unfair to any new discharger. In short, the granting of such a "conditional" discharge would, in our mind, be the equivalent of an outright denial.

Thank you for this opportunity to testify. We would be pleased to answer any questions the Commission may have.



**NORTHWEST COALITION for
ALTERNATIVES to PESTICIDES**
P.O. BOX 1393 EUGENE, OREGON 97440 (503) 344-5044

October 12, 1989

*Generative -
FYI -
MO'B*

Representative Ron Cease
Senator Dick Springer
Co-chairs of the Joint Committee on Environment, Energy, and Hazardous Waste
453 State Capitol
Salem, OR, 97310

Dear Representative Cease and Senator Springer,

The Northwest Coalition for Alternatives to Pesticides formally requests that you convene a public forum to present to the people of this state viable alternatives to the permitting of more deadly dioxins in the air, water, soil, and white paper products of Oregon as a result of the construction of a new pulp mill by WTD Industries on the Columbia River near Clatskanie. At least two other WTD pulp mills are proposed in the near future in other parts of the state.

At least two alternatives exist (and both allow the construction of new mills which provide more jobs):

- 1) Production of chlorine-free and thus dioxin-free bleached pulp. This process uses hydrogen peroxide rather than chlorine. The Oregonian reported on Oct. 12, 1989, that a new North Pacific Paper Corp. mill at Longview, Wash., "will use a hydrogen peroxide system rather than chlorine for pulp bleaching to avoid controversy over discharge of dioxins, a toxic substance...". Incidentally, this process uses half the trees and produces pulp at a lower cost than the chlorine bleach process.
- 2) Production of unbleached pulp, and thus no dioxins. Public and private sectors of Sweden, the UK and continental Europe are moving in this direction for paper products that do not "need" to be white - e.g., paper diapers, tampons, general use office paper, computerpaper. Tasmania in Australia is considering state use of unbleached paper.

Scientists, engineers, and environmental specialists will readily testify at a public forum which you convene. Here are three possible strong participants:

- 1) Terry Kavanagh, senior vice president in pulp, TEMBEC (ph. 819-627-3321) His mill uses the hydrogen peroxide process to produce bleached paper without chlorine and dioxin.

- B) Shelley Stewart, national paper and pulp campaigner for Greenpeace, Seattle (206-632-4326). She has been working with the international movements to reduce chlorinated emissions and to create demand for low-bleach or no-bleach goods.
- C) Mary O'Brien, staff scientist for NCAP, who testified in Tasmania last spring concerning a kraft pulp mill which has been delayed until the government can investigate unbleached and environmentally safe paper production. (503-344-5044)

Obviously, such a forum is valuable only if it is held before the Environmental Quality Commission decides whether to approve the discharge of dioxin from a new mill into the Columbia (which decision will inevitably lead to approval for other dioxin-producing mills). Therefore, we also request that you coordinate the timing of this forum with the EQC. It is our sense that much of the information which would be offered at such a public forum would be new to the EQC and, therefore, valuable to their deliberations. There has been no presentation of the opportunities presented by production of chlorine free pulp and paper in Oregon. This forum will therefore play a critical role in responsible public decision-making.

Sincerely,

Mary H. O'Brien

Mary H. O'Brien
NCAP Staff Scientist

Anita Johnson

Anita Johnson
NCAP Volunteer



*Mass Composting
Facility Service
Agreement*

Metropolitan Service District
and Riedel Environmental
Technologies, Inc.

July 1989

METRO

The Metropolitan Service District, your regional government, handles region-wide concerns in the urban areas of Clackamas, Multnomah and Washington counties. Metro is responsible for solid waste management, operation of the Metro Washington Park Zoo and the Oregon Convention Center, transportation and land-use planning, urban growth management and technical services to local governments.

Councilors by district are:

District 1	Mike Ragsdale
District 2	Lawrence Bauer
District 3	Jim Gardner
District 4	Richard Devlin
District 5	Tom DeJardin
District 6	George Van Bergen
District 7	Ruth McFarland
District 8	Judy Wyers
District 9	Tanya Collier
District 10	Roger Buchanan
District 11	David Knowles
District 12	Gary Hansen

MASS COMPOSTING FACILITY SERVICE AGREEMENT

Metropolitan Service District
Rena Cusma, Executive Officer

Riedel Environmental Technologies, Inc.
Jack Reece, Chief Operating Officer

Acknowledgements

METRO

Bob Martin, Director of Solid Waste
Debbie L. Gorham, Project Manager
Sandy Gurkewitz, Project Assistant
Daniel B. Cooper, General Counsel
Gloria Logan, Administrative Secretary

RIEDEL

W. Alex Cross, President, RWDS.
Gary Newbore, Sr. Vice Pres., RET
Joe McGuinn, Chief Fin. Ofc., RET

Assisted By

PaineWebber Incorporated
Dean Witter Reynold, Inc.
Alex. Brown & Sons, Inc.
Stoel Rives Boley Jones & Grey
Public Financial Management
R.W. Beck and Associates

Credit Suisse
Donaldson, Lufkin & Jennerette
Perkins Cole

JULY 1989

MASS COMPOSTING SERVICE AGREEMENT

This Agreement is made and entered into this 16th day of August 1989, by and between the Metropolitan Service District of Portland, Oregon, a service district organized under Chapter 268 of the Oregon Revised Statutes and a municipal corporation and public body, corporate and politic, of the State of Oregon, and Riedel Oregon Compost Company, Inc., an Oregon Corporation with its home office in Portland, Oregon, each such party being hereinafter sometimes referred to as a "Party" and collectively as the "Parties."

RECITALS

(a) Metro has selected the Contractor to design, construct, own, shakedown, performance test and operate for the term provided for herein the Facility to recover Compost Product from Municipal Solid Waste and to market and distribute the Compost Product.

(b) The Contractor has agreed to design, construct, own, shakedown, performance test and operate for the term provided for herein the Facility to recover Compost Product from Municipal Solid Waste and to market and distribute the Compost Product. Actual design, construction, financing and operation of the Facility will be done by the Contractor, a wholly owned subsidiary of the Contractor, or by such affiliates of the Contractor as may be acceptable to Metro.

(c) The Contractor's authority to enter into this Agreement is evidenced by a corporate resolution of the Contractor duly adopted on August 16, 1989, by the Board of Directors of the Contractor and certified by the Secretary of the Contractor, a certified copy of which is set forth as Exhibit A to this Agreement.

(d) Metro's authority to enter into this Agreement is evidenced by Resolution No. 89-1112 duly adopted by the Metro Council on July 27, 1989, a conformed copy of which is set forth as Exhibit B to this Agreement.

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ARTICLE I.

DEFINITIONS

As used in this Agreement, including the Exhibits hereto, the following terms shall have the respective meanings set forth in this Article I unless another meaning is expressly provided for a particular term elsewhere in this Agreement.

"AAA" shall mean the American Arbitration Association.

"Acceptable Waste" shall mean all Municipal Solid Waste except that portion of Municipal Solid Waste which is specifically defined as Unacceptable Waste, provided that Unacceptable Waste (excluding Hazardous Waste) delivered to the Facility and accepted by Contractor as provided herein shall be considered Acceptable Waste.

"Act of God" means an unanticipated grave natural disaster or other natural phenomenon, the effects of which could not have been prevented by the Party hereto claiming excuse of performance or relief from performance of the obligations of such Party under this Agreement or avoided by the exercise of due care or foresight by such Party.

"Additional Bonds" shall mean any one or more series of bonds issued by Metro as part of Additional Financing required in connection with financing a Capital Improvement pursuant to and in accordance with the provisions of Section 6.16 hereof which are secured by any of the pledges, mortgages, properties, assets or revenues which are security for the Bonds pursuant to Section 4.1(c).

"Additional Equity Contribution" shall mean the equity contribution required or permitted to be made by the Contractor as part of the Additional Financing necessary to finance a Capital Improvement, all as contemplated by Section 6.16 hereof.

"Additional Financing" shall mean any combination of Additional Bonds, Additional Interim Debt, and Additional Equity Contribution provided pursuant to and in accordance with the provisions of Section 6.16 hereof for the purpose of financing the costs of acquiring, constructing and installing a Capital Improvement.

"Additional Interim Debt" shall mean such Interim Debt issued as part of Additional Financing required in connection with financing a Capital Improvement pursuant to and in accordance with the provisions of Section 6.16 hereof.

"Additional Performance Test" shall mean a performance test in accordance with the requirements and procedures set forth in Exhibit C hereto which is undertaken by the Contractor at the

request of Metro as provided in and pursuant to Section 8.12 hereof.

"Aeration Slabs" means beds where the Compostable Fraction is aerated for a period of approximately three (3) weeks.

"Aerobic Composting" means decomposition of organic matter in the presence of air.

"Affiliate" means a Person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, a specified Person. Provided, however, no Credit Provider shall be considered an Affiliate of Metro or Contractor under this Agreement.

"Agreement" means this Mass Composting Service Agreement as the same may be amended, modified and supplemented from time to time in accordance with the provisions of Section 16.6 hereof.

"Anaerobic Composting" means the decomposition of organic matter in the absence of air.

"Annual Billing Period" shall mean for each Annual Billing Period other than the first, the twelve calendar month period commencing on the first Day of July following the calendar year in which the first Billing Month occurs and ending on the thirtieth 30th Day of June, and each twelve calendar month period thereafter. The first Annual Billing Period shall commence on the first Day of the Billing Month following the Commercial Operation Date and shall end on the thirtieth (30th) Day of June following the first Billing Month. The last Annual Billing Period shall end concurrently with the end of this Agreement.

"Applicable Law" shall mean all statutes, rules or regulations of the United States, State of Oregon, City of Portland, Multnomah County or Metro that apply to or govern the Facility.

"Arbitration Request" shall mean a written request to submit a dispute between the parties to binding arbitration pursuant to Section 13.1 hereof.

"ASP" shall mean the Arbitration Service of Portland.

"Authorized Representative" shall mean: (i) when used with respect to Metro, any person or persons designated from time to time by the Executive Officer by means of a writing signed by the Executive Officer and delivered to the Contractor; and (ii) when used with respect to the Contractor or RET, any person or persons designated from time to time by a resolution of the Governing Body of the Contractor or RET (as appropriate), a certified copy of which resolution is delivered to the Metro Authorized

Representative. Metro and the Contractor shall each have at least one and not more than three Authorized Representatives at any given time.

"Batch" means the Acceptable Waste loaded into the DANO drum at the Facility on a given day, tracked as it is repositioned and moved within the drum, and removed from the drum as Compostable Fraction.

"Billing Month" means the monthly period used to determine components of the Tip Fee as further defined in Exhibit K.

"Bond Counsel" shall mean: (i) Stoel Rives Boley Jones & Grey, attorneys of Portland, Oregon; (ii) one of the law firms listed on Exhibit D and selected by Metro or any other qualified law firm agreed to by Metro, the Contractor and the Credit Provider.

"Bond Documents" shall mean the bond ordinance, the Loan Agreement, the bond purchase agreement and any other document, instrument or agreement (other than this Agreement) executed and delivered in connection with the issuance and sale of the Bonds or as security therefor.

"Bonds" shall mean the limited obligation revenue bonds to be issued by Metro, at the request of the Contractor, for the purpose of providing part of the funds necessary to acquire, construct and install the Facility, which bonds may be issued in one or more series and which, to the full extent permissible under applicable law, shall be issued such that the interest thereon shall be excludable for federal income tax purposes from the gross incomes of the owners thereof and, to the extent not so permissible under applicable law, shall be issued such that the interest thereon shall be subject to federal income taxation. In addition, Bonds shall include the Term Loan as provided for in the Reimbursement Agreement.

"Business Day" means any day other than a Saturday, Sunday or holiday for state governmental employees in the State of Oregon.

"By-Pass Waste" shall mean Acceptable Waste other than Rejected Waste that Metro delivers or is prepared to deliver to the Facility, which the Contractor does not or cannot Process.

"Capital Improvement" shall mean any repair, replacement, improvement, alteration, or addition to the Facility or any part thereof (other than any repair, replacement, improvement, alteration, or addition constituting normal maintenance of the Facility).

"Certificate of Completion" shall mean a certificate of the Contractor's Authorized Representative in the form attached hereto as Exhibit E to be executed and delivered to Metro upon the completion of the acquisition, construction, installation and Performance Test of the Facility.

"Change in Law" means the occurrence of any event or change in law specifically set forth below:

(a) the adoption, promulgation, modification, or change in administrative interpretation occurring after the date of this Agreement, which adoption, promulgation, modification, or change in administrative interpretation relates to:

- (i) any federal statute, regulation, ruling or executive order;
- (ii) any state, city, county, special district, Metro, or other local government statute, ordinance, regulation or executive order; or
- (iii) any substantially adverse judicial interpretation of such laws entered as a matter of record by a court of competent jurisdiction; or

(b) any order or judgment of any federal, state or local court, administrative agency or governmental body issued after the date of this Agreement, if:

- (i) such order or judgment is not also the result of the willful or negligent action or inaction of the Party relying thereon or of any third party for whom the Party relying thereon is directly responsible; and
- (ii) the Party relying thereon, unless excused in writing from so doing by the other Party, shall take or have taken, or shall cause or have caused to be taken, all reasonable actions in good faith to contest such order or judgment (it being understood that the contesting in good faith of such an order or judgment shall not constitute or be construed as a willful or negligent action of such Party); or

(c) the imposition by a governmental authority or agency of any new or different material conditions in connection with the issuance, renewal, or modification of any official permit, license, or approval after the date of this Agreement;

provided that if any matter described in (a), (b) or (c) of this definition establishes requirements increasing: (I) the

cost to Contractor of acquiring and preparing the Facility Site, or designing, constructing, starting-up, operating or maintaining the Facility, or conducting the Performance Test; or (II) the Facility Price; then such matter shall only constitute a "Change in Law" for purposes of this Agreement if such increase is in an amount greater than one (1) percent of the Facility Price; and provided further that no matter described in (a), (b) or (c) of this definition shall constitute a "Change in Law" for purposes of this Agreement unless the changes resulting therefrom exceed the most stringent legal requirements applicable to Contractor or the Facility which were:

- (A) in effect as of the date of this Agreement;
- (B) agreed to by Contractor in any applications of the Contractor for official permits, licenses or approvals pending as of the date of this Agreement; or
- (C) contained in any official permits, licenses, or approvals provided to the Contractor with respect to the Facility which are obtained by the Contractor as of the date of this Agreement;

and provided further that the adoption of or change, amendment or modification to any federal tax, state tax, local tax, or any other tax law shall not be considered a "Change in Law" for purposes of this Agreement, and an increase in Contractor's cost shall not include any impairment of the tax position of the Contractor or any lessor of the Facility under federal, state or local tax law or any other tax law.

"Change Order" shall mean any change in the Facility made during the course of construction of the Facility in the Facility Specifications, including any change requiring a Capital Improvement, which change is made pursuant to the provisions of Sections 6.12, 6.13, 6.14 or 6.15 hereof.

"Code" means the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

"Commencement Date" shall mean the day next succeeding the date the Notice to Proceed is received by the Contractor.

"Commercial Operation Date" shall mean the date specified as such by Metro and the Contractor pursuant to Section 7.7(b) hereof.

"Compostable Fraction" means the fine fraction of the material immediately leaving the DANO Drum from which Compost Product will be produced. After removal from the DANO Drums this

fraction is then placed on the Aeration Slabs and processed for a period of approximately three (3) weeks.

"Composting" means a controlled or engineered method of Municipal Solid Waste treatment in which the organic component of the solid waste stream is biologically decomposed under aerobic conditions to a state in which it can be easily and safely handled, stored and applied.

"Compost Contracts" means any agreement or agreements for the transfer for a beneficial use to third parties of Compost Product.

"Compost Product" means a highly stabilized marketable or usable organic product which has resulted from the Processing and Composting of Acceptable Waste by using a combination of mechanized equipment and Aerobic Composting. It is the result of a final screening and glass processing of Mature Compost.

"Compost Product Revenues" shall mean the gross revenues derived from the sale of Compost Product.

"Composted Waste Product" means material that results from the controlled decomposition of Municipal Solid Waste, municipal sewage sludges or residues, or yard debris, grass clippings, and other similar wastes into a useable compost or humus-like product for soil enhancement, ground cover or other horticultural or agricultural uses by allowing for a Thermophilic and Aerobic Composting of the material. Composted Waste Product does not include: (1) mixtures or blends containing other waste material or chemical additives, or (2) products produced from by-products of the forest industry including composted barks or sawdust.

"Construction Period" shall mean the period beginning on the Commencement Date and ending on the Commercial Operation Date.

"Construction Period Insurance" means the Facility insurance coverage maintained by Contractor from the Commencement Date until the Commercial Operation Date with generally recognized, financially responsible insurers reasonably acceptable to Metro and qualified and licensed to insure risks in the State of Oregon.

"Construction Schedule" shall mean the overall schedule for the acquisition, construction, installation and Performance Testing of the Facility required to be developed by the Contractor, submitted to Metro and periodically updated as provided in Section 6.3 hereof.

"Consulting Engineer" shall mean a nationally recognized consulting engineer or firm knowledgeable in the design, construction, acceptance, operation, and maintenance of solid

waste disposal and resource recovery facilities, selected by Metro for the purpose of the feasibility report to be used in connection with the marketing of the Bonds, and monitoring on behalf of Metro the construction of the Facility, Performance Testing and the operations of the Facility.

"Consulting Engineer's Report" means the report detailing the Consulting Engineer's findings regarding the Performance Test of the facility as provided for in Section 7.7.

"Consumer Price Index" or "CPI" shall mean the Consumer Price Index for all Urban Consumers for the Portland, Oregon, Standard Metropolitan Statistical Area (1982-1984 = 100), as published from time to time by the United States Department of Labor, Bureau of Labor Statistics, or any other appropriate index as may be mutually agreed upon by the parties.

"Contract Year" shall mean for each Contract Year other than the first, the Annual Billing Period. The first Contract Year shall commence on the Commercial Operation Date and shall end on the thirtieth (30th) Day of June following the Commercial Operation Date if the Commercial Operation Date occurs on or between July 1 through December 31. Otherwise the first Contract Year shall commence on the Commercial Operation Date and shall end on last day of the second Annual Billing Period.

"Contractor" shall mean Riedel Oregon Compost Company, Inc., a subsidiary of Riedel Environmental Technologies, Inc., an Oregon corporation, and, to the extent permitted by the express terms of this Agreement, its successors and assigns.

"Contractor Event of Default" shall mean the occurrence of any one or more of the events described in Section 15.1 hereof.

"Contractor Fault" shall mean any occurrence or event of any nature whatsoever other than an Uncontrollable Circumstance or Metro Fault.

"Cost Substantiation" shall mean:

(a) with respect to any cost incurred by the Contractor for which Cost Substantiation is required by this Agreement for the purpose of the Financing or any increases in the Tip Fee, delivery to Metro of a certificate signed by the principal engineering officer and the principal financial officer of the Contractor setting forth the amount of such cost and the reason why such costs is properly chargeable to Metro, and stating that such cost is an arm's length and competitive price for the service or materials supplied; and

(b) with respect to any cost incurred by Metro for which Cost Substantiation is required by this Agreement (other than any

cost described in (a) of this definition), delivery to the Contractor of a certificate signed by the Consulting Engineer and the Executive Officer of Metro or his/her designee, setting forth the amount of such cost and the reason why such cost is properly chargeable to the Contractor, and stating that such cost is an arm's length and competitive price for the service or materials supplied;

provided that, with respect to either (a) and (b) above, any direct cost or expense of overhead or administration need not be substantiated by inclusion in the required certificate but a written statement that such cost or expense is to be allocated in accordance with the standard practice of the Contractor or Metro, as the case may be, pursuant to standard accounting principles without exception; and

provided further that if the Party receiving Cost Substantiation requests, the Party providing Cost Substantiation will provide copies of such additional back-up documentation as may be available to reasonably demonstrate the incurrence of the cost as to which Cost Substantiation is required for the purposes of the Cost Substantiation described in (a) above.

"Credit Enhancement" shall mean one or more letters of credit, lines of credit, municipal bond insurance policies, surety bonds or other similar credit enhancement devices issued to or in favor of the Trustee as security for the payment when due of the principal of and interest on the Bonds of a particular series, which credit enhancement device: (i) shall be in form and substance, and shall be obtained for such price, as shall be reasonable satisfactory to Metro; (ii) shall have an initial term of not less than five years from the date of issuance thereof; and (iii) be issued by such Credit Provider and have such other terms and conditions as will result in the Bonds secured thereby being assigned a long-term rating of "A" or higher by Moody's Investors Service, Inc. or Standard & Poor's Corporation.

"Credit Provider" shall mean Credit Suisse, a bank organized and existing under the laws of Switzerland, acting through its New York branch ("Credit Suisse"), as issuer of the Credit Enhancement, and any assignees thereof or participants therewith under the Credit Enhancement or any other issuer or issuers of the Credit Enhancement.

"Credit Provider's Engineer" shall mean the engineer or engineers so designated by the Credit Provider.

"DANO Drums" means the horizontal rotating vessels of proprietary design which perform initial processing of Acceptable Waste as part of the Composting process.

"DANO Technology" shall mean the technology utilized for Processing waste into Compost described in Exhibit F hereto.

"Day" means a 24-hour period from 12:00 midnight on one (1) calendar day until the same time on the following day.

"Debt Service" for any given period of time shall mean all amounts of: (i) interest accruing on the outstanding Bonds (including Additional Bonds if any) during such period; and (ii) if any portion of the period in question falls within the twelve month period preceding a Principal Payment Date, an amount equal to the principal on all outstanding Bonds coming due on such Principal Payment Date (whether by maturity, mandatory redemption or otherwise) multiplied by a fraction, the numerator of which shall be the number of days of the period in question which fall within such twelve-month period and the denominator of which shall be 365.

"Delivery Hours" shall mean from 7:00 a.m. to 6:00 p.m., each Monday through Saturday (except January 1, Memorial Day, July 4th, Labor Day, Thanksgiving and December 25th).

"Delivery Schedule" shall mean the schedule to be established by the Contractor and Metro subject to and in accordance with the provisions of Section 8.2 hereof pursuant to which Metro shall deliver, or cause to be delivered, to the Facility, Acceptable Waste from and after the Commercial Operation Date.

"DEQ" means the State of Oregon Department of Environmental Quality.

"Deration Payment" means the payment made by Contractor to pay principal and interest on a portion of the Bonds pursuant to Section 7.5(a) hereof.

"Detailed Plans" means working drawings required for the construction of the Facility.

"Direct Costs" shall mean, in connection with any cost or expense incurred by either Party for which Cost Substantiation is required pursuant to the terms of this Agreement, 1.10 multiplied by the sum of (i) the costs of the Party's payroll directly related to the performance or supervision of any obligation of a Party pursuant to the terms of this Agreement, consisting of compensation and fringe benefits, including vacation, sick leave, holidays, retirement, Workers' Compensation Insurance, federal and state unemployment taxes and all medical and health insurance benefits, plus (ii) the costs of materials, services, direct rental costs and supplies purchased by such Party, plus (iii) the costs of travel and subsistence as authorized by State law, plus (iv) the reasonable costs of any payments to subcontractors

necessary to and in connection with the performance of such obligation, plus (v) any other cost or expense incurred by the Contractor which is directly or normally associated with the task performed by the Contractor.

"Dispute" shall mean any controversy or difference between the Parties hereto arising out of or in connection with or concerning the meaning, application, performance or breach of the Agreement.

"Dispute Notice" shall mean a written notice given by one Party to the other pursuant to the provisions of Section 13.1(b) hereof or pursuant to any other provision of this Agreement which sets forth procedures for initiating the resolution of any Dispute, which notice shall: (i) state that the Party giving such notice desires to initiate the dispute resolution process provided for in Article XIII hereof; and (ii) briefly describe the matter to be submitted to such dispute resolution.

"Drawdown Schedule" means the schedule for payment of funds to Contractor set forth in Exhibit G hereto.

"Equity Contribution" shall mean that sum of money contributed by Contractor, in the manner contemplated by the Reimbursement Agreement, equal to 15 percent of the Facility Price.

"Executive Officer" shall mean the Executive Officer of Metro.

"Exercise Notice" means a notice delivered by Metro to the Contractor specifying Metro's exercise of its right of first refusal in accordance with Section 3.4.

"Extended Term" shall mean a period: (i) beginning on the Day following the last Day of the Initial Term or the Extended Term then in effect (as the case may be); and (ii) ending on the fifth anniversary of the date described in (i) of this sentence.

"Extension Offer" means a written offer by Metro to the Contractor to extend the Initial Term or any Extended Term as provided for in Section 3.2.

"Extension Period" means the period of 547 Days that follows the Scheduled Completion Date plus any extension thereof pursuant to a Time Extension as provided in Section 6.1.

"Facility" shall mean the improvements constructed at the Facility Site by the Contractor designed to accept and Process Acceptable Waste into Compost Product. For the purpose of Article III and Section 15.3 Facility includes the Facility Site.

"Facility Price" shall mean the sum of NINETEEN MILLION NINE HUNDRED FIFTEEN THOUSAND NINE HUNDRED AND 00/100 DOLLARS (\$19,915,900) multiplied by the Facility Price Adjustment Factor calculated as of the Commencement Date.

"Facility Price Adjustment Factor" means a fraction the numerator of which is the Chemical Engineering Plant Cost Index as of the date for which an adjustment is to be made and the denominator of which is such index as of July 1, 1988, where the Chemical Engineering Plant Cost Index means the index published by Chemical Engineering News (McGraw-Hill) or such other index as may be agreed to by the parties if that index is no longer available.

"Facility Site" shall mean the real property and all appurtenances thereto described in Exhibit H hereto.

"Facility Specifications" shall mean those specifications for the design, construction and operational capabilities of the Facility as set forth in Exhibit I hereto.

"Fair Market Value" shall mean the price that a willing buyer would pay to a willing seller of the Facility in an arm's-length transaction wherein neither the buyer nor the seller is acting under duress or compulsion, taking into account all factors relevant to the market value of a property such as the Facility.

"Fiscal Year" shall mean Metro's fiscal year as established from time to time by its Governing Body in accordance with Applicable Law, currently being each one year period commencing on July 1 of each year.

"Fresh Compost" means the material removed from the Aeration Slabs after approximately three weeks to be placed on Maturation Slabs for an additional three weeks of processing, such material being organic matter that has gone through the Thermophilic stage of Composting and has achieved sanitization and has undergone partial decomposition but has not yet been stabilized.

"Governing Body" shall mean: (i) when used with respect to Metro, the Metro Council; and (ii) when used with respect to the Contractor, RET or any other private corporation, the board of directors thereof.

"Guaranteed Annual Tonnage" shall mean 185,000 Tons for each Contract Year. If the initial or final Contract Year of a Term is other than a full year, the Guaranteed Annual Tonnage for such Contract Year shall be adjusted proportionately based on the number of days in such period.

"Guaranteed Daily Processing Capacity" shall mean 600 Tons of Acceptable Waste per Day.

"Hazardous Waste" means materials or residues which are classified as hazardous pursuant to federal or Oregon law.

"Independent Auditors" shall mean a firm of nationally recognized independent certified public accountants selected by Metro and reasonably acceptable to the Contractor.

"Independent Engineer" shall mean one of the independent engineers or firms listed on Exhibit J and selected by Metro.

"Initial Term" shall mean the term commencing on the date hereof and, unless sooner terminated as provided herein, expiring on the twentieth anniversary of the Commercial Operation Date.

"Intercreditor Agreement" means that certain Intercreditor Agreement respecting the Facility to be executed by and among Metro, the Trustee and Credit Suisse as the Credit Provider.

"Interim Debt" means debt, the proceeds of which are used to provide the Equity Contribution.

"Leachate" means liquid that has come into direct contact with solid waste and contains dissolved and/or suspended contaminants as a result of such contact, which liquid is also known as the liquid generated from composting piles.

"Loan Agreement" shall mean the loan agreement or loan agreements to be entered into between the Contractor and Metro pursuant to which Metro agrees to loan the proceeds of a particular series of Bonds to the Contractor for the purpose of providing funds to finance a portion of the costs of acquiring, constructing and installing the Facility.

"Manufacturer's Warranties" shall mean any and all warranties, express or implied, given or made by a manufacturer and/or seller or any component of the Facility, or a licensor of any technology or process used in the operation or maintenance of the Facility, relating to the performance, merchantability, fitness for a particular purpose, useful life, mean time between failure or otherwise relating to the usefulness or efficacy of such component or technology.

"Maturation Slab" means beds where Fresh Compost is stabilized into Mature Compost.

"Mature Compost" means the stabilized organic material removed from Maturation Slabs to be processed into a final Compost Product.

"Maximum Daily Volume" shall mean the delivery of 800 Tons of Acceptable Waste.

"Maximum Residue Guarantee" shall mean an amount of Residue which does not exceed thirty-five percent (35%) per Wet Ton of Acceptable Waste delivered.

"Metro" shall mean the Metropolitan Service District, Portland, Oregon, a municipal corporation, political subdivision and public body, corporate and politic, organized and existing under the laws of the State of Oregon, and its successors and, to the extent expressly permitted by the terms of this Agreement or otherwise required by law (whether now existing or hereinafter enacted), its assigns.

"Metro Event of Default" shall mean the occurrence of any one or more of the events described in Section 15.2 hereof.

"Metro Fault" shall mean: (a) any act or omission by Metro, including a modification or improvement to the Facility initiated, requested or caused by Metro, that results in or significantly contributes to a cost increase, delay, failure to meet Performance Standards or other adverse event, and (b) any Metro Event of Default.

"Midpoint Month" for a particular Annual Billing Period shall mean: (i) with respect to an Annual Billing Period of twelve (12) months, the sixth (6th) month of such Annual Billing Period; and (ii) for an Annual Billing Period of less than twelve (12) months, the month containing the Day that falls one-half way through such Annual Billing Period.

"Minimum Annual Throughput Guarantee" shall mean 185,000 Tons of Acceptable Waste per year.

"Monthly Work Schedule" shall mean the updated work schedules to be provided by the contractor to Metro on a monthly basis during the Construction Period pursuant to and meeting the requirements of Section 6.3 hereof.

"Municipal Solid Waste" shall mean a heterogeneous mixture of residential and commercial waste.

"Notice to Proceed" shall mean the written notice given by Metro to the Contractor pursuant to and in accordance with the provisions of Section 6.1 hereof authorizing the Contractor to commence the acquisition, construction and installation of the Facility.

"Official Certificate" shall mean a written certificate delivered by one Party to the other as required or permitted under this Agreement representing, warranting and certifying the

matters required or permitted to be addressed therein and signed by the delivering Party's Authorized Representative.

"Operation and Maintenance Charge" shall mean \$2,977,320, as adjusted and as more fully defined in Exhibit K hereto.

"Operation and Maintenance Manual" shall mean the manual which the Contractor is required to prepare in accordance with and pursuant to the provisions of Section 8.16(b) hereof.

"Pass Through Costs" shall mean the amount of certain costs and extraordinary expenses incurred during operation of the Facility, as more particularly specified in Exhibit K hereto.

"Payment/Performance Bond" shall mean the payment and performance bonds required to be provided by the Contractor during and in connection with the acquisition, construction and installation of the Facility pursuant to and in accordance with the requirements of Section 6.11 hereof.

"Performance Shakedown" shall mean that period of time preceding the Performance Test, during which the essential mechanical operation of the Facility systems will be tested and refined (as contrasted with the comprehensive testing of the Facility to determine whether the Facility meets the Throughput Performance Standards and the Residue Performance Standards).

"Performance Standards" shall mean those Facility performance specifications set forth in Exhibit L hereto.

"Performance Test" shall mean the testing of the Facility for its ability to Process Acceptable Waste, including the amounts of Recovered Materials, Compost Product and Residue generated during such Processing, which testing shall be conducted in accordance with the Performance Test Procedures.

"Performance Test Date" means the date(s) recorded in the Performance Test Log Book with respect to the particular Performance Test recorded.

"Performance Test Log Book" or **"Log Book"** means the written record(s) of all data and measurements taken during Performance Test as specified in Exhibit C hereto.

"Performance Test Procedures" shall mean those procedures for the conduct of the Performance Test as set forth in Exhibit C hereto.

"Person" means any natural person, partnership, joint venture, corporation or other entity or organization, public or private, and any unit of government or agency thereof.

"Plant Manager" shall mean the person or persons selected and trained by the Contractor to oversee and run the operations of the Facility during Processing, as contemplated by, in accordance with and meeting the requirements of Section 8.16(a) hereof.

"Prevailing Price" means the average current market price as determined by Metro's Director of Solid Waste for Composted Waste Products other than Compost Product produced at the Facility. In determining Prevailing Price, Metro shall not consider prices found by Metro to be the result of the sale of Composted Waste Product below cost or as the result of a liquidation or other similar proceeding.

"Prime Rate" shall mean that rate of interest publicly announced from time to time by the U. S. National Bank of Oregon, Main Branch, Portland, Oregon, as being its "prime rate" or "reference rate" of interest, as the same shall change from time to time. With respect to interest on any amounts required to be paid by one Party to the other Party hereunder, as to which interest is to be calculated by reference to the Prime Rate, any change in the Prime Rate during the period in which such interest is accruing shall be effective as of the date of such change.

"Process" and "Processing" shall mean the treatment of Acceptable Waste at the Facility commencing with the placement of Acceptable Waste on a conveyor belt where manual separation of recoverable materials occurs, followed by the use of a magnet to remove ferrous materials, the subsequent introduction of the remaining waste into the DANO Drum for a period of at least six (6) hours while the Drum rotates and water is added, the separation of the output of the DANO Drum into Residue and a Compostable Fraction, the placement of the Compostable Fraction on the Aeration Slabs for a period of approximately twenty-one (21) days to produce Fresh Compost, the placement of the Fresh Compost on the Maturation Slabs for an additional period of approximately twenty-one (21) days to produce Mature Compost and a final screening of the Mature Compost to produce Compost Product.

"Processing Capacity" shall mean the capacity (measured in Tons per day, Tons per week, Tons per month or Tons per year, as appropriate) of the Facility to Process Acceptable Waste.

"Process Water" means the water used to process Acceptable Waste into Compost Product.

"Progress Reports" shall mean the various reports described in Exhibit L hereto which the Contractor is required to prepare and deliver during the course of the construction of the Facility as provided in Section 6.3 hereof.

"Purchase Contract" shall mean a written agreement to sell the Facility in accordance with Section 3.4 hereof.

"Project Manager" shall mean the person selected by the Contractor to oversee the construction of the Facility.

"Purchase Offer" shall mean a bona fide, arm's-length written offer to purchase the Facility as provided in Section 3.4.

"Recoverable Materials" shall mean materials in the Acceptable Waste stream potentially available for recycling or resale.

"Recovered Materials" shall mean materials in the Acceptable Waste stream actually recovered for recycling or resale.

"Recovered Materials Performance Standards" shall mean those standards set forth in Exhibit L.

"Recovered Materials Revenues" shall mean the gross revenues derived from the sale of Recovered Materials.

"Recycling Center" means the area within the Facility where the public can drop off source-separated materials.

"Reference Waste Analysis" shall mean the December 1987 study prepared by SCS Engineers for Metro entitled "Waste Stream Composition Study."

"Reference Waste Composition" shall mean the composition of the waste set forth below as determined pursuant to the Reference Waste Analysis:

Waste Composition:	Percent:
Paper	34.8
Yard Debris	9.9
Wood	8.0
Food Waste	8.8
Diapers	1.5
Miscellaneous Organics	6.7
Textiles	3.8
Fines	2.0
Plastics	7.8
Aluminum	0.9
Miscellaneous Organics	5.5
Ferrous Metals	6.0
Nonferrous Metals	0.2
Glass (recyclable)	3.6
Others	0.5
TOTAL	100.0
Moisture Content	28.4

"Reimbursement Agreement" means that certain credit and reimbursement agreement to be executed by and between Contractor and Credit Suisse as Credit Provider, including without limitations any deed of trust, security agreement, fixture filing or any other security document executed in connection therewith, pursuant to which Credit Suisse agrees to issue the Credit Enhancement.

"Rejected Waste" shall mean Acceptable Waste delivered or sought to be delivered to the Facility which is not accepted or not Processed for the reasons set forth in Section 8.2(d).

"Required Insurance" shall mean the various types of insurance coverage described in Exhibit M hereto which the Contractor is required to obtain and maintain pursuant to and in accordance with Article II hereof, with each such type of insurance being in form satisfactory to Metro.

"Required Permits" shall mean all permits, orders, licenses and approvals of any governmental unit or agency which, under Applicable Law, are required to be obtained in connection with the acquisition, construction, installation and operation of the Facility and the sale or other distribution of Compost Product or Recovered Materials, including without limitation those described in Exhibit N hereto.

"Requisition Certificate" shall mean a certificate prepared by the Contractor, and meeting the applicable requirements of the Intercreditor Agreement, requesting and directing the Trustee to disburse moneys on deposit in the Construction Fund for the purpose of paying the costs of acquiring, constructing and installing the Facility.

"Reserve" shall mean any reserve fund established under any Bond Document for the purpose of paying when due Debt Service on the related financing in the event other moneys are not available for such purpose.

"Residue" shall mean residual material(s) remaining after the Processing of Acceptable Waste and designated for disposal in a landfill or alternate disposal site or any By-Pass Waste that is designated by Metro for disposal in the same manner as such residual materials; provided however that Residue does not include Rejected Waste.

"RET" shall mean Riedel Environmental Technologies, Inc., an Oregon corporation and, to the extent expressly permitted by this Agreement, its successors and assigns.

"Scheduled Completion Date" shall mean the later of (i) the date occurring 593 days following the Commencement Date, or (ii) the date occurring after the date set forth in clause (i) as the

same may be extended from time to time as provided in this Agreement, by any Time Extension.

"Scheduled Maintenance" shall mean those periods of time when the Facility has a planned partial or full shutdown of Processing of Acceptable Waste as provided in Section 8.11(a) hereof.

"Subcontractor(s)" shall mean any Person with whom Contractor contracts for the purpose of having such Person provide labor, materials or services for the construction or operation of the Facility.

"Technical Dispute" shall mean a dispute regarding the conformity of the Facility or its performance to the Facility Specifications or Performance Standards set forth herein, which is capable of prompt resolution by the Independent Engineer based on an examination or inspection of the Facility, the relevant standards and specifications, and relevant data concerning performance.

"Term" shall mean: (i) the Initial Term; and (ii) each Extended Term.

"Term Loan" shall mean the loan extended by the Credit Provider in the event of termination of the Credit Enhancement as more particularly defined in the Reimbursement Agreement.

"Thermophilic" means the stage of Composting where a series of micro-organisms develops over a period of time, providing elevated temperatures in the composting pile.

"Throughput" shall mean the Processing of Acceptable Waste by the Facility.

"Throughput Performance Standard" shall mean the standard Throughput of Acceptable Waste as specified in Exhibit L hereto.

"Time Extension" shall mean an extension of time of the Scheduled Completion Date or the Extension Period due to Metro Fault, or Uncontrollable Circumstances as provided in Section 6.1(e).

"Tip Fee" shall mean the payments required to be made by Metro to the Contractor in consideration of the Processing of Acceptable Waste, which payments are to be made in the amounts and at the times and subject to adjustment in the manner provided in Exhibit K hereof.

"Ton" means 2,000 pounds.

"TPY" means Tons per year.

"Trustee" shall mean the Person appointed to act as trustee with respect to the Bonds.

"Unacceptable Waste" shall mean:

- (i) Hazardous Waste;
- (ii) Radioactive waste or materials;
- (iii) Masonry, brick, concrete, stone, or any other non-combustible industrial, construction or demolition waste, except as Contractor may elect to accept;
- (iv) All wastes requiring special handling to comply with applicable federal, state or local law regarding (A) pathological, infectious, or explosive materials; (B) oil sludge; (C) cesspool or human waste; and (D) dead animals or animal remains or waste;
- (v) Any item of waste exceeding four (4) feet in any one dimension or exceeding one hundred (100) pounds in weight;
- (vi) Any item of waste either smoldering or on fire or at its kindling point or in the process of initiating combustion;
- (vii) Sewage sludge, septic tank and cesspool pumpings or other sludge from air or water pollution control facilities or water supply treatment facilities;
- (viii) Tires, plastics, or leather in quantities in excess of those normally collected from residential units except as Contractor may elect to accept;
- (ix) Any item posing a reasonable likelihood of damaging the Project, or the processing of which would be likely to impose a threat to health or safety in violation of any judicial decision, or order, or action of any federal, state or local government or any agency thereof, or any other regulatory authority or applicable law or regulation;
- (x) White Goods and other discarded home and industrial appliances; and

- (xi) Any other wastes which Metro and the Contractor may at any time agree in writing to designate as "Unacceptable Waste."

"Uncontrollable Circumstance" shall mean any act, event or condition described in clauses (a) through (h) of this definition which has a material adverse effect on the ability of any Party to obtain the benefits of its rights or to perform its obligations under this Agreement, or that materially increases the cost to such Party to obtain the benefits of such right or to perform such obligations, but only if such act, event or condition and its effect: (i) are beyond the reasonable control of the Party relying thereon (or any third party for whom the Party relying thereon is directly responsible) as justification for not performing any obligation or complying with any condition required of such Party under this Agreement; and (ii) could not have been reasonably anticipated and avoided by the Party relying thereon:

(a) An Act of God;

(b) Any of the following, whether or not an Act of God: landslide, lightning, fire, explosion, hurricane, tornado, very high wind, blizzard, earthquake, ice storm, volcanic eruption, drought, flood;

(c) Acts of a public enemy, war (whether or not declared) or governmental intervention resulting therefrom, blockade, embargo, insurrection, riot or civil disturbance;

(d) The failure to issue or renew, or the suspension, termination, interruption or denial of, any permit, license, consent, authorization or approval essential to the design, construction, startup, conduct of Acceptance Tests or operation of the Facility, but not including the license or consent of the licensor of the technology, if such act or event shall not be the result of the wilful or negligent action or inaction of the party relying thereon or of any third party for whom the party relying thereon is directly responsible, and if the party relying thereon, unless excused from so doing by the other party, shall be taking or have taken or shall cause to have caused to be taken, all reasonable actions in good faith to contest such action (it being understood that the contesting in good faith of any such action shall not constitute or be construed as a willful or negligent action of such party);

(e) A Change in Law;

(f) The failure of any appropriate federal, state, municipal, county or other public agency or authority or private utility having operational jurisdiction in the area in which the Facility is located, to provide and maintain utilities, services,

water and sewer lines and power transmission lines to the Facility Site, which are required for and essential to the construction, startup, shakedown, conducting of Performance Tests, maintenance, or operation of the Facility;

(g) Contamination of the Facility by Hazardous Waste but only if such contamination occurs as the result of the delivery of Hazardous Waste by others not under Contractors control and only if such contamination occurs prior to the time such Hazardous Waste enters the DANO Drum provided further that Section 8.9 hereof shall govern the respective obligations of Metro and the Contractor if such an event occurs; or

(h) Strikes, work stoppages or other labor disputes or disturbances (except any such occurrence caused by the failure of the affected party to bargain in good faith or to comply with a collective agreement or applicable labor laws).

"Waste Composition Test" shall mean the tests of the Acceptable Waste stream composition conducted from time to time by the Contractor pursuant to and in accordance with the provisions of Section 8.13(b) hereof, which tests shall each be conducted in accordance with the methods of waste stream analysis described in the Waste Survey Protocol.

"Waste Survey Protocol" shall mean the waste stream composition analysis methods described in "Municipal Solid Waste Survey Protocol", Section 7, US EPA Contract No. 68-03-2486, prepared by SCS Engineers.

"Week" means a period of seven consecutive Days commencing at 12:01 a.m. on Sunday.

"White Goods" means discarded kitchen and other large, enameled appliances.

"Yard Waste" or "Yard Debris" means plant clippings, prunings, grass clippings, leaves and other discarded materials from yards and gardens.

ARTICLE II. REPRESENTATIONS AND WARRANTIES

Section 2.1 Representations and Warranties of the Contractor

The Contractor hereby makes the following representations and warranties to and for the benefit of Metro:

(a) The Contractor is duly organized and validly existing as a corporation in good standing under the laws of the state of

Oregon, and it is duly qualified to do business in the State of Oregon.

(b) The Contractor has full legal right, power and authority to execute and deliver, and perform its obligations under, this Agreement, and has duly authorized the execution and delivery of this Agreement by proper corporate action of its Governing Body. This Agreement has been duly executed and delivered by the Contractor in accordance with the authorization of its Governing Body and constitutes a legal, valid and binding obligation of the Contractor enforceable against the Contractor in accordance with its terms.

(c) Neither the execution or delivery by the Contractor of this Agreement, the performance by the Contractor of its obligations hereunder, nor the fulfillment by the Contractor of the terms and conditions hereof: (i) conflicts with, violates or results in a breach of any Applicable Law; (ii) conflicts with, violates or results in a breach of any term or condition of any judgment, order or decree of any court, administrative agency or other governmental authority, or any agreement or instrument, to which the Contractor is a party or by which the Contractor or any of its properties or assets are bound, or constitutes a default thereunder; or (iii) will result in the creation or imposition of any lien, charge or encumbrance of any nature whatsoever upon any of the properties or assets of the Contractor, except as expressly contemplated by the Bond Documents.

(d) No approval, authorization, license, permit, order or consent of, or declaration, registration or filing with, any governmental or administrative authority, commission, board, agency or instrumentality is required for the valid execution and delivery of this Agreement by the Contractor, except such as have been duly obtained or made.

(e) There is no action, suit, proceeding or, to the best of the Contractor's knowledge, investigation, at law or in equity, before or by any court or governmental authority, commission, board, agency or instrumentality pending or, to the best of the Contractor's knowledge, threatened, against the Contractor, wherein an unfavorable decision, ruling or finding, in any single case or in the aggregate, would materially adversely affect the performance by the Contractor of its obligations hereunder or in connection with the transactions contemplated hereby, or which, in any way, would adversely affect the validity or enforceability of this Agreement or any other agreement or instrument entered into by the Contractor in connection with the transactions contemplated hereby.

(f) The Contractor holds, or is expressly licensed to use, all patent rights, licenses and franchises necessary or

appropriate to construct, operate and maintain the Facility pursuant to and in accordance with the terms of this Agreement.

(g) There has been no material adverse change in the Contractor's financial condition since June 29, 1988.

Section 2.2 Representations and Warranties of Metro

Metro hereby makes the following representations and warranties to and for the benefit of the Contractor:

(a) Metro is a municipal corporation, political subdivision and public body, corporate and politic, of the State of Oregon duly organized and validly existing under the Constitution and laws of the State of Oregon, with full legal right, power and authority to enter into and perform its obligations under this Agreement.

(b) Metro has duly authorized the execution and delivery of this Agreement and this Agreement has been duly executed and delivered by it and constitutes a legal, valid and binding obligation of Metro, enforceable against Metro in accordance with its terms.

(c) Neither the execution and delivery by Metro of this Agreement, Metro's performance of its obligations hereunder nor its fulfillment of the terms or conditions hereof: (i) conflicts with, violates or results in a breach of any Applicable Law; (ii) conflicts with, violates or results in a breach of any term or condition of any judgment, order or decree of any court, administrative agency or other governmental authority, or any agreement or instrument, to which Metro is a party or by which Metro or any of its properties or assets are bound, or constitutes a default thereunder.

(d) No approval, authorization, license, permit, order or consent of, or declaration, registration or filing with, any governmental or administrative authority, commission, board, agency or instrumentality is required for the valid execution and delivery by Metro of this Agreement except those that have been duly obtained or made.

(e) There is no action, suit, proceeding or, to the best of Metro's knowledge, investigation, at law or in equity, before or by any court or governmental or administrative authority, commission, board, agency or instrumentality pending or, to the best of Metro's knowledge, threatened, against Metro, wherein an unfavorable decision, ruling or finding, in any single case or in the aggregate, would materially adversely affect the performance of Metro's obligations hereunder or in connection with the other transactions contemplated hereby or which, in any way, would adversely affect the validity or enforceability of this Agreement

or any agreement or instrument entered into by Metro in connection with the transactions contemplated hereby.

ARTICLE III. TERM; OPTION TO RENEW; SALE OF FACILITY; SUBCONTRACTS

Section 3.1 Initial Term of the Agreement

The Initial Term of this Agreement shall commence on the date hereof and, unless sooner terminated as provided herein, shall expire on the twentieth (20th) anniversary of the Commercial Operation Date.

Section 3.2 Option to Renew

(a) This Agreement may be extended for a maximum of four (4) five-year Extended Terms, subject to the terms of this Section 3.2. During the final year of the Initial Term or any Extended Term, the Parties shall determine whether or not to extend the Agreement for an Extended Term, as set forth below.

(b) Metro's Option to Renew. If Metro determines to renew the Agreement after the expiration of the Initial Term (or after the expiration of the first, second or third Extended Term, as the case may be), Metro, at least two hundred seventy (270) days prior to the expiration of the Term then in effect, shall provide the Contractor with an Extension Offer. Contractor shall accept or reject the Extension Offer within thirty (30) days of Contractor's receipt thereof, by delivering to Metro a written notice of acceptance or rejection. Contractor's failure to respond timely to the Extension Offer shall be deemed an acceptance thereof.

(c) Terms and Conditions Upon Election to Renew. If the parties mutually agree to renew the Agreement, all terms and conditions of this Agreement shall remain in effect, except that the parties shall engage in good faith negotiations to determine the Tip Fee during the Extended Term. In the event the parties are not able to reach an agreement within one hundred eighty (180) days prior to the Expiration of the Term then in effect regarding the Tip Fee, the matter shall be submitted to arbitration pursuant to Article XIII of this Agreement. In the event the Tip Fee is referred to arbitration the decision of the arbitrators shall be rendered no later than sixty (60) days prior to the end of the Term then in effect. After the decision of the arbitrators is made each party may reject the determination by giving written notice thereof no later than thirty (30) days prior to the end of the Term then in effect. If Metro shall reject the determination of the Arbitrators then the provisions of Section 3.2(e) and Section 3.5 shall apply. If Contractor

shall reject the determination of the Tip Fee then Section 3.2(d) shall apply.

If the arbitrators fail to render a decision within the time provided then the Term then in effect will be extended by an amount of time equal to the delay in rendering the decision but such extension shall not exceed ninety (90) days.

(d) In the event Contractor rejects an Extension Offer from Metro, Metro may exercise its option to purchase according to the procedures set out in Section 3.5 of this Article III.

(e) Election by Metro to Terminate Agreement. If Metro does not timely deliver an Extension Offer at least two hundred seventy (270) days prior to the expiration of the Initial Term or the first through third Extended Terms, then the following shall apply:

- (i) Metro shall forfeit (A) all rights to extend this Agreement for additional Terms pursuant to this Section 3.2 and (B) all rights of first refusal under Section 3.3.
- (ii) This Agreement shall terminate at the end of the then-current Term.
- (iii) Metro may exercise its right to purchase the Facility pursuant to Section 3.5.

(f) No Implied Agreement to Extend. The giving or acceptance of any Extension Offer by either Party shall impose no obligation on either Party to give or accept any future Extension Offer.

Section 3.3 Request by Contractor to Sell the Facility

(a) Subsections 3.3(b), 3.3(c) and 3.3(d) shall apply in the event Contractor enters into any Purchase Contract or solicits or receives a Purchase Offer or otherwise enters into any transaction by which beneficial ownership of the Facility, a controlling interest in the Contractor or a controlling interest in any subsidiary of RET which possesses a controlling interest in Contractor other than RET is transferred to any entity that is not a subsidiary of RET; provided that this subsection shall not be construed to include any transaction in which a controlling interest in RET or a parent of RET changes ownership. For the purpose of this section a controlling interest shall constitute the right to vote fifty percent (50%) or more of the voting rights held by stockholders of Contractor; and provided that Section 3.3 shall not apply to any sale of the Facility by the Credit Provider pursuant to Section 4.5(h).

(b) If at any time during the first seven (7) years of operation following the Commercial Operation Date, Contractor wishes to enter into a transaction described in Section 3.3(a) above, it shall provide Metro with a written request for approval of the proposed transaction and the identity of the purchaser. Metro shall have sole discretion to either approve or disapprove the Contractor's request to enter into the transaction. Metro shall reach its determination on whether to approve or disapprove the Contractor's request within ninety (90) days of receipt of notice of the intent to enter into the transaction. In the event Metro approves the requested transaction, the parties, including the purchaser, shall execute a novation of this Agreement. In the event Metro disapproves the Contractor's request to enter into the transaction, said disapproval shall be final. Failure of Metro to reach a determination within ninety (90) days shall constitute a disapproval of the transaction. In addition, Metro shall have either the right to purchase the Facility pursuant to the rights of first refusal granted in Section 3.4 if Contractor is seeking to sell only the Facility or the right to purchase the Facility at Fair Market Value pursuant to Section 3.5 if Contractor is seeking to enter into a transaction described in Section 3.3(a) above other than a sale of the Facility.

(c) If at any time subsequent to the first seven (7) years of operation following the Commercial Operation Date, Contractor wishes to solicit purchase offers or solicit offers to enter into any transaction described in Section 3.3(a) above, it shall provide Metro with a written request for approval of the proposed transaction and state the terms and conditions it is willing to accept. Metro shall in such event have either the right to purchase the Facility pursuant to the rights of first refusal granted in Section 3.4 if Contractor is seeking to sell only the Facility or the right to purchase the Facility at Fair Market Value pursuant to Section 3.5 if Contractor is seeking to enter into a transaction described in Section 3.3(a) above other than a sale of the Facility.

(d) If Contractor shall have provided Metro the notice provided for in Section 3.3(c) above, and if Metro shall have not exercised its right of first refusal pursuant to Section 3.4 below within the one hundred eighty (180) day time period provided for in Section 3.4, Contractor shall be free to seek buyers. If a written offer is received that Contractor desires to accept Contractor shall submit such offer to Metro. Metro shall have forty-five (45) days to exercise its right of first refusal pursuant to Section 3.4 or right to purchase pursuant to Section 3.5 as may be appropriate under the criteria established in Section 3.3(c) above. If Metro does not elect to exercise its rights pursuant to Section 3.4 or 3.5 Contractor may enter into the transaction providing Metro shall have approved of the transaction pursuant to Section 3.3(e) below.

(e) If at any time subsequent to the first seven (7) years of operation following the Commercial Operation date, Contractor wishes to enter into any transaction described in Section 3.3(a) above, such transaction in addition to being subject to Metro's exercise of its rights of first refusal or right to purchase as provided for in Section 3.3(c) and Section 3.3(d) above, shall also be subject to Metro's right to approve or disapprove the transaction. Metro shall within sixty (60) days of receipt of a request to enter into the transaction either approve or disapprove the request, provided such approval shall not be unreasonably withheld. In determining whether to approve a request by the Contractor to sell the Facility, Metro may take the following criteria into consideration:

- (i) whether the proposed purchaser is of sufficient size to perform the obligations required in the Agreement;
- (ii) whether the proposed purchaser has sufficient financial resources to fulfill the operational and financial guarantees specified in the Agreement;
- (iii) whether the proposed purchaser has sufficient favorable experience providing services similar to those required in the Agreement;
- (iv) the nature of any other commitments which the proposed purchaser may have in related solid waste disposal services either nationally or within the Metro service area.

(f) In the event a controlling interest in RET is transferred to another entity which is providing solid waste disposal services to Metro pursuant to an agreement or franchise agreement including but not limited to transfer station, solid waste resource recovery (waste-to-energy) facilities, landfill services, or similar services, then Contractor shall immediately give Metro notice of such transaction and Metro may within one hundred eighty (180) days of receipt of such notice exercise its right to purchase the Facility at fair market value pursuant to Section 3.5 notwithstanding that transfer of a controlling interest in RET may have occurred at a time other than at the end of the initial term or the end of any extended term hereof.

Section 3.4 Right of First Refusal

(a) Metro is hereby granted the right of first refusal to purchase the Facility, which right may be exercised in the circumstances and upon the terms and conditions set forth in Section 3.3 and in this Section 3.4.

(b) If, at any time during the Term or any Extended Term, the Contractor receives a Purchase Offer or Purchase Contract other than a Purchase Offer or Purchase Contract subject to Section 3.3(d) above, such Purchase Offer or Purchase Contract shall be in all respects subject to Metro's right of first refusal to purchase the Facility as hereinafter set forth, and the prospective purchaser of the Facility shall acknowledge in writing Metro's right of first refusal as set forth in this Section 3.4. Immediately upon receipt of any Purchase Offer which the Contractor desires to accept or the execution of any Purchase Contract, the Contractor shall give Metro written notice thereof accompanied by a duplicate original of such Purchase Offer or Purchase Contract.

(c) In the event the Contractor receives a Purchase Offer or enters into a Purchase Contract as aforesaid, Metro shall have the right, to be exercised within ninety (90) days after the receipt by Metro of the written notice thereof, to purchase the Facility on the same terms and conditions as are set forth in such Purchase Offer or Purchase Contract, which right shall be exercised by Metro delivering to the Contractor an Exercise Notice. Within thirty (30) days following the delivery of an Exercise Notice to the Contractor, Metro and the Contractor shall enter into a contract providing for the purchase of the Facility by Metro from the Contractor, and the sale of the Facility by the Contractor to Metro, on the same terms and conditions as are set forth in such Purchase Offer or Purchase Contract. Following the execution and delivery of such contract, Metro shall purchase the Facility from the Contractor, and the Contractor shall sell the Facility to Metro, in accordance with the terms and conditions of such contract.

(d) In the event that Metro does not exercise such right of first refusal within ninety (90) days after the receipt of notice by Metro, the Contractor subject to the conditions set forth in Section 3.3, may sell the Facility to the person, and only to the person, making such Purchase Offer or Purchase Contract for a price equal to or greater than the price established in the Purchase Offer or Purchase Contract on the terms and conditions, and only on the terms and conditions, set forth in such Purchase Offer or Purchase Contract. The Contractor's right to sell the Facility after a determination by Metro not to exercise its right of first refusal shall be valid for a period of one (1) year from the date of the Purchase Offer or Purchase Contract.

(e) Notwithstanding any failure of Metro to exercise such right of first refusal in connection with any particular Purchase Offer or Purchase Contract or any sale of the Facility to a third party following such failure by Metro to exercise such right, such right of first refusal shall be a continuing right of Metro as against all subsequent Contractors during the Term of this Agreement, it being the intent of this Section 3.4 that the right

of first refusal granted to Metro herein shall be a valid, binding and continuing right of Metro at all times during the Term regardless of who the Contractor may be and regardless of how many times during the Term the Facility may be sold from one Contractor to another or how many times Metro may have failed to exercise such right of first refusal.

(f) In connection with any such failure of Metro to exercise such right and the subsequent sale of the Facility by the Contractor, the selling Contractor shall cause to be included in all operative sale documents, instruments and agreements, Metro's right of first refusal as set forth in this Section 3.4.

(g) The right of first refusal granted to Metro under this Section 3.4 shall be specifically enforceable.

(h) The right of first refusal granted to Metro under this Section 3.4 shall not apply to any sale of the Facility by the Credit Provider pursuant to Section 4.5(h) except that subsections 3.4(e) and 3.4(f) shall be applicable.

Section 3.5 Metro's Option to Purchase the Facility at the End of A Term

(a) Metro is hereby granted an option to purchase the Facility at the end of the Initial Term or at the end of any Extended Term, which purchase option shall be exercised in the manner and at the price provided for in this Section 3.5.

(b) In order to exercise the purchase option provided for in this Section 3.5, Metro must give written notice thereof to the Contractor not less than one hundred eighty (180) days prior to the expiration of the Initial Term or the then current Extended Term, as the case may be. In the event Metro elects to exercise the purchase option granted under this Section 3.5, the Contractor shall sell the Facility to Metro, and Metro shall purchase the Facility from the Contractor, at the Fair Market Value thereof at the time of exercise of such option, and the Contractor and Metro shall enter into a contract providing for such sale and purchase, which sale and purchase shall be consummated not later than the last day of the Initial Term or the then current Extended Term, as the case may be. Provided that if the arbitrators fail to render a decision within the time provided then the Term then in effect will be extended by an amount of time equal to the delay in rendering the decision but such extension shall not exceed ninety (90) days.

(c) If, within thirty (30) days after Metro gives to the Contractor written notice of the exercise of such purchase option, Metro and the Contractor cannot mutually agree on the Fair Market Value of the Facility, either Party shall thereafter have the right to have such Fair Market Value determined pursuant

to an independent appraisal by giving written notice thereof to the other Party.

(d) The independent appraisal shall be determined according to the following process:

- (i) Upon either Party electing to have the Fair Market Value of the Facility determined pursuant to an independent appraisal, the Parties shall attempt in good faith to agree upon a single independent appraiser to make a written determination thereof. If the Parties so agree upon a single appraiser, such appraiser shall determine the Fair Market Value of the Facility.
- (ii) If, within fifteen (15) days after notice from one Party to the other electing to have the Fair Market Value of the Facility determined pursuant to an independent appraisal, the Parties cannot agree upon a single independent appraiser to determine such Fair Market Value, either Party may at any time thereafter give the other Party a written notice calling for the appointment of an appraisal panel. Said notice shall designate an individual to serve on the appraisal panel. Upon receipt of such notice, the recipient shall have ten (10) days in which to designate a disinterested independent appraiser selected by the recipient to serve on such appraisal panel.
- (iii) Upon the designation of the two appraisers, they shall designate a third appraiser within seven (7) days. If the two appraisers cannot so agree upon a third appraiser, each of them shall submit the name of two candidates to serve in such capacity and, in the presence of the Authorized Representatives of the Parties, the third appraiser shall be selected by lot from among the four candidates so submitted.
- (iv) Upon the selection of the third appraiser, each of the appraisers shall make a written determination of the Fair Market Value of the Facility within sixty (60) days of the selection of the third appraiser and shall submit such written determinations to the Parties.
- (vi) The Fair Market Value of the Facility shall be the average of the two closest determinations of Fair Market Value of the three appraisers.

(e) In the event the Fair Market Value of the Facility is determined pursuant to an independent appraisal as provided above, the Fair Market Value of the Facility shall be final, conclusive and binding upon the Parties.

(f) Notwithstanding any failure of Metro to exercise such purchase option at the end of the Initial Term or any Extended Term or any sale of the Facility to a third party as contemplated by Section 3.5 hereof, such purchase option shall be a continuing right of Metro as against all subsequent Contractors during the Term of this Agreement, it being the intent of this Section 3.5 that the purchase option granted to Metro herein shall be a valid, binding and continuing right of Metro at all times during the Term regardless of who the Contractors may be and regardless of how many times during the Term the Facility may be sold from one Contractor to another or how many times Metro may have failed to exercise such purchase option granted under Section 3.5 hereof. In connection with any failure of Metro to exercise the right of first refusal granted under Section 3.5 hereof and the subsequent sale of the Facility from one Contractor to another, the selling Contractor shall cause to be included in all operative sale documents, instruments and agreements, Metro's purchase option as set forth in this Section 3.5.

(g) The right to purchase granted to Metro under this Section 3.5 shall be specifically enforceable.

Section 3.6 Contractor Subcontracts and Assignment

(a) During the Initial Term of this Agreement, or during any Extended Term, Contractor shall have the right to request approval from Metro to subcontract all or part of Contractor's obligation to operate the Facility to a third party. Contractor's written request for approval of a proposed subcontract shall be forwarded to Metro no later than ninety (90) days prior to the date on which the proposed subcontract is to take effect. Metro reserves the right to approve a request for subcontracting of Facility operations by the Contractor, provided such approval shall not be unreasonably withheld.

(b) In no event shall the Contractor's subcontracting, or Metro's approval of Contractor's subcontracting of its obligations to operate the Facility, in any way relieve the Contractor of its responsibilities under this Agreement.

(c) Except as otherwise specifically authorized by this Agreement, Contractor shall not enter into any transaction which transfers any interest of Contractor in the Facility or any right or obligation of Contractor pursuant to the term and conditions of this Agreement.

ARTICLE IV.

FINANCING OF FACILITY

Section 4.1 Financing Structure

(a) Issuance of Bonds. Subject to fulfillment of the conditions precedent set forth in Section 4.1(b) hereof, Metro will issue the Bonds in one or more series in an aggregate principal amount which, together with or the Equity Contribution, will be equal to:

- (i) the Facility Price; and
- (ii) the costs incurred in connection with the issuance and sale of the Bonds including but not limited to Credit Enhancement fees; and
- (iii) interest due and payable on the Bonds during the Construction Period and for such additional period of time as may be mutually agreed upon between the Parties; and
- (iv) any reserves necessary or appropriate to be funded out of Bond proceeds; less
- (v) estimated investment earnings on the unexpended Bond proceeds during the Construction Period (but only to the extent such estimated investment earnings are not required to be rebated to the United States of America pursuant to Section 148 of the Code).

(b) Conditions Precedent to Issuance of Bonds.

Notwithstanding anything expressed or implied herein to the contrary, Metro shall be under no obligation to issue the Bonds or any series thereof unless each of the following conditions shall have been satisfied:

- (i) the Contractor shall have provided Metro with a Credit Enhancement for each series of Bonds required to be issued in connection with the financing of the Facility, which Credit Enhancement shall be issued and delivered to the Trustee on the closing date for such series;
- (ii) the Contractor shall have duly authorized, executed and delivered all Bond Documents required to be executed and delivered thereby in connection with such series of Bonds and has provided or caused to be provided to Metro and Bond Counsel:
 - (A) all instruments, certificates, opinions of counsel and other materials as shall

reasonably be required by such persons in connection with the issuance and sale of the Bonds; and

- (B) information concerning the Facility and the costs thereof necessary or appropriate in connection with the opinions required to be rendered by Bond Counsel in connection with the issuance and sale of the Bonds, information concerning the Contractor, RET, the Credit Provider, the Facility and the Contractor's licenses, patents and/or technology or with respect to the Facility necessary or appropriate for inclusion in the official statement or official statements pertaining to the Bonds.
 - (C) Agreed to hold Metro harmless and indemnify Metro against any and all liability, actions, damages, claims, demands, judgment, losses, cost expenses and suits as required by the Bond Documents.
- (iii) No Change in Law shall have occurred after the date of this Agreement and on or before the Commencement Date that would make the execution or delivery by Metro or the Contractor of this Agreement, compliance by Metro or the Contractor with the terms and conditions of this Agreement or the consummation of the transactions contemplated hereby, invalid, unenforceable or a violation of Applicable Law;
 - (iv) All applicable environmental and other governmental permits, licenses, approvals, determinations, authorizations and requirements that are necessary for the acquisition, construction and installation of the Facility (other than construction and building permits obtainable as construction of the Facility progress) shall have been obtained by the Contractor and the Contractor shall have certified in writing to Metro that the same have been duly obtained, which certification shall be accompanied by copies of all such permits, licenses, approvals, determinations, authorizations and requirements;
 - (v) Metro shall have received certified copies of all policies or certificates of all Required Insurance necessary in connection with the acquisition, construction and installation of the Facility as

specified in Exhibit M hereto and as required by the Bond Documents;

- (vi) The Contractor shall have furnished Metro the Performance/Payment Bond in the form and amount set forth in Exhibit P hereto;
- (vii) The Contractor shall have completed the design pursuant to and in accordance with the provisions of Section 5.1 hereof;
- (viii) The Contractor shall have delivered to Metro a certificate of an Authorized Representative of the Contractor, dated as of the date the last of the foregoing conditions precedent have been fulfilled, to the effect that each of the representations of the Contractor set forth in Section 2.1 hereof are true and correct as if made on such date; and
- (ix) Metro shall have delivered to the Contractor a certificate of an Authorized Representative of Metro, dated as of the date the last of the foregoing conditions precedent have been fulfilled, to the effect that each of the representations of Metro set forth in Section 2.2 hereof are true and correct as if made on such date.
- (x) DANO A.G. Zurich Switzerland and all other relevant parties have given assurance that Metro can enforce the requirements of Section 15.3 providing for a limited license to Metro to utilize the technology and other rights necessary to operate the Facility in the event of a default by Contractor.
- (xi) The Contractor shall have delivered to Metro the guarantee by RET in the form set forth in Exhibit R.

The Contractor shall exercise good faith and due diligence in fulfilling the foregoing conditions precedent which are the obligation of the Contractor to fulfill. Metro shall exercise good faith and due diligence in fulfilling the foregoing conditions precedent which are the obligation of Metro to fulfill. Each party shall cooperate with the other Party in fulfilling the foregoing conditions precedent.

Notwithstanding anything expressed or implied herein to the contrary, neither Party shall be relieved of its obligations hereunder by the failure to fulfill any of the foregoing

conditions precedent to the extent that the fulfillment of such condition is within such Party's control.

(c) Nature and Term of Bonds. Each series of Bonds shall be issued as revenue bonds in accordance with the applicable provisions of Chapter 268 of Oregon Revised Statutes, as amended. The Bonds shall be secured by the following:

- (i) the Credit Enhancement;
- (ii) by a pledge of the loan repayments required to be made by the Contractor under the Loan Agreement;
- (iii) a pledge and assignment by the Contractor of its right to receive the Tip Fee payable by Metro under this Agreement;
- (iv) a mortgage on and security interest in the items of real and personal property comprising the Facility;
- (v) a pledge and assignment by the Contractor of any revenues generated by the sale of Compost Product;
- (vi) a pledge and assignment of any revenues generated from the sale of Recovered Materials; and
- (vii) such other properties, assets and revenues of the Contractor as shall be required by the Credit Provider as set forth in the Credit Enhancement or mutually agreed upon by the Parties and which, under Applicable Law, may be pledged as security for the payment of the Bonds.

Section 4.2 Equity Contribution of Contractor

In accordance with the Reimbursement Agreement, the Contractor agrees to provide an "Equity Contribution."

Section 4.3 Availability of Leveraged Lease

Notwithstanding the provisions of Article III hereof Metro will permit the Contractor to arrange for a leveraged lease of the Facility provided that all of the obligations of the Contractor under this Agreement pertaining to the operation of the Facility are retained by the Contractor. In furtherance of the foregoing, Contractor will be permitted, with the consent of Metro, to assign its appropriate rights and obligations under this Agreement to an appropriate entity, but no such assignment nor any leveraged leasing of the Facility shall relieve the Contractor from its liability for the performance of all of the

Contractor's obligations hereunder or result in any increased obligation of Metro without the consent of Metro.

Section 4.4 Loss of Tax Benefits

The Contractor shall not be entitled to reimbursement by Metro for the unavailability, loss (whether in whole or in part) or diminution in value of any anticipated tax benefits (whether federal, state or local) and/or tax planning contemplated by Contractor (whether federal, state or local) in connection with the acquisition, construction, installation, ownership or operation of the Facility or the financing thereof.

Section 4.5 Rights and Protection of Credit Provider

Notwithstanding anything which might be construed to the contrary herein:

(a) Pledge to Credit Provider. Contractor may, from time to time, without obtaining the consent of Metro, assign, hypothecate, mortgage, pledge or otherwise alienate Contractor's interest in this Agreement, or the Facility to one or more Credit Providers for purposes of financing the Facility. Contractor shall give notice to Metro of (i) its entering into (A) the Credit Enhancement or (B) a credit agreement evidencing any loan from a Credit Provider, and the total amount of funds available thereunder or of the nature of the transaction, (ii) any amendments to the Credit Enhancement or other credit agreements, and (iii) any such Credit Provider's address for notices hereunder; provided, however, that any failure by Contractor to give such notice shall not give rise to any right of Metro to terminate or otherwise alter any provision hereof, including but not limited to the rights and protection provided to Credit Providers in this Section 4.5. However, Metro shall have no obligation to provide any notice pursuant to subsection 4.5(g), 4.5(d) and 4.5(i) to any Credit Provider unless it shall have received actual notice of the identity of such Credit Providers.

(b) Consent of Credit Provider. Metro shall not accept any abandonment of this Agreement, the Bond Documents or the Facility, nor shall Metro consent to or authorize any material, amendment, waiver, Capital Improvement, modification or termination of or request for consent under this Agreement or the Bond Documents or any amendment or modification which affects the payment of Debt Service by either contractor or Metro, unless and until Contractor presents evidence to Metro that Contractor has obtained the prior written consent of each Credit Provider.

(c) Rights to Cure. In the event Metro shall give notice of default pursuant to Article XV hereof, any Credit Provider shall have the right, but not the obligation, at any time prior to termination of this Agreement or the Bond Documents, and

without payment of any penalty, to make any payments due hereunder, and to do any other act or thing required of Contractor hereunder, and to do any act or thing that may be necessary and proper to be done in the performance and observance of the terms hereof to prevent any default under or termination of this Agreement or the Bond Documents. All payments so made and all things so done and performed by any such Credit Provider shall be as effective to prevent any default under or termination of this Agreement or the Bond Documents, as they would have been if made, done and performed by Contractor instead of by such Credit Provider.

(d) Defaults. During any time when a Credit Provider is providing a Credit Enhancement, Contractor shall not be in default under this Agreement or the Bond Documents unless Contractor fails to perform the obligations required of it hereunder within the time periods set forth herein, and after receiving written notice thereof, fails to cure such default within ninety (90) days. If Contractor fails to cure a default within the time provided for herein, then, upon written notice from Metro to the Credit Providers, the Credit Providers shall have an additional ninety (90) days to cure such default; Provided, however, that if such default cannot reasonably be cured within such additional ninety (90) day period, then the Credit Providers shall have such additional time to cure the default as is reasonably necessary under the circumstances, so long as (A) the Credit Providers shall have fully cured within such ninety (90) day period any default in which payment and performance of any monetary or other obligations of Contractor that can be reasonably performed by the Credit Provider within such ninety (90) day period and shall thereafter continue faithfully to perform all such monetary and other obligations, and (B) the Credit Providers shall take all reasonable measures within its control (including steps to obtain control) to continue Contractor's operation of the Facility as contemplated herein. All rights of Metro to terminate this Agreement (or the Bond Documents), if any, as a result of the occurrence of any default by Contractor shall be subject to, and expressly conditioned upon, (i) the Credit Providers having received the notice specified above in this Section 4.5(d) except as provided in 4.5(a) above, and (ii) the Credit Providers having failed to remedy such default or acquire Contractor's interest in the Facility or to commence foreclosure or other appropriate proceedings in the nature thereof as set forth in and within the time specified by this Section 4.5(d). Provided further that nothing in this Section 4.5 shall have the effect of reducing the periods required for notice of default as available for cure of any default provided for Contractor and Metro in Article XV.

(e) Further Action. Any default by Contractor under this Agreement or the Bond Documents that cannot be remedied by any Credit Provider without possession of the Facility shall

nevertheless be deemed to have been remedied with respect to the Credit Provider if (A) within ninety (90) days after receiving written notice from Metro setting forth the nature of such default, or prior thereto, any Credit Provider shall have acquired Contractor's interest in the Facility, or shall have commenced foreclosure or other appropriate proceedings in the nature thereof, (B) such Credit Provider shall diligently prosecute any such proceedings to completion, (C) such Credit Provider shall have taken reasonable measures within its control (including steps to obtain control) to continue Contractor's operation of the Facility, as contemplated herein, (D) such Credit Provider shall have fully cured within such ninety (90) day period any default in the payment and performance of any monetary or other obligations of Contractor hereunder that do not require possession of the Facility, and shall thereafter continue to faithfully perform all such monetary and other obligations that do not require possession of the Facility, and (E) after gaining possession of the Facility, such Credit Provider shall perform all obligations of Contractor hereunder and which arise thereafter.

(f) Legal Process. If any Credit Provider is prohibited by any process or injunction issued by any court or by reason of any action of any court having jurisdiction over any bankruptcy, reorganization, insolvency or other debtor-relief proceeding involving Contractor from commencing or prosecuting foreclosure or other appropriate proceeding in the nature thereof, then the times specified in Sections 4.5(d) and 4.5(e) hereof for commencing or prosecuting such foreclosure or other proceedings shall be extended for the period of such prohibition; Provided, however, that such Credit Provider shall have fully cured any default in the payment or performance of any monetary or other obligations of Contractor under this Agreement or the Bond Documents that do not require possession of the Facility, and shall continue to pay and perform such monetary and other obligations as and when they fall due and shall have taken reasonable measures within its control (including steps to obtain control and to seek relief from such process or injunction where relief may be obtained through recognized legal procedures) to continue the operations of Contractor at the Facility as contemplated herein.

(g) Notices. Metro shall mail or deliver to the Credit Providers a duplicate copy of any and all written notices that Metro may from time to time give to or serve upon Contractor pursuant to the provisions of Section 12.3 hereof, and such copies shall be mailed or delivered to the Credit Providers at, or as near as possible to, the same time such notices are given to or served upon Contractor. No such notice by Metro to Contractor hereunder shall be deemed to have been given unless and until a copy thereof shall have been deposited as first class

mail addressed to the Credit Providers or delivered to the Credit Providers.

(h) Foreclosure. Foreclosure of any Credit Providers' lien or any sale thereunder, whether by judicial proceedings or otherwise, or any conveyance or transfer of the interest of Contractor in the Facility, under this Agreement or under the Bond Documents from Contractor to such Credit Provider through, or in lieu of, foreclosure or other appropriate proceedings in the nature thereof, shall not require the consent of Metro or constitute a breach of any provision of or a default under this Agreement or the Bond Documents, and upon such foreclosure, sale or conveyance Metro shall recognize such Credit Provider, or any other foreclosure sale purchaser, as Contractor hereunder, provided that the Credit Provider has cured or is taking all reasonable measures to cure any existing default of Contractor within the time period provided in subsection 4.5(d) above. In the event any Credit Provider assumes Contractor's position under this Agreement or the Bond Documents, by reason of such Credit Provider's foreclosure on its Credit Provider's lien, as provided herein, then such Credit Provider shall be personally liable for the obligations of Contractor under this Agreement or the Bond Documents only for any acts or omissions of such Credit Provider during the period of time that such Credit Provider remains in such position hereunder, and the Credit Provider shall have the right to assign any interest it may have in this Agreement, the Bond Documents or the Facility thereafter without any restriction otherwise imposed on it hereunder. Provided, however, that the assignee of such Credit Provider shall have expressly assumed all of the obligations of Contractor hereunder. Notwithstanding any other provision of this Agreement, in the event that any Credit Provider (A) performs any monetary or other obligation of Contractor under this Agreement or the Bond Documents, (B) acquires any portion of the right, title or interest in the Facility (C) continues Contractor's operations of the Facility and/or (D) becomes personally liable to Metro hereunder, then such Credit Provider's obligations and liability to Metro hereunder shall be limited by and to such Credit Provider's right, title and interest, if any, in the Facility and Metro shall have no recourse against such Credit Provider in excess of, and other than to proceed against, such right, title and interest. This limitation on the liability of the Credit Providers shall not in any way limit the Credit Providers obligation to make payments in respect of the Bonds pursuant to the terms of the Credit Enhancement.

(i) Notice of Default. Upon Metro's receipt of any notice in the nature of a notice of default with respect to any obligation of Metro secured by any lien upon the Facility, Metro shall promptly deliver a copy of such notice to Contractor and to each Credit Provider or successor-in-interest of which Metro has received notice. If and whenever Contractor, a Credit Provider

or a successor-in-interest shall deem it necessary or appropriate to do so in order to protect its rights under this Agreement or the Bond Documents, it may, at its option, pay and discharge any mortgage or other lien (including, without limitation, the lien of general or special property taxes or special assessments) attached to the Facility or any portion thereof, and in such event it shall be subrogated to all the rights of the mortgagee, beneficiary, owner or holder of such mortgage or other lien. If Contractor pays or discharges any such mortgage or other lien, then in addition to and cumulative with its rights of subrogation as hereinabove set forth, Contractor shall be entitled to apply to the payment or discharge of any such mortgage or other lien, or to the reimbursement to Contractor for any amount so paid or discharged by it, any sums accruing or payable by Contractor to Metro hereunder or under the Bond Documents.

(j) Cooperation With Lenders. Contractor and Metro shall cooperate by, from time to time, negotiating amendments hereto which any Credit Provider or proposed Credit Provider reasonably requests for the purpose of implementing the Credit Provider protective provisions contained in this Section 4.5 and affording any Credit Provider or proposed Credit Provider reasonable protection of its Credit Provider's lien in the event of a default by Contractor. Neither Metro nor Contractor shall have any obligation to agree to any amendment which would adversely affect their respective obligations to make payments or adversely impact their respective liabilities to each other or to the Credit Provider under this Agreement. Contractor and Metro each agree to execute and deliver (and to acknowledge if necessary for recording purposes) any document or instrument necessary to give effect to any such negotiated provision.

(k) Certificates. Either party hereto (the "Responding Party") shall at any time upon not less than ten (10) days' prior written notice from any other party hereto or from any Credit Provider (the "Requesting Party") execute, acknowledge and deliver to the Requesting Party a statement in writing (a) certifying, as applicable, that this Agreement and the Bond Documents are unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Agreement and the Bond Documents, as so modified, are in full force and effect) and the date to which any payments due thereunder are paid in advance, if any, and (b) acknowledging that there are not, to the Responding Party's knowledge, any uncured defaults hereunder on the part of the other party hereto, or specifying such defaults if any are claimed. Any such statements may be conclusively relied upon by any prospective purchaser or encumbrancer of the Facility or the other rights of Contractor under this Agreement or the Bond Documents. The failure of the Responding Party to deliver such statement within such time shall be conclusive upon such Responding Party that (i) this Agreement and the Bond Documents are in full force and

effect and has not been modified and (ii) there are no uncured defaults in the performance of the other party thereto.

(l) Bank Holidays. Notwithstanding the definition of Business Day contained in this Agreement, the Credit Provider shall not be required to take any action on any day that is a bank holiday pursuant to New York law nor shall the expiration of any time period directly affecting the Credit Provider occur on any such bank holiday.

(m) Miscellaneous. The provisions of Section 13.2 and Article XIV shall not apply to Credit Suisse but shall apply to any purchaser from Credit Suisse or to any purchaser at any foreclosure sale.

(n) Waiver of Jury Trial. Metro and Credit Suisse hereby knowingly, voluntarily, and intentionally waive any rights they may have to a trial by jury in respect of any litigation based hereon, or arising out of, under, or in connection with, this agreement. Such waiver is effective only in the event of litigation between Metro and Credit Suisse as adverse parties and shall not effect either Metro's or Credit Suisse's right to a trial by jury in any litigation with any third party including Contractor.

ARTICLE V. DESIGN OF FACILITY

Section 5.1 Facility Design

The Contractor shall have the responsibility for design of the Facility such that it conforms to the Performance Standards and the Facility Specifications. The Contractor shall perform all design work in accordance with established engineering principles and practices and all applicable code requirements.

(a) The Contractor shall be solely responsible for determining whether it is necessary to modify the Facility design to meet the Performance Standards and provisions of this Agreement. Upon a determination by the Contractor that the Facility design should be modified, Contractor shall provide Metro with written notice of the proposed modification. The notice shall include:

- (i) a detailed description of the problem which necessitates the proposed change;
- (ii) the anticipated result of the proposed change;

(iii) a statement certifying that the proposed change will not have an adverse impact on the ability of the Facility to meet the Performance Standards.

(b) The Contractor shall be fully responsible for any and all costs related to design modifications made pursuant to this section unless caused by Uncontrollable Circumstances or Metro Fault, in which event Metro shall bear the costs of such changes as provided in Section 6.16(b) and 6.16(c).

Section 5.2 Metro Review of Facility Design Plans

(a) The Contractor, at reasonably appropriate intervals during construction of the Facility, shall make available for review by Metro or its Consulting Engineer, all plans, drawings, specification, schedules and other materials related to the design and construction of the Facility.

(b) It is mutually understood by the Parties that Metro's review of the materials referenced in section (a) above shall not constitute a determination as to the sufficiency or adequacy or the design plans, specifications, or engineering or construction judgments made by the Contractor, nor shall the review act as a waiver of liability or relieve the Contractor of its obligations to design, construct, and operate the Facility in a manner which conforms to the Performance Standards.

ARTICLE VI. CONSTRUCTION OF FACILITY; FACILITY PRICE; METHOD OF PAYMENT

Section 6.1 Notice to Proceed; Scheduled Completion Date; Commencement Date

(a) Conditions Precedent to Issuance of Notice to Proceed. On the date upon which each of the following conditions precedent have been fulfilled, Metro shall issue the Notice to Proceed:

- (i) There shall have been issued by Metro pursuant to the Bond Documents one or more series of Bonds in the aggregate principal amount determined in accordance with Section 4.1(a) hereof.
- (ii) The Contractor shall have obtained financing of the Interim Debt or otherwise demonstrated to Metro that it has sufficient funds to make the required Equity Contribution.

The Contractor shall exercise good faith and due diligence in fulfilling the foregoing conditions precedent which are the obligation of the Contractor to fulfill. Metro shall exercise

good faith and due diligence in fulfilling the foregoing conditions precedent which are the obligation of Metro to fulfill. Each party shall cooperate with the other Party in fulfilling the foregoing conditions precedent.

Notwithstanding anything expressed or implied herein to the contrary, neither Party shall be relieved of its obligations hereunder by the failure to fulfill any of the foregoing conditions precedent to the extent that the fulfillment of such condition is within such Party's control.

(b) Termination of Agreement before Issuance of Bonds. Either Party may terminate this Agreement by giving thirty (30) days written notice if the date of issuance of the Bonds shall not have occurred by one (1) year from the effective date of this Agreement.

If this Agreement is terminated pursuant to this Section 6.1(b) and a Party has proceeded in good faith and with due diligence to fulfill the conditions precedent set forth in this Agreement to the issuance of the Bonds, such Party shall not be liable to the other Party for any costs, expenses, charges or fees incurred by such other Party in connection with or in any way related to this Agreement, the Facility or the Facility Site.

(c) Commencement. On the Commencement Date, the Contractor shall immediately commence the acquisition, construction and installation of the Facility.

(d) Contractor Responsible for Acquisition, Construction, Installation and Performance Test of Facility. The Contractor shall complete the acquisition, construction, installation and Performance Test of the Facility in accordance with the terms of this Agreement.

Neither approval by Metro of any disbursement, the failure to object to the Certificate of Completion, any payment by Metro to the Contractor under this Agreement, any use or occupancy of the Facility or any part thereof by Metro, any failure to do so, nor any correction of defective work by Metro, shall constitute an acceptance of any work which is not completed or accomplished in accord with the Agreement nor a waiver by Metro of any of the obligations or liabilities of the Contractor under this Agreement.

(e) Construction and Performance Test to be Completed on or before Scheduled Completion Date; Extension Period:

- (i) The Contractor hereby covenants and agrees to complete the acquisition, construction, installation and Performance Test of the Facility on or before the latter of either (a) the

Scheduled Completion Date as that date may be extended by any Time Extension, or (b) the last day of the Extension Period as that period may be extended by any Time Extension.

- (ii) If, at any time after the Commencement Date, Contractor, for any reason, determines that it will not be possible to complete the acquisition, construction, installation and Performance Test of the Facility on or before the Scheduled Completion Date, or if applicable, the last day of the Extension Period, the Contractor shall provide Metro with written notice specifying the reason or reasons therefor. In the event that the Contractor believes that the reason that the acquisition, construction, installation and Performance Test will not be completed on or before the Scheduled Completion Date or Extension Period is due to Metro Fault or Uncontrollable Circumstances, the notice required by this Section 6.1(e)(ii) may include a request for a Time Extension. In the event that the notice required by this Section 6.1(e)(ii) does not include a request for a Time Extension, Contractor shall be deemed to have waived any right to additional time for the event of Metro Fault or Uncontrollable Circumstance leading to the notice. The notice required by this Section 6.1(e)(ii) shall be served on Metro within ten (10) days of the start of the latter of either (a) the event of Metro Fault or Uncontrollable Circumstance, or (b) the date Contractor knew or reasonably should have known of the event of Metro Fault or Uncontrollable Circumstance which is the basis of the notice.
- (iii) Within ten (10) days of receipt of a request from the Contractor for a Time Extension pursuant to Section 6.1(e)(ii), Metro shall provide the Contractor with a written approval or disapproval of the request for a Time Extension. In the event that Metro disapproves the request on the grounds the delay was not caused by a Metro Fault or an Uncontrollable Circumstance, or the Contractor disagrees with the amount of Time Extension approved by Metro, the parties shall make a good faith effort to negotiate a mutually acceptable Time Extension. If the parties are not able to reach a mutually acceptable agreement regarding a requested Time Extension, the matter shall be submitted for resolution pursuant to Article XIII.

- (iv) If prior to the Scheduled completion Date, Metro approves a request for a Time Extension, or pursuant to Article XIII, a determination is made that the Contractor is entitled to a Time Extension, the Scheduled Completion Date shall be extended by the length of the Time Extension and Metro shall be responsible to pay Debt Service due during the period that the Time Extension extends the Scheduled Completion Date. If during the Extension Period, Metro approves a request for a Time Extension, or pursuant to Article XIII, a determination is made that the Contractor is entitled to a Time Extension, the Extension Period shall be extended by the length of the Time Extension.
- (v) If, at any time after the Commencement Date and prior to the Scheduled Completion Date (without regard to the Extension Period), the Contractor determines that it will not be possible to complete the acquisition, construction, installation and Performance Test of the Facility on or before the Scheduled Completion Date, the Contractor may notify Metro of its intent to enter into the Extension Period and shall specify the reason or reasons that the acquisition, construction, installation and Performance Test of the Facility will not be completed on or before the Scheduled Completion Date. The Contractor shall be allowed only one Extension Period.

Section 6.2 Facility Price

The Contractor agrees to acquire, construct and install the Facility and perform the Performance Test for the Facility Price.

Section 6.3 Provision of Construction Schedule; Construction Progress Reports

(a) No later than ten (10) days after issuance of the Notice to Proceed, Contractor shall provide Metro, the Credit Provider and the Credit Provider's Engineer with a detailed Construction Schedule based on the critical path method (CPM) or comparable scheduling methodology. At a minimum, the Construction Schedule shall identify the major work elements required to complete construction of the Facility and show the order of work, the anticipated start dates for all major work elements as well as the anticipated number of days required to complete each major work element. The Construction Schedule shall provide for the completion of all work by the Scheduled Completion Date.

(b) No later than the 25th day of each calendar month, the Contractor shall provide Metro, the Credit Provider and the Credit Provider's Engineer with written Progress Reports describing:

- (i) the percentages of each major work element completed up to and including the 20th day of the calendar month in which the report is being issued;
- (ii) any significant problems encountered in the scheduled work.

(c) In connection with the delivery of each Progress Report, the Contractor shall provide Metro, Credit Provider and the Credit Provider's Engineer with an updated Construction Schedule which reflects actual work progress and any adjustments to scheduled work activities identified in the original Work Schedule, and any adjustments to scheduled work activities due to any Time Extensions approved pursuant to Section 6.1(e).

(d) The Contractor acknowledges that Metro may retain the services of a Consulting Engineer to:

- (i) review and monitor engineering, equipment installation and construction progress;
- (ii) assist Metro in its review of Contractor requests for payment;
- (iii) review and advise Metro with respect to proposed changes to the Facility design or proposed Capital Improvements;
- (iv) review and advise Metro regarding the validity of any written notice from the Contractor that an Uncontrollable Circumstance event has occurred;
- (v) assist Metro in its review and approval of the Performance Test plan for the Facility;
- (vi) review the results of any Performance Test made in accordance with such plan; and
- (vii) advise Metro whether the results of any Performance Test demonstrate that the Facility meets the Performance Standards set forth in the Facility Specifications; and
- (viii) perform such other services and reviews related to this Agreement as Metro, in its sole discretion, may deem necessary or desirable.

(e) It is hereby understood and agreed to by the Parties that the Consulting Engineer may do and perform, for and on behalf of Metro, any and all functions and review such matters and render such advice to Metro as Metro may from time to time request regardless of whether or not the same are listed in section (d) above. The Contractor agrees to cooperate with all reasonable requests made by the Consulting Engineer in connection with the performance of such duties on behalf of Metro.

(f) In no event shall any monitoring or review activities as described in Section 6.4, by Metro or its Consulting Engineer, be construed as relieving the Contractor of any of its obligations, responsibilities or liabilities under this Agreement. The Contractor shall at all times remain solely responsible for performance of its obligations pursuant to the Agreement. Any and all monitoring or review activities undertaken by Metro or anyone acting on its behalf shall be at Metro's sole discretion, and the undertaking of such activities shall not constitute a basis for a claim by the Contractor for a Time Extension or additional compensation due to delay.

(g) The Contractor shall at all times remain fully responsible and liable to carry out and fulfill all of its obligations and duties under this Agreement. Neither the review nor comment upon by Metro or the Consulting Engineer, nor the failure of Metro or the Consulting Engineer to comment upon, Detailed Plans, the Construction Schedule or Facility Specifications, shall relieve the Contractor of any of its responsibilities under this Agreement. No review or comment by Metro or the Consulting Engineer shall constitute representation by Metro that the Detailed Plans, or the Construction Schedule or Facility Specifications are in accordance with the requirements of this Agreement or Applicable Law, or impose any liability upon Metro.

Section 6.4 The Consulting Engineer's Monitoring of Construction

(a) Maintenance of Facility Specifications and Detailed Plans at Facility Site; Review. During the course of the construction of the Facility, the Contractor shall:

- (i) maintain at the Facility Site for inspection by Metro a copy of the Facility Specifications and all Detailed Plans in good order and marked to show all changes made during construction; and
- (ii) review the design and construction of the Facility with Metro so that Metro may verify that the Detailed Plans do not materially deviate from the Facility Specifications.

The Contractor will not be obligated by this Section to delay any Work (including, but not limited to, procurement and construction activities) it has undertaken or plans to undertake pursuant to the terms and provisions of this Agreement; provided, however, that if the Contractor proceeds with any Work under this Agreement not identified in the most recent Construction Schedule without allowing Metro at least ten (10) prior Days notice consistent with the provisions of Section 5.1(a) for its Consulting Engineer to perform monitoring activities, then the Contractor proceeds with any such Work solely at its own risk and expense.

(b) Contractor to Cooperate with Consulting Engineer.

During the course of construction of the Facility, the Contractor shall fully cooperate with the Consulting Engineer so that the Consulting Engineer may monitor on behalf of Metro all aspects of the acquisition, construction and installation of the Facility. Metro and the Contractor agree to mutually review and, in good faith attempt to resolve, any disputes arising out of the Consulting Engineer's monitoring activities within fifteen (15) Days of the deliver by one Party to the other of a written statement describing such dispute. In the event any such dispute cannot be resolved within ten (10) days, the matter shall be submitted for dispute resolution pursuant to the provisions of Section 13.1 hereof.

Section 6.5 Required Permits and Royalties, Fees, Insurance Payment

The Contractor shall obtain and maintain all Required Permits necessary to fulfill its obligations under this Agreement, including without limitation those set forth in Exhibit N hereto, and shall pay all costs, royalties, fees, license payments, insurance and similar expenses required with respect to the Contractor's performance under this Agreement. To the extent permitted by Applicable Law, Metro shall provide the Contractor with any information or documents in its control that the Contractor reasonably requests in order to obtain or maintain the Required Permits. Metro agrees to use its reasonable efforts to assist the Contractor in obtaining and maintaining all Required Permits.

Section 6.6 Labor, Material and Equipment; Subcontractors

(a) The Contractor shall furnish directly, through RET, or Subcontractors all work, labor, materials, testing, supervision and equipment required for the performance of its obligations set forth in this Article VI.

(b) In selecting Subcontractors and in otherwise acquiring goods, materials and services for use in the construction of the Facility, the Contractor shall give preference to goods,

materials or services that have been manufactured or produced in the state of Oregon, if the price, fitness, availability and quality are otherwise equal, in the opinion of the Contractor, to the goods, materials and services that have been manufactured or produced outside the state of Oregon.

Section 6.7 The Facility Site

The Contractor shall be solely responsible for the preparation of the Facility Site for the acquisition, construction and installation of the Facility.

The Contractor acknowledges and agrees that with respect to subsurface conditions at the Facility Site encountered during construction of the Facility, no such condition shall be deemed to be an Uncontrollable Circumstance pursuant to this Agreement; except to the extent such subsurface condition is caused in whole or in part by an Uncontrollable Circumstance which occurs subsequent to the date of this Agreement, the subsurface condition may be deemed to be an Uncontrollable Circumstance pursuant to this Agreement.

The Contractor shall be responsible for the construction and maintenance of all roads within the Facility Site necessary to connect it to existing roads. The Contractor shall also be responsible for extending, expanding or renovating any existing utility lines within the Facility Site in order to meet the utility requirements for the performance by the Contractor of its obligations under this Agreement.

The Contractor shall be responsible for all security at the Facility Site during the term of this Agreement and shall maintain such protective measures at the Facility Site during the construction period and thereafter as shall meet appropriate safety standards in light of conditions at the Facility Site.

The Contractor shall erect on the Facility Site a sign satisfactory to Metro identifying the Facility.

Section 6.8 Construction Staff

The Contractor shall maintain an adequate staff which shall be responsible for all aspects of the design, construction, equipping, testing, and starting-up of the Facility in accord with this Agreement. Each individual on the staff shall have appropriate knowledge, experience and training in the type of work he or she is to perform. The full-time staff shall include the Project Manager who shall be present at the Facility Site during the construction of the Facility. The Contractor shall keep Metro informed of the identity of each person serving from time to time as the Project Manager, and the telephone number and

other means by which such person may be contacted at the Facility Site.

Section 6.9 Prevailing Wages

Contractor and Metro agree that ORS 279.348 to 279.363 are not applicable to this Agreement. However, if a determination is made that this Agreement is subject to the provisions of ORS 279.348 to 279.363, (1) such determination shall not constitute a change of law, (2) Contractor shall pay the existing prevailing rate of wage as so required, and as set forth in Exhibit O, and (3) this paragraph shall be construed as meeting the requirements of ORS 279.352.

Section 6.10 Liens and Encumbrances

The Contractor shall, at its expense:

- (i) discharge any valid liens of any sort that attach to the Facility or the Facility Site arising out of the activities of the Contractor or approved Subcontractors under this Agreement;
- (ii) discharge of record by bond or otherwise, any lien or encumbrance that may be filed against the Facility or the Facility Site by any Subcontractor; and
- (iii) indemnify Metro for any injury or expense, including reasonable attorneys' fees, incurred by Metro due to the filing or any such lien or the Contractor's failure to have such lien discharged.

Section 6.11 Performance/Payment Bonds

Prior to the commencement of the acquisition, construction and installation of the Facility, the Contractor shall supply Metro with Payment/Performance Bonds in the form and amount set forth in Exhibit P and otherwise in accordance with Oregon law. Metro may require additional Payment/Performance Bonds from time to time during construction as circumstances, including Uncontrollable Circumstances, may dictate.

Section 6.12 Notice of Required Capital Improvements

Prior to initiating a Capital Improvement Contractor shall provide Metro with a minimum of at least ten (10) days' written notice of the proposed Capital Improvement. The notice shall specify:

1. The reasons which necessitate implementation of the Capital Improvement;

2. The nature and extent of the required Capital Improvement;
3. The impact of implementation of the Capital Improvement on the Scheduled Completion Date if the Capital Improvement is required prior to the Commercial Operation Date, and the impact on continued operations if the Capital Improvement is required subsequent to the Commercial Operation Date;
4. A description and estimated cost of the required Capital Improvement;
5. The effect, if any, the Capital Improvement will have on the ability of the Facility to meet the Performance Standards.

Section 6.13 Review of Capital Improvements Proposed For Reasons Other Than Uncontrollable Circumstances or Metro Fault

(a) The Contractor, at any time, at no additional cost to Metro, may propose Capital Improvements for reasons other than Uncontrollable Circumstances or Metro Fault. Capital Improvements proposed by the Contractor pursuant to this section shall be deemed effective unless Metro, within fifteen (15) Business Days after receipt of written notice of the proposed Capital Improvement, gives written notice of an objection to the proposed Capital Improvement. Metro may object to the proposed Capital Improvement if:

- (i) Metro determines that the proposed Capital Improvement will adversely affect the ability of the Contractor to comply with the Performance Standards; or
- (ii) Metro determines that the proposed Capital Improvement will adversely affect the ability of the Contractor to complete the acquisition, construction, equipment installation and Performance Test of the Facility on or before the end of the Extension Period; or
- (iii) in the written opinion of Bond Counsel, the proposed Capital Improvement will adversely affect the federal tax-exempt status of the interest on any Bonds which were intended to be excludable for Federal income tax purposes from the gross incomes of the owners thereof.

(b) If Metro, for reasons other than those specified in Section 6.13(a)(iii), objects to the proposed Capital Improvement

pursuant to (a) above, either party may, within fifteen (15) Business Days after receipt of the objection, (A) prior to the Commercial Operation Date, refer the matter to the Credit Provider's Engineer for binding resolution, and (B) on or after the Commercial Operation Date, refer the matter to the Independent Engineer for binding resolution.

(c) Nothing in this section shall prevent or delay the Contractor from, at its own risk, implementing a proposed Capital Improvement as described in this section prior to a final determination by the Credit Provider's Engineer. However, under no circumstance shall Contractor proceed with a Capital Improvement if Contractor has notice that Bond Counsel has advised that the Capital Improvement should not be made for the reasons stated in (a)iii above.

Section 6.14 Review of Proposed Capital Improvements Due to Uncontrollable Circumstances or Metro Fault

(a) In the event an Uncontrollable Circumstance or Metro Fault requires implementation of a Capital Improvement either before or after the Scheduled Completion Date, the Contractor, as soon as practicable after the occurrence of the Uncontrollable Circumstance event or Metro Fault, shall provide Metro with written notice as specified in Section 6.12. In addition, Contractor shall separately request a Time Extension pursuant to Section 6.1(e) if appropriate.

(b) Upon receipt of notice from the Contractor that a Capital Improvement is required due to an Uncontrollable Circumstance or Metro Fault, Metro shall have thirty (30) days to review the Contractor's proposed Capital Improvement. Metro, within the 30-day review period, may object in writing to the Contractor's proposed Capital Improvement if:

- (i) Metro determines that the proposed Capital Improvement is not the result of or necessitated by an Uncontrollable Circumstance or Metro Fault; or
- (ii) Metro determines that the proposed Capital Improvement will, in the opinion of Metro, not be the least-costly or most effective method of resolving the problem which requires the Capital Improvement, in which case Metro shall propose a more cost-effective method; or
- (iii) in the written opinion of Bond Counsel, the proposed Capital Improvement will adversely affect the Federal tax-exempt status of the interest on any Bonds which were intended to be excludable for

Federal income tax purposes from the gross incomes of the owners thereof.

(c) In the event Metro, for reasons specified in (b) (i) and (ii) above, objects to the Contractor's proposed Capital Improvement, either party may refer the matter to the Independent Engineer for binding resolution.

(d) In addition, Metro may object to the Contractor's proposed Capital Improvement for the reasons stated in Section 6.13(a)(i) and (ii). In such event the Metro objection shall be resolved pursuant to Section 6.13(b).

Section 6.15 Review of Capital Improvement Change Orders Proposed By Metro

(a) All Metro proposed Capital Improvements shall be initiated by written Change Order designated as such by Metro. No comment by Metro or its Consulting Engineer, either in writing or orally, regarding Contractor's design, construction or operation of the Facility shall, in any way, constitute an authorization or directive to implement a Capital Improvement or other change to the Facility or its operations, unless submitted to the Contractor in the form of a Change Order.

(b) Upon receipt of a written Change Order from Metro, Contractor shall have thirty (30) days to review the proposed Capital Improvement and prepare a detailed proposal for implementation of the Change Order. The detailed proposal shall describe:

- (i) the necessary design revisions to the Facility Plans and Specifications;
- (ii) the estimated effect of the proposed Change Order on the Facility, including any increase or decrease in the Operation and Maintenance Charge, Pass Through Costs, Facility Price, the Scheduled Completion Date, the Performance Standards, the Guaranteed Annual Tonnage, or any other modification to any obligation of either Party under this Agreement; and
- (iii) a revised Drawdown Schedule which reflects the costs and timing of implementing the proposed Change Order.

(c) If Metro disagrees with any aspect of the Contractor's detailed proposal, it shall notify the Contractor in writing as soon as possible, but not later than fifteen business days, after receipt of the proposal. The Parties shall make a good faith effort to negotiate any disagreements regarding the impact of the

proposed Change Order. If Metro and the Contractor cannot agree to the cost of implementing the proposed Change Order, Metro shall have the right to issue a Notice to Proceed requiring the Contractor to implement the proposed change for an amount equal to the Contractor's Direct Costs, as that term is defined in this agreement, to the extent of Cost Substantiation. If Metro and the Contractor cannot agree to the impact of a Change Order, if any, on the Pass Through Cost, the Scheduled Completion Date, the Performance Standards or the Guaranteed Annual Tonnage, such dispute shall be resolved in accordance with Article XIII. Any increases or decreases in the Operation and Maintenance Charge due to a Metro Change Order shall be limited to an amount equal to the increase or decrease in the Contractor's Direct Costs to the extent of Cost Substantiation.

(d) The Contractor, within the thirty (30) days review period set out in (b) above, shall have the right to object in writing to any Change Orders initiated by Metro if Contractor determines that the proposed change will:

- (i) have an adverse affect on the ability of the Facility to comply with the Performance Standards or any legal requirements which govern construction or operation of the Facility; or
- (ii) render the Facility less efficient operationally; or
- (iii) render the Facility less commercially viable; or
- (iv) adversely impact the Scheduled Completion Date or the ability of the Contractor to achieve the Commercial Operation Date prior to the end of the Extension Period.

(e) In the event Metro does not agree with the Contractor's objection, of if the Credit Provider's consent has not been granted pursuant to Section 4.5(b) the matter shall be submitted to the Independent Engineer for binding resolution pursuant to Article XIII.

(f) If in the opinion of Bond Counsel approval of the change order will adversely affect the Federal tax-exempt status of the interest on any Bonds which were intended to be excludable for Federal income tax purposes from the gross incomes of the owners thereof then the change order shall not be approved.

Section 6.16 Financing Capital Improvements

(a) Capital Improvements Due to Uncontrollable Circumstances.

- (i) In the event that a Capital Improvement is required due to an Uncontrollable Circumstance, the Contractor may request a Time Extension subject to the provisions of Section 6.1 and the cost of said improvement shall be paid for from the following sources of funds in the following order of priority:
1. first, all applicable insurance or condemnation proceeds; and
 2. second, funds available in any reserves that are required or expressly permitted by the terms of the Bond Documents to be used for Capital Improvements to the Facility.
- (ii) If the sources of funds specified in (a)(i) above are not available or are insufficient to cover the cost of the required Capital Improvement, Metro shall be responsible for funding the cost of the Capital Improvement subject to its right to require the Contractor to contribute an Additional Equity Contribution. Metro may obtain Additional Financing through the issuance and sale of Additional Bonds or Metro may finance the improvement from other sources as determined appropriate by Metro. The Contractor may be required by Metro to contribute an Additional Equity Contribution equal to fifteen percent (15%) of the costs of the required Capital Improvement.
- (iii) Any Additional Financing, Additional Bonds or Additional Interim Debt, issued or otherwise assumed by Metro or the Contractor as the case may be shall be subordinate in right of payment and with respect to common collateral to the Bonds unless the Credit Provider agrees to the contrary in the exercise of its sole discretion provided that this section shall not restrict Metro's ability to issue debt to finance other facilities as long as such debt is not secured by any of the collateral for the Bonds.
- (iv) In the event that the Uncontrollable Circumstance which requires a Capital Improvement is an insured event, the Contractor shall take any and all reasonable actions reasonably necessary to obtain recovery from the appropriate insurer. The Contractor shall provide Metro with copies of all correspondence between the Contractor and any insurers from whom recovery is sought. As soon as practicable after the occurrence of an insured event, Contractor shall notify Metro, in writing,

of the estimated time period for recovery of insurance proceeds. If, in the opinion of Metro and the Contractor, the time period for recovery of insurance proceeds will unduly jeopardize completion of the Facility, or constitute an unreasonable disruption to the region's overall waste disposal system, Metro may finance the Capital Improvement and at its option issue Additional Bonds to finance the required Capital Improvement and all insurance proceeds recovered due to an Insured Event shall be first used to pay the debt service for any Additional Bonds which were issued to finance the required Capital Improvement or to repay any sums otherwise advanced by Metro.

- (iv) If Metro issues Additional Bonds, the additional Debt Service will be paid through an increase in the Tip Fee.
- (v) If the Capital Improvement results in an increase in the cost of operations and maintenance of the Facility, the operations and maintenance fee shall be increased by an amount equal to the Direct Costs attributable to the increased costs resulting from the Capital Improvement subject to Cost Substantiation. If Contractor has made an Additional Equity Contribution, Contractor shall receive an increase in the operations and maintenance component of the Tip Fee in an amount equal to a reasonable return on Contractor's equity taking into account any tax benefits received by Contractor as well as other reasonable factors. Metro may object to any increase requested by Contractor and if the parties cannot resolve any dispute after good faith negotiations the matter shall be referred to Dispute Resolution pursuant to Article XIII.
- (vi) If Metro fails or is unable to finance any required Capital Improvement, Contractor, at its option, may finance the entire Capital Improvement with an Additional Equity Contribution. If Contractor so finances any required Capital Improvement, there shall be no Metro Default as a result of the failure of Metro to finance the Capital Improvement and Contractor shall be entitled to an increase in the operations and maintenance portion of the Tip Fee as provided for above.

- (vii) If as a result of an Uncontrollable Circumstance, the Tip Fee payable by Metro shall be required to increase by an amount greater than the amount provided for in Section 15.4 then Metro may terminate this Agreement pursuant to Section 15.4 unless Contractor agrees to forgo that amount of the Tip Fee increase that is greater than the amount provided for in Section 15.4 and to pay any increase in Debt Service caused by the issuance of Additional Bonds if such is necessary to prevent the Tip Fee increase to Metro from exceeding the amount provided for in Section 15.4.

(b) Capital Improvements Due To Metro Fault or Metro Change Order. In the event a Capital Improvement is required due to Metro Fault or a written Change Order by Metro as described in Section 6.15 above, then:

(i) the Capital Improvement shall be financed from:

1. first, funds available in any reserves that are required or expressly permitted by the terms of the Bond Documents to be used for Capital Improvements to the Facility;
2. other sources as determined appropriate by Metro;
3. the proceeds from the issuance of Additional Bonds; or,
4. at the Contractor's option and sole discretion, from an Additional Equity Contribution.

(ii) Contractor shall be entitled to an increase in the Tip Fee as provided in Section 6.16(a)(v) above; and

(iii) Contractor may request a Time Extension pursuant to Section 6.1(e).

(c) Financing of Capital Improvements Due to Reasons Other Than Uncontrollable Circumstances, Metro Change Orders or Metro Fault. The Contractor shall be solely responsible for any and all financing of Capital Improvements due to reasons other than Uncontrollable Circumstances, Metro Change Orders, or Metro Fault, including but not limited to any cost overruns, the insufficiency of any equity contribution intended to be provide by the Contractor, or any other contingency.

Section 6.17 Disbursements to Pay Construction Costs

(a) Disbursements Prior to Completion. Subject to the applicable provisions of the Bond Documents and compliance with the provisions of this Section 6.17, monies shall be disbursed to the Contractor from time to time to pay the costs of acquiring, constructing, installing and performance testing the Facility in accordance with the Bond Documents and the Drawdown Schedule.

On or before the twenty-fifth day of each month during the Construction Period, the Contractor shall submit to Metro, in duplicate, a copy of a completed Requisition Certificate relating to the costs incurred in connection with the acquisition, construction and installation of the Facility during the preceding month.

Each Requisition Certificate shall contain an itemized and sworn application for payment supported by such data substantiating the Contractor's right to the requested disbursement as the Trustee may reasonably require and shall be accompanied by a certificate from the Contractor's Authorized Representative which shall certify, represent and warrant the following:

The amount of the disbursement requested pursuant to the attached Requisition Certificate, when added to the amounts previously disbursed and any payments made from the proceeds of Interim Debt or Equity Contribution, in accordance with the Bond Documents, does not exceed the total amount expended by the Contractor for Work, materials, overhead, profit and other qualified costs and expenses under this Agreement and the Bond Documents to the date of such Requisition Certificate.

(b) Final Inspection and Application for Final Disbursement. Notwithstanding anything expressed or implied herein to the contrary, the final disbursement following completion of the Facility and the Performance Test shall be made only after Metro has accepted the Facility as provided in Section 7.7(b) hereof.

Section 6.18 Intercreditor Agreement

To the extent the provisions of the Intercreditor Agreement provide for Metro or Credit Suisse to have powers, duties or authority relating to the provisions of this Article VI that differ from the specific provisions of this Article VI the provisions of the Intercreditor Agreement shall be controlling.

ARTICLE VII.

PERFORMANCE TESTING

Section 7.1 Conduct of Performance Test

(a) Prior Notice of Commencement of Performance Test; Review of Performance Test Procedures by Metro. The Contractor shall give the Metro Authorized Representative and Credit Provider's Engineer at least fifteen (15) days' written notice of the date on which first the Performance Test will begin. The Contractor shall deliver at least 24 hours prior written notice of any subsequent Performance Test. The notice shall include a schedule of the Performance Test in conformity with Exhibit C hereto. The Performance Test Procedures shall be submitted to Metro and the Credit Provider at least ninety (90) days prior to the start of the first Performance Test.

Metro shall have thirty (30) days after receipt of the Performance Test Procedures for review and comment in writing delivered to the Contractor. In the event that the Contractor objects to any of Metro's written comments on such Performance Test Procedures, the Contractor shall notify Metro in writing of such objections within ten days of receipt of Metro's comments, which notice shall state such objections and the reasons therefor, and the Parties shall promptly enter into discussions to resolve any differences regarding the Performance Test Procedures. Any Metro or Credit Provider comments on the preliminary plan which are not objected to by the Contractor shall be incorporated into the final Performance Test Procedures.

At least thirty (30) days prior to the start of the Performance Test, the Contractor shall deliver to the Metro Authorized Representative and Credit Provider's Engineer a final test plan incorporating such changes to the Performance Test Procedures plan as have been agreed upon by the Parties.

(b) Commencement of Performance Test. The Contractor shall not commence the Performance Test until (i) all applicable environmental and other governmental permits, licenses, approvals, determinations, authorizations and requirements that are necessary for the Performance Test have been obtained by the Contractor and the Contractor has certified in writing to Metro and the Credit Provider that the same have been duly obtained, which certification shall be accompanied by copies of all such permits, licenses, approvals, determinations, authorizations and requirements, and (ii) the Contractor shall have certified to Metro and the Credit Provider that the construction of the Facility has been completed. The Contractor may run concurrent Performance Tests, provided that the notice requirements of Section 7.1(a) are duly met and provided further that no portion of any Batch utilized in one Performance Test shall be utilized in any other Performance Test.

(c) Conduct of the Performance Test at Contractor's Expense. The Performance Test shall be conducted by the Contractor, at its sole expense. Metro, the Credit Provider, their officials, agents the Consulting Engineer and the Credit Provider's Engineer shall have the right to be present at all times during the Performance Test. During the Performance Test (but not during the Performance Shakedown), Metro shall pay to Contractor a Tip Fee for each Ton of Acceptable Waste, other than Rejected Waste, that Metro delivers or causes to be delivered to the Facility for Processing. Such Tip Fee shall be calculated as provided in Exhibit K hereto.

Section 7.2 Delivery and Acceptance of Acceptable Waste

(a) During the Performance Test, Metro shall deliver Acceptable Waste in an amount equal to the quantity, and substantially conforming to the Reference Waste Composition, of Acceptable Waste specified in the final test plan; provided that the Contractor may examine the composition of the Acceptable Waste and seek the relief available, including the adjustment of the Performance Standard pursuant to Section 8.13 hereof. Such Acceptable Waste, the amounts thereof and the manner and timing of delivery thereof to the Facility shall be specified in the final Performance Test plan furnished to Metro and the Credit Provider in accord with Section 7.1 hereof, provided that the amount of such Acceptable Waste and the manner and timing of delivery thereof to the Facility shall be subject to modification from time to time on reasonable prior notice to Metro and the Credit Provider to increase or decrease the amount of Acceptable Waste required to be delivered by Metro or to postpone deliveries thereof.

In addition to the Acceptable Waste to be delivered by Metro to the Facility for purposes of conducting the Performance Test, prior to the Commercial Operation Date, Metro may offer to deliver to the Facility, and the Contractor may accept for Processing at the Facility, Acceptable Waste in such amounts as Metro and the Contractor may agree. Metro shall pay the Contractor a Tip Fee for each such Ton of Acceptable Waste delivered by Metro which Contractor processes after the Performance Shakedown and prior to the Commercial Operation Date, which Tip Fee shall be calculated as provided in Exhibit K hereto. Provided further that if Metro delivers and Contractor processes or commences to process more than 15,416 Tons of Acceptable Waste during any single month prior to the establishment of the Commercial Operation Date then Metro shall only pay the incremental tonnage fee then in effect as provided in Exhibit K for all Tons delivered in excess of 15,416 Tons during that month.

Section 7.3 The Throughput Performance Standard

(a) Achievement of 95% of Throughput Performance Standard. If, prior to the Scheduled Completion Date, the Contractor establishes to the satisfaction of Metro that the Performance Tests have been completed, that the Performance Tests establish that the Facility has complied with all of the Performance Standards except for the residue standard provided for in Section 7.4 during the Performance Test period, that the Facility has been completed in substantial compliance with the requirements of this Agreement, and that the Facility achieves ninety-five percent (95%) or more of the Throughput Performance Standard, the Throughput Performance Standard will be deemed to have been met; provided that notwithstanding the foregoing, from and after the Commercial Operation Date the Contractor shall nevertheless be obligated to meet the Minimum Annual Throughput Guarantee.

(b) If, prior to the Scheduled Completion Date, the Facility does not achieve at least ninety-five percent (95%) of the Throughput Performance Standard, for reasons other than Uncontrollable Circumstances or Metro Fault, then the Contractor shall have the Extension Period to bring the Facility up to ninety-five percent (95%) of the Throughput Performance Standard. Provided that Metro shall pay a Tip Fee on a monthly basis only for each ton of waste Processed, such Tip Fee to be calculated as provided for in Exhibit K. If, by the end of the Extension Period, the Facility achieves less than ninety-five percent (95%), but not less than seventy-five percent (75%), of the Throughput Performance Standard because of Contractor Fault, then the Contractor shall derate the Bonds in accordance with the provisions of Section 7.5. In addition, the Operations and Maintenance component of the Tip Fee shall be reduced eight-tenths of 1 percent (0.8%) for each one percent (1%) of the shortfall in Facility Operations. If the Facility achieves less than ninety-five percent (95%), but not less than seventy-five percent (75%), of the Throughput Performance Standard because of Uncontrollable Circumstance or Metro Fault then no Deration Payment shall be required.

(c) Failure to Achieve 75% of Throughput Performance Standard. Failure of the Contractor to achieve Throughput of seventy-five percent (75%) of the Throughput Performance Standard on or before the last day of the Extension Period because of Contractor Fault shall be a Contractor Event of Default hereunder.

Section 7.4 The Residue Performance Standards

(a) Residue in Excess of Maximum Residue Guarantee But Not in Excess of 40% per Wet Ton of Acceptable Waste. If after the Scheduled Completion Date the Facility is producing Residue in excess of the Maximum Residue Guarantee for reason other than a

Metro Fault or an Uncontrollable Circumstance, but such Residue does not exceed forty percent (40%) per Wet Ton of Acceptable Waste delivered to the Facility, then the Contractor shall pay to Metro all of the costs associated with disposal of the amount of Residue that is in excess of the Maximum Residue Guarantee.

(b) Residue in Excess of Forty Percent (40%) After the Scheduled Completion Date. If after the Scheduled Completion Date but prior to the Commercial Operation Date in any one month the Facility is producing Residue greater than forty percent (40%) per Ton of Acceptable Waste for a reason other than a Metro Fault or an Uncontrollable Circumstance then:

(A) the Contractor shall pay to Metro all of the costs associated with disposal of the Residue that is in excess of the Maximum Residue Guarantee; and

(B) the Contractor shall further pay Metro, as liquidated damages to compensate Metro for lost landfill capacity and other expenses that cannot be readily calculated, an amount equal to

- (i) ten percent (10%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty percent (40%) per ton of Acceptable Waste processed but is less than forty-three percent (43%);
- (ii) twenty percent (20%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty-three percent (43%) per ton of Acceptable Waste processed but is less than forty-six percent (46%);
- (iii) thirty percent (30%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty-six percent (46%) per ton of Acceptable Waste processed.

(c) Residue in Excess of Forty Percent (40%) But Less Than Fifty Percent (50%) per Wet Ton of Acceptable Waste. If after the end of the Extension Period as may be adjusted by any Time Extension the Facility is producing Residue greater than forty percent (40%) but less than fifty percent (50%) per Wet Ton of Acceptable Waste for a reason other than a Metro Fault or an Uncontrollable Circumstance then:

(A) the Contractor shall pay Metro for all costs associated with the disposal of all Residue in excess of the Maximum Residue Guarantee; and

(B) the Contractor shall further pay Metro, as liquidated damages to compensate Metro for lost landfill capacity and other expenses that cannot be readily calculated, an amount equal to

- (i) ten percent (10%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty percent (40%) per ton of Acceptable Waste processed but is less than forty-three percent (43%);
- (ii) twenty percent (20%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty-three percent (43%) per ton of Acceptable Waste processed but is less than forty-six percent (46%);
- (iii) thirty percent (30%) of the cost of transporting and disposal of all such Residue in excess of the Maximum Residue Guarantee if such excess Residue shall exceed forty-six percent (46%) per ton of Acceptable Waste processed but less than fifty percent (50%).

(d) Production of Residue in Excess of Fifty Percent (50%) per Wet Ton of Acceptable Waste. If after the end of the Extension Period as it may be adjusted by any Time Extensions, the Facility is producing Residue in excess of fifty percent (50%) per Ton of Acceptable Waste for a reason other than a Metro Fault or an Uncontrollable Circumstance, then a Contractor Event of Default shall be deemed to have occurred under this Agreement.

Provided however at least thirty (30) days prior to declaring Contractor in default hereunder Metro shall give Contractor written notice that the Facility in Metro's opinion is producing Residue in excess of fifty (50%) percent per Ton of Acceptable Waste. Contractor may within thirty (30) days of said notice either deny that the Residue produced is in excess of the fifty (50%) percent per Ton or that the cause is due to Uncontrollable Circumstances or Metro Fault and state its reasons for so denying or admit that the amount of Residue is in excess of fifty (50%) percent per Ton and state the measures necessary to remedy the problem and the time reasonably necessary to effect the remedy.

If Metro agrees that Contractor should attempt to remedy the problem then Metro may not issue a notice of default pursuant to Section 15.3 until the time reasonably necessary to remedy as agreed to by the Parties has expired without the problem being resolved. In no event may the time allowed to remedy the problem exceed ninety (90) days from the date that Metro furnishes notice of the deficiency to the Contractor.

If Metro and the Contractor cannot agree whether the Facility is producing Residue in excess of fifty (50%) percent per Ton or that the cause is do to Uncontrollable Circumstance or Metro Fault or that the problem can be remedied within a reasonable time not to exceed ninety (90) days Contractor may prior to the expiration of the thirty-day (30-day) period allowed for response refer the matter to the Independent Engineer for resolution pursuant to Article XIII and if appropriate immediately commence taking all measures necessary to remedy the problem.

If the Independent Engineer prior to the ninetieth (90th) day after the giving of notice finds that the Facility is not producing Residue in excess of fifty (50%) percent per Ton or that the cause is due to Uncontrollable Circumstance or Metro Fault, then Metro may not declare Contractor in default.

If the Independent Engineer finds that Contractor can reasonably remedy the problem in less than ninety (90) days the Contractor shall have such time as the Independent Engineer so finds as reasonable to remedy the problem provided that during such period Contractor shall pay Metro all amounts provided for in Section 7.4(b).

Otherwise Metro may declare Contractor in default if the problem has not been corrected by the end of the ninetieth (90th) day after giving notice or the period found reasonably necessary to correct the problem whichever is soonest.

**Section 7.5 The Deration Payment by Contractor;
Contractor's Right to Reconduct the
Performance Test**

If, on the last day of the Extension Period as may be adjusted by a Time Extension, the Contractor has achieved at least seventy-five percent (75%) but less than ninety-five percent (95%) of the Throughput Performance Standards as provided in Section 7.3(b) then the Contractor shall pay the Trustee an amount (the "Deration Payment") which shall be the sum of (i) an amount determined by multiplying the aggregate principal amount of the Bonds then outstanding times the percentage of shortfall in the Throughput Performance Standard, and (ii) an amount determined to be necessary to cover all interest expense on such principal amount from the date on which the Extension Period ends

until the date the Trustee applies the Deration Payment to redeem Bonds pursuant to the Bond Documents taking into account the estimated interest earnings on the Deration Payment. The Deration Payment shall be made no later than ten (10) days after the end of the Extension Period. In the event that interest earnings on this amount are not sufficient to cover the interest expense of the proportionate Deration Payment, then within fifteen (15) days of each interest payment date, as established under the Bond Documents, the Contractor shall immediately pay to the Trustee an amount sufficient to cover the shortfall.

Redemption of Bonds from Deration Payment; Payment of Interest on Bonds Pending Redemption.

- (i) Payment of Interest Pending Redemption. The Trustee shall use the Deration Payment and the available investment earnings thereon to pay all interest accruing on the Bonds subject to redemption pursuant to Section 7.5(c)(ii) below and coming due during the period commencing on the date on which the Extension Period ends and ending on the date of redemption thereof.
- (ii) Date of Redemption. The Deration Payment together with all remaining investment earnings thereon shall be used to redeem Bonds on the first date permitted under the Bond Ordinance following the payment of the Deration Payment.

**Section 7.6 Payments Related to Delay in Commercial
Operation Date for Failure to Pass
Performance Tests**

(a) Failure Due to Metro Fault or Uncontrollable Circumstances. If the Facility fails to meet the Performance Standards by the Scheduled Completion Date or the end of the Extension Period due to Metro Fault or Uncontrollable Circumstances, the Contractor shall be entitled to a Time Extension and nevertheless shall continue to use its best efforts to cause the Facility to meet the Performance Standards at the earliest possible date during the Time Extension:

- (i) the provisions of Section 6.16 hereof shall govern any resulting increase in the Facility Price;
- (ii) Metro shall be responsible for payment of Debt Service;
- (iii) Metro shall be responsible for disposal of all Acceptable Waste that cannot be Processed and the costs thereof;

- (iv) neither Party shall be entitled to payment from the other Party for foregone Compost Product Revenues or Recovered Materials Revenues, or any other forms of foregone profits or revenues; and
- (v) the Scheduled Completion Date shall be extended by a Time Extension. The length of the Time Extension shall be established pursuant to Section 6.1(e)(iv).

(b) Failure Due to Reasons other than Metro Fault or Uncontrollable Circumstances. If the Facility fails to meet the Performance Standards by the Scheduled Completion Date for any reason other than Metro Fault or Uncontrollable Circumstances the Contractor shall be granted the Extension Period, during which Extension Period:

- (i) Metro shall continue to cause Acceptable Waste to be delivered to the Facility in such quantities as shall be requested by Contractor subject to the Delivery Schedule and other provisions of Section 8.2 and Metro shall pay a monthly Tip Fee equal to the Tip Fee for each ton of Acceptable Waste Processed as calculated pursuant to the provisions of Exhibit K.
- (ii) Contractor shall Process through the Facility all Acceptable Waste delivered by Metro and be responsible for the costs of disposal of excess Residue;
- (iii) the Contractor shall be responsible for all of its own costs and expenses, including debt service (if any) on its Equity Contribution and Debt Service on all outstanding Financing; and
- (iv) neither Party shall be entitled to payment from the other Party for foregone Compost Product Revenues or Recovered Materials Revenues, or any other forms of foregone profits or revenues.

Section 7.7 Certification of Performance Test Results; Final Disbursement

(a) Certification of Performance Test Results; Acceptance of Facility by Metro. Upon completion of the Performance Test, the Contractor shall deliver to Metro the Certificate of Completion. Upon delivery to Metro of the Certificate of Completion, Metro's Authorized Representative shall execute and deliver to the Contractor a dated receipt therefor, which receipt shall serve as conclusive evidence of the date of receipt by Metro of the Certificate of Completion.

If Metro shall, for any reason, be of the opinion that the Contractor did not have a reasonable basis for certifying any matter covered by the Certificate of Completion or otherwise is, for any reason, of the opinion that any of the results of the Performance Test set forth therein are inaccurate, incomplete or unreliable, Metro may, within ten (10) days of receipt thereof, refer such matter to the Consulting Engineer for review and comment and shall notify the Contractor in writing of the date upon which such referral was made.

Within fourteen (14) days after the date upon which Metro refers such matters to the Consulting Engineer for review, the Consulting Engineer shall provide Metro and the Contractor with a written report (the "Consulting Engineer's Report") setting forth in detail the Consulting Engineer's findings, conclusions and opinions with respect to the results of the Performance Test as set forth in the Certificate of Completion and, if the Consulting Engineer's Report indicates that the results of the Performance Test as set forth in the Certificate of Completion, for any reason, are inaccurate, incomplete or unreliable, or that the Contractor did not have a reasonable basis for its certification of any of such results, setting forth the Consulting Engineer's recommendations as to the steps that must be taken in order to correct the same and the extent to which all or any part of the Performance Test must be redone once such corrective actions have been taken.

In the event the Consulting Engineer's Report indicates that the results of the Performance Test as set forth in the Certificate of Completion, for any reason, are inaccurate, incomplete or unreliable, or that the Contractor did not have a reasonable basis for its certification of any of such results, the Contractor shall:

- (i) immediately proceed to take such action as shall have been recommended by the Consulting Engineer in order to correct the same;
- (ii) to the full extent necessary or appropriate in the opinion of the Consulting Engineer, reconduct the Performance Test; and
- (iii) provide Metro with a new Certificate of Completion once the Performance Test or relevant portions thereof has been redone, which new Certificate of Completion shall be subject to the same provisions for review by Metro and referral to the Consulting Engineer as are set forth above with respect to the original Certificate of Completion; or
- (iv) refer the matter for Dispute Resolution pursuant to Article XIII.

In the event the Consulting Engineer's Report indicates that the Certificate of Completion is accurate, complete and reliable and that the Contractor had a reasonable basis for its certification of the Performance Test results as set forth therein, then and in such event the Contractor shall be deemed to have met the Performance Standards to the extent set forth in the Certificate of Completion.

(b) Acceptance of Facility by Metro; Selection of Commercial Operation Date. If on the basis of their observations, review of the Work, final inspection of the Facility and the results of the Performance Test of the Facility as evidenced by the information in the Certificate of Completion, Metro and the Consulting Engineer accept that the Facility has met all of the Performance Standards (as adjusted, if appropriate, to conform to changes in the composition of the Acceptable Waste as contemplated in Section 8.13 hereof) under this Agreement, Metro shall within ten (10) days so notify the Contractor, the Trustee, and the Credit Provider.

Upon the Acceptance of the Facility by Metro, the Commercial Operation Date, shall be the first calendar day of the month following the date of the Acceptance.

Section 7.8 Effect of Intercreditor Agreement on Performance Testing

To the extent the provisions of the Intercreditor Agreement provide for Metro or Credit Suisse to have powers, duties or authority relating to the provisions of this Article VII that differ from the specific provisions of this Article VII the provisions of the Intercreditor Agreement shall be controlling.

ARTICLE VIII. FACILITY OPERATION

Section 8.1 Continuing Compliance with Performance Standards and Applicable Law

The Contractor acknowledges that Metro is entering into this Agreement with the expectation that during the Term the Facility will meet all applicable Performance Standards and will comply with Applicable Law.

The Contractor hereby agrees, covenants and guarantees that during the Term the Facility will meet all Performance Standards and all requirements of Applicable Law unless such Performance Standards or requirements of Applicable Law cannot be met or complied with as a result of Metro Fault or Uncontrollable Circumstances.

The Contractor hereby acknowledges that the guaranty to meet all applicable Performance Standards as set forth herein and to comply with all requirements of Applicable Law as set forth herein is an absolute and unconditional obligation of the Contractor throughout the Term except as such performance may be specifically excused pursuant to the provisions of this Agreement.

Section 8.2 Delivery and Acceptance of Acceptable Waste

(a) The Delivery Schedule. Beginning on the Commercial Operation Date and continuing throughout the Term of this Agreement, but subject to the provisions of this Section 8.2 and Sections 8.8 and 8.14, Metro shall deliver, or cause to be delivered, to the Facility Acceptable Waste in each Fiscal Year in an aggregate amount equal to or exceeding the Guaranteed Annual Tonnage.

The Contractor and Metro shall establish the Delivery Schedule to be effective as of the Commercial Operation Date consistent with the obligation of Metro to deliver the Guaranteed Annual Tonnage of Acceptable Waste. The Delivery Schedule may be adjusted on an annual basis or more frequently as the Parties may agree. The Delivery Schedule shall indicate periods of Scheduled Maintenance during which lesser Tonnages shall be delivered and make allowance for limited periods of anticipated but unscheduled maintenance not inconsistent with the minimum tonnages provided for below. Contractor shall give Metro notice of all unscheduled maintenance as soon as possible.

The Delivery Schedule shall be subject to the following weekly and monthly minimum and maximum tonnage:

Minimum Daily Tonnage:	0
Maximum Daily Tonnage:	800
Minimum Weekly Tonnage:	2,500
Maximum Weekly Tonnage:	5,000
Minimum Monthly Tonnage:	11,500
Maximum Monthly Tonnage:	18,000
Minimum Annual Tonnage:	185,000
Maximum Annual Tonnage:	200,000

The foregoing maximum tonnages may be exceeded with Contractor approval. Provided however in no event shall Metro have any obligation to deliver or cause to be delivered to the Facility more than 750 Tons of Acceptable Waste on any Monday, Tuesday, Wednesday, Thursday or Friday, 250 Tons of Acceptable Waste on any Saturday or any Acceptable Waste on any Sunday.

(b) Acceptable Waste Deemed to Be Delivered by Metro. Subject to the rights of the Contractor to refuse Rejected Waste pursuant to Section 8.2(d) hereof, the Contractor shall accept

all Acceptable Waste, properly delivered during Delivery Hours by or on behalf of Metro, that Metro is entitled to deliver or cause to be delivered pursuant to this Article VIII. For the purpose of determining whether or not Metro has delivered the Guaranteed Annual Tonnage of Acceptable Waste to the Facility (but not for the purpose of determining ownership of or responsibility for Acceptable Waste and Unacceptable Waste, which shall be governed by Sections 8.7 and 8.8 hereof), the following Acceptable Waste shall be deemed delivered:

- (i) All Acceptable Waste actually delivered, or caused to be delivered, to the tipping floor of the Facility, during Delivery Hours, by or on behalf of Metro in accordance with the provisions of this Agreement, less any Rejected Waste that the Contractor rightfully refuses to accept pursuant to Section 8.2(d) hereof; and
- (ii) All Acceptable Waste which Metro is prepared to deliver or cause to be delivered to the Facility during Delivery Hours, but which is not so delivered solely because the Facility is not capable of Processing such Acceptable Waste (unless Contractor may rightfully reject such waste pursuant to Section 8.2(d)), or because the Contractor has refused to accept delivery thereof in violation of the terms of this Agreement.

(c) Processing of Acceptable Waste. The Contractor shall Process all such Acceptable Waste delivered by Metro; provided, however, that during the period of any Processing Capacity reduction the Contractor may, to the extent and in the manner provided in Section 8.14, dispose of such Acceptable Waste by means other than Processing and pay the associated costs of such disposal as provided in Section 8.14 hereof if the Processing Capacity reduction is due to reasons other than Metro Fault or Uncontrollable Circumstance.

(d) Rejected Waste. Contractor may reject and refuse to accept delivery of or refuse to Process any Acceptable Waste delivered or sought to be delivered to the Facility if and to the extent that: (1) the volume of Acceptable Waste delivered to the Facility on that date exceeds the maximum tonnages set forth in Section 8.2(a); (2) the Facility cannot Process the Acceptable Waste due to Metro Fault; (3) the Facility cannot Process the Acceptable Waste due to Uncontrollable Circumstances; or (4) the volume of Acceptable Waste delivered or sought to be delivered to the Facility during Scheduled Maintenance or during an unscheduled maintenance period allowed for in the Delivery Schedule exceeds that tonnage consistent with the degree by which the Facility has diminished Processing Capacity as set forth in the Delivery Schedule.

Section 8.3 Emergency Deliveries

Metro may, due to events that jeopardize Metro's ability to assure the orderly flow of solid waste through Metro's other facilities in order to properly dispose of all solid waste for which Metro is responsible, request the Contractor to accept more Acceptable Waste than the Contractor is obligated to accept under Section 8.2 or waste Contractor elects to accept in excess of the Guaranteed Annual Tonnage pursuant to Section 8.4. The Contractor shall use reasonable efforts to accommodate such requests; including electing to process such wastes through the composter plant or treating such wastes as Rejected Wastes and causing the wastes to be placed in containers as designated by Metro and causing the containers to be delivered to a landfill or other disposal site as designated by Metro; provided, however, that the Contractor's determination of its ability to do so shall be final. Additional charges for acceptance of Acceptable Waste under this Section 8.3 shall be determined in accordance with Section 8.4 for waste that Contractor elects to process and in an amount equal to 1.092 times Contractor's Direct Costs subject to Cost Substantiation for waste that is transferred directly from the Facility and not processed by Contractor.

Section 8.4 Excess Processing Capacity

The Contractor may from time to time notify Metro in writing that there is available at the Facility daily Processing Capacity in excess of the Guaranteed Daily Processing Capacity and request Metro to make available at the Facility during Delivery Hours for acceptance by the Contractor Acceptable Waste in an aggregate amount equal to all or a portion of such excess daily Processing Capacity. Such notice shall contain a schedule setting forth the amount of the excess daily Processing Capacity, the estimated period during which such excess daily Processing Capacity will exist and the estimated portion of such excess daily Processing Capacity which the Contractor desires Metro to use.

Metro shall within ten (10) Business Days of receipt of such notice notify the Contractor as to whether Metro chooses to utilize such excess daily Processing Capacity. In the event that Metro agrees to increased deliveries of Acceptable Waste to the Facility, an appropriate temporary modification of the Delivery Schedule shall be made in writing, which temporary Delivery Schedule shall specify:

- (i) the amounts of additional Acceptable Waste to be delivered;
- (ii) the duration of such increased deliveries;
- (iii) any adjustment in the Tip Fee; and

- (iv) any other adjustments to the Delivery Schedule necessary to accommodate such increased deliveries.

Metro shall pay the Contractor for processing such Excess Tonnage as provided in Exhibit K.

Section 8.5 Other Contracts for Acceptable Waste Delivery

The Contractor may not enter into agreements with any Person other than Metro for the Processing of Acceptable Waste except with the prior written consent of Metro, which consent may be refused by Metro without cause in its sole and absolute discretion.

Section 8.6 Scales and Weighing Records

Metro shall operate and maintain permanent motor truck scales at the Facility, calibrated to the accuracy required by Oregon law, and shall weigh all vehicles delivering Acceptable Waste to the Facility and record the weights thereof. The weight record shall contain gross weight, tare weight, the difference between gross weight and tare weight, date and time and vehicle identification. Metro shall give each vehicle operator written confirmation of such information at the time the vehicle is weighed.

Metro may require each vehicle operator delivering Acceptable Waste to present to the scale operator a card, permit, identification or license. Metro may require from time to time the revalidation of the tare weight of any vehicle or the reweighing of unloaded vehicles.

If the permanent scales at the Facility are not working properly or are being tested, Metro shall use portable scales at the Facility or scales located within one-half mile of the Facility. If none of the alternate weighing facilities meeting the requirements of Applicable Law are available, Metro shall estimate the quantity of Acceptable Waste delivered on the basis of truck volumes. These estimates shall take the place of actual weighing records during any such scale outage.

Metro, at its expense, shall inspect and test the scales at least every three (3) months. At the written request of the Contractor, Metro, in the presence of the Contractor's Authorized Representative, shall make additional tests of all scales. The cost of these additional tests shall be borne by the Contractor if the scales meet the accuracy requirements imposed by Oregon law.

If any test shows that a scale registers farther above or below the correct reading than permitted by Oregon law, the

charges and calculations based on readings made (i) within thirty (30) days preceding the test or (ii) if the Contractor has requested a test as provided above, from the date of such request, shall be corrected by the percentage of the inaccuracy found; provided, however, that if the Contractor has not requested a test and a test of the scales has been performed during the preceding thirty (30) days, only the readings and related charges and calculations made after that test shall be corrected on the basis of the subsequent test.

Metro shall maintain daily records of the total tonnage of Acceptable Waste delivered to the Facility hereunder and the tonnages of Rejected Waste. Metro shall furnish the Contractor a compilation of such information for each month, within ten (10) days after the end of the month. Copies of all weight tickets shall be kept by Metro for at least six (6) years.

Section 8.7 Ownership of Acceptable Waste

Title to and responsibility for Processing and/or disposal of Acceptable Waste shall pass from Metro (or the party delivering Waste to the Facility) to the Contractor only when such Acceptable Waste has been accepted by Contractor under this Section 8.7. Acceptable Waste deposited on the tipping floor of the Facility shall be deemed accepted by Contractor, provided, however, that Contractor may reject Unacceptable Waste at any time up to one hour after such Unacceptable Waste is deposited on the tipping floor, and may reject any Hazardous Waste at any time before such Hazardous Waste is placed by Contractor into the DANO Drums. Unacceptable Waste that is timely rejected by Contractor shall be disposed of pursuant to Section 8.10.

Section 8.8 Right to Refuse Waste; Extent of Refusal Rights

(a) Right to Refuse. The Contractor may refuse to accept at the Facility for Processing hereunder:

- (i) any Unacceptable Waste;
- (ii) any Rejected Waste; and
- (iii) any Acceptable Waste which the Contractor has been requested to accept at the Facility inconsistent with the Delivery Hours or Delivery Schedule provided for in Section 8.2.

(b) Wrongful Refusal. Except for waste described in Section 8.8(a) above or Acceptable Waste in excess of the amounts described in Section 8.2(a) above and which the Contractor has not agreed to accept as provided in Section 8.4 above, all

Acceptable Waste which the Contractor refuses to accept shall constitute By-pass Waste for purposes of this Agreement.

During any year which the Facility fails to process the Minimum Annual Throughput Guarantee due to reasons other than Uncontrollable Circumstance or Metro Fault the Contractor shall pay Metro as Liquidated Damages to compensate Metro for lost landfill capacity and other expenses that cannot be readily calculated for each Ton of By-Pass Waste an amount equal to the cost (including transportation costs) to Metro of disposing of such By-Pass Waste.

Section 8.9 Disposal of Hazardous Waste

(a) The Parties recognize that certain materials that have been determined to be harmful to the environment by federal and state law may be delivered to the Facility by third parties beyond the control of Metro or the Contractor. The types of harmful materials contemplated are divided into three categories;

- (1) Regulated Hazardous Materials and Hazardous Waste;
- (2) Hazardous Materials and Hazardous Wastes that are not subject to regulation because while generated by industrial or commercial entities they are produced or delivered in quantities smaller than the minimums that would subject such materials or wastes to regulation; and
- (3) Materials and wastes which are available or have been sold in retail outlets for household uses that contain small quantities of materials or wastes which would be considered Hazardous Materials or Hazardous Waste if utilized by or generated by industrial or commercial concerns.

For the purpose of this section, the above categories of materials shall be designated as Type 1, Type 2 and Type 3 Hazardous Materials.

(b) Type 1 Hazardous Materials: These materials are highly regulated. It is illegal to dispose of these materials by delivering them to the Facility or by placing them in containers containing municipal solid waste or otherwise causing, permitting, or allowing the material to be delivered to the Facility. Metro and Contractor agree that they will both take immediate action to minimize any environmental damage that may be caused by the delivery of Type 1 materials to the Facility, and take all necessary action to ensure that the persons responsible for such deliveries are held accountable to the fullest extent of the law for all costs incurred by the Parties.

Accordingly, Metro shall make reasonable efforts to exclude deliveries to the Facility that Metro knows or has reason to know contain Type 1 materials. If in despite of Metro's efforts, Type 1 materials are delivered to the Facility, then Contractor shall upon discovering such materials immediately notify Metro and the DEQ. Metro and Contractor shall take all steps possible to assist DEQ in determining the source of such materials and the person or persons who delivered the materials and the person or persons who caused, allowed or facilitated the delivery. Contractor, shall, subject to the approval of the DEQ, take all measures necessary to cause the removal of the material from the facility and the disposal of the material in a manner consistent with Applicable Law. As between Metro and Contractor, Metro shall bear the financial responsibility for the costs of such investigation, clean-up, disposal and remediation of the Facility as necessary. Metro may pursue any remedy or funding source available to Metro to recover its costs or cause such third parties to directly pay Contractor the cost of such clean-up and disposal. Nothing in this Agreement shall create any liability of Metro or the Contractor to any third party for the failure to detect such materials or waste when they are brought to the Facility.

Metro shall pay the Contractor, as a Pass Through Cost, within thirty (30) days of receipt by Metro of a written invoice for such amounts, the amount reasonably necessary to permit the Contractor to provide handling, storage, transportation and disposal of such Hazardous Waste, provided that such amount shall be subject to Cost Substantiation and shall not exceed the reasonable amount for comparable hazardous material handling, storage, transportation and disposal services within a metropolitan region comparable to the Portland metropolitan region provided further Metro shall have no responsibility for costs for investigation, cleanup, handling, storage, transportation and disposal or remediation for Hazardous Waste detected after they have been placed in the DANO Drums.

The Contractor shall remove and dispose of, or cause to be removed and disposed of, such Hazardous Waste as soon as reasonably possible in accord with Applicable Law. Hazardous Waste shall be weighed on the scales provided for in Section 8.6 hereof, or on such other scales as are acceptable to the Contractor and Metro, and shall not count towards the Guaranteed Annual Tonnage.

(c) Type 2 Hazardous Materials. While these materials are identical to those materials that are considered Type 1 Hazardous Materials in content, composition and adverse consequences on the environment, they are not subject to regulation to the same degree by federal and state authorities. Metro has adopted policies and procedures and ordinances prohibiting the disposal of such materials at the Facility. Accordingly, it is

appropriate for the Parties to agree that such materials will be subject to the same concerns and restrictions as exist for Type 1 Hazardous Materials. Metro and Contractor agree that they will both take immediate action to minimize any environmental damage that may be caused by the delivery of Type 2 materials to the Facility.

Accordingly, Metro shall make reasonable efforts to exclude deliveries to the Facility that Metro knows or has reason to know contain Type 2 materials. If in despite of Metro's efforts, Type 2 materials are delivered to the Facility, then Contractor shall upon discovering such materials immediately notify Metro and the DEQ. Metro and Contractor shall take all steps possible to assist DEQ in determining the source of such materials and the person or persons who delivered the materials and the person or persons who caused, allowed or facilitated the delivery. Contractor, shall, subject to the approval of the DEQ, take all measures necessary to cause the removal of the material from the facility and the disposal of the material in a manner consistent with Applicable Law. As between Metro and Contractor, Metro shall bear the financial responsibility for the costs of such investigation, clean-up, disposal and remediation of the Facility as necessary. Metro may pursue any remedy or funding source available to Metro to recover its costs or cause such third parties to directly pay Contractor the cost of such clean-up and disposal. Nothing in this Agreement shall create any liability of Metro or the Contractor to any third party for the failure to detect such materials or waste when they are brought to the Facility.

Metro shall pay the Contractor, as a Pass Through Cost, within thirty (30) days of receipt by Metro of a written invoice for such amounts, the amount reasonably necessary to permit the Contractor to provide handling, storage, transportation and disposal of such Hazardous Waste, provided that such amount shall be subject to Cost Substantiation and shall not exceed the reasonable amount for comparable hazardous material handling, storage, transportation and disposal services within a metropolitan region comparable to the Portland metropolitan region provided further Metro shall have no responsibility for costs for investigation, cleanup, handling, storage, transportation and disposal or remediation for Hazardous Waste detected after they have been placed in the DANO Drums.

The Contractor shall remove and dispose of, or cause to be removed and disposed of, such Hazardous Waste as soon as reasonably possible in accord with Applicable Law. Hazardous Waste shall be weighed on the scales provided for in Section 8.6 hereof, or on such other scales as are acceptable to the Contractor and Metro, and shall not count towards the Guaranteed Annual Tonnage.

(d) Type 3 Hazardous Materials. These materials, while potentially being capable of causing adverse environmental impact, are presently legal for use by households. The materials may be disposed of in municipal solid waste. Metro agrees to take, consistent with its Solid Waste Management Plan, and Solid Waste Reduction Program, and other Applicable Law, reasonable efforts to reduce the volume of Type 3 Hazardous Materials introduced into the wastestream in the Metro region. However, Metro and Contractor recognize that despite Metro's best effort it is reasonable to assume that certain quantities of these materials will, in fact, be placed in the municipal solid wastestream and delivered to the Facility.

Contractor agrees to take reasonable efforts to attempt to remove such articles from the Acceptable Waste material delivered to the Facility by Metro, or caused to be delivered to the Facility by Metro, prior to the time that waste is delivered into the DANO drums. Contractor shall remove such materials and sort and separate these materials into separate containers and cause the materials so separated and sorted to be disposed of in a manner consistent with Applicable Law.

Metro shall pay the Contractor, as a Pass Through Cost, within thirty (30) days of receipt by Metro of a written invoice for such amounts, the amount reasonably necessary to permit the Contractor to provide handling, storage, transportation and disposal of such Hazardous Waste, provided that such amount shall be subject to Cost Substantiation and shall not exceed the reasonable amount for comparable hazardous material handling, storage, transportation and disposal services within a metropolitan region comparable to the Portland metropolitan region.

The Contractor shall remove and dispose of, or cause to be removed and disposed of, such Hazardous Waste as soon as reasonably possible in accord with Applicable Law. Hazardous Waste shall be weighed on the scales provided for in Section 8.6 hereof, or on such other scales as are acceptable to the Contractor and Metro, and shall not count towards the Guaranteed Annual Tonnage.

(e) Contractor's Responsibility. Contractor recognizes that Contractor is the party that has control and responsibility for the design, construction, operation and maintenance of the Facility. As such, Contractor agrees to bear the risk as between Metro and Contractor for the possibility that despite Contractor and Metro efforts, materials which are within the description of the Type 1, Type 2 or Type 3 Hazardous Materials described herein will in fact enter the DANO drum and become part of the residue or compost product. Accordingly, Contractor agrees to indemnify and hold harmless Metro from any claim or cause of action arising out of an occurrence in which any Type Hazardous Material has

entered the DANO drum or is discovered in the residue or compost product. In addition, Contractor agrees to indemnify and hold Metro harmless from any claim of whatever nature arising from any release of hazardous materials into the environment if and when such materials are discovered to have been released into the environment at the Facility prior to the Notice to Proceed or have been released into the environment through the operation of the Facility by contaminating soil or groundwater or the air in and around the Facility as a result of Contractor's operation of the Facility other than as provided for in subsections 8.9(b), (c) and (d) for which Metro has responsibility.

(f) Other than for Hazardous Waste disposed of by Metro pursuant to this Section 8.9 and except as provided for herein as specifically agreed to between Contractor and Metro in paragraphs (b), (c) and (d) herein Metro shall have no further liability to Contractor and Contractor shall have no further remedies against Metro with respect to the release of any Hazardous Materials or Waste.

Section 8.10 Disposal of Residue and Unacceptable Waste

(a) Disposal Facilities. Metro shall make available to the Contractor a landfill or other disposal facility for the disposal of Unacceptable Waste (excluding Hazardous Waste) and Residue (other than any Residue in excess of the Maximum Residue Guarantee).

(b) Transportation of Residue. Metro shall be responsible for arranging for transportation of the Residue to the landfill or other disposal facility designated by Metro, and except as otherwise provided in Section 7.4 hereof, Metro shall be responsible for and shall pay the costs and expenses of such transportation and disposal. To the extent Metro determines that the Facility Specifications contained in Exhibit I are not compatible with the mode of transportation to be utilized by Metro, Metro may request a Capital Improvement pursuant to Section 6.15.

Section 8.11 Repairs and Maintenance

(a) Repairs and Maintenance. The Contractor, at its own expense, shall maintain the Facility in good condition at all times and make all repairs and replacements required for the Facility to meet all applicable Performance Standards, to comply with Applicable Law and to maintain all Manufacturer's Warranties and Required Insurance in effect at all times. The Contractor shall maintain the Facility in safe condition at a level consistent with Applicable Law and normal practices for similar facilities. The Contractor shall perform the periodic maintenance required by the Operation and Maintenance Manual. The Contractor shall maintain the Facility Site in good repair

and in a neat and orderly condition to protect the Facility and the Facility Site against deterioration and to maintain an aesthetic quality of the Facility and the Facility Site.

Upon the request of Metro, the Contractor shall permit the Consulting Engineer or other designee of Metro to inspect the Facility and the Contractor's maintenance and safety records.

At least ten (10) days prior to the Commercial Operation Date and at least ten (10) days prior to the beginning of each Annual Billing period, the Contractor shall provide Metro with a written time table setting forth the dates upon which Scheduled Maintenance will occur during the next succeeding Annual Billing Period. Metro and the Contractor will take account of such time table of Scheduled Maintenance in establishing the Delivery Schedule for each Annual Billing Period as provided in Section 8.2 hereof. In the event of any change in any time table of Schedule Maintenance, the Contractor shall give Metro at least ten (10) days' written notice thereof, unless such time is not available, in which case Contractor shall give Metro as much advance notice as is practicable.

(b) Repairs and Improvements Needed to Meet Performance Standards. The Contractor, at its own expense and regardless of the cost thereof, shall make all improvements and repairs to the Facility, other than those due to Metro Fault or Uncontrollable circumstances including but not limited to any Capital Improvements, necessary to meet the Performance Standards and comply with Applicable Law, and Metro shall not be directly or indirectly liable for the costs thereof. If the improvements or repairs are due to Metro Fault or Uncontrollable Circumstances, financing of the repairs or improvements will be in accordance with Section 6.16. It shall be the absolute and unconditional obligation of the Contractor to provide, consistent with the foregoing financing obligations of the parties, all labor, material and equipment necessary to operate and maintain the Facility in accord with the Performance Standards and Applicable Law.

Section 8.12 Additional Performance Tests

If at any time, but not more frequently than once every twelve (12) months, Metro believes, after consultation with appropriate professional consultants, that the Facility is not meeting the Performance Standards or is not complying with Applicable Law, Metro, without limiting any other rights it may have hereunder, may, by written notice thereof to the Contractor, require the Contractor to conduct an Additional Performance Test. Such notice shall set forth in reasonable detail those aspects of the Facility which Metro believes are not meeting the Performance Standards or complying with Applicable Law.

Upon the delivery of any such notice by Metro to the Contractor, the Contractor's Authorized Representative shall sign and deliver to Metro a dated receipt for such notice, which receipt shall constitute conclusive evidence of the date of delivery of such notice. Within twenty (20) days after receipt of such notice from Metro the Contractor shall commence the Additional Performance Test, and in accord with such notice, unless:

- (i) the Contractor agrees to take, as soon as practicable and on a schedule agreed upon by the Contractor and Metro, such actions as Metro shall approve as being necessary to enable the Facility to meet the Performance Standards and comply with Applicable Law; or
- (ii) the Contractor believes, after consultation with appropriate professional consultants and without conducting the Additional Performance Test, that the Facility is meeting the Performance Standards and/or complying with Applicable Law, in which event it shall, within ten (10) days after receipt of such notice from Metro, refer the matter for dispute resolution pursuant to Section 13.1 hereof.

In the event any such matter is referred for dispute resolution pursuant to Section 13.1 hereof, the Independent Engineer shall, in its determination of such matter, set forth all actions (including, but not limited to the conduct of an Additional Performance Test if the Independent Engineer is of the opinion that such a test is necessary or appropriate in order to provide the information necessary to allow the Independent Engineer to make a determination with respect to the matter or matters in dispute) which should be taken to enable the Facility to meet the Performance Standards and/or comply with Applicable Law and the Contractor shall take all such actions within a reasonable period of time following such determination on a schedule agreed upon by the Contractor and Metro.

If an Additional Performance Test is conducted, the Contractor shall deliver a test plan to the Metro Representative at least twenty (20) days prior to the start of the Additional Performance Test. Metro, its officials and agents, the Consulting Engineer, the Credit Provider's Engineer, and the Independent Engineer shall have the right to be present during any such Additional Performance Test.

Upon completion of any such Additional Performance Test, the Contractor shall deliver to Metro an Official Certificate signed by the Contractor's Authorized Representative setting forth in detail the results of such Additional Performance Test and the

data upon which such results are based. Upon delivery by the Contractor to Metro of any such Official Certificate, the Metro Authorized Representative shall deliver to the Contractor a signed and dated receipt therefor, which receipt shall serve as conclusive evidence of the date of receipt by Metro of such Official Certificate.

If Metro shall believe that the Contractor shall not have had a reasonable basis for certifying as to any matter covered by any Official Certificate delivered under this Section 8.12, or is, for any reason, otherwise of the opinion that any of the results of the Additional Performance Test pertaining thereto are inaccurate, incomplete or unreliable, Metro may within ten (10) days of receipt thereof, refer such matter to the Consulting Engineer, in which event the procedures set forth in Section 7.7 hereof (relating to the Performance Test) shall apply as if the terms "Additional Performance Test" and "Official Certificate" were substituted for the terms "Performance Test" and "Certificate of Completion," respectively, in said Section 7.7. During the conduct of any Additional Performance Test, Contractor shall advance all funds necessary for the Additional Performance Test. If the results of any Additional Performance Test demonstrate that the Contractor is operating in compliance with the Performance Standards and the Applicable Law, Metro shall reimburse Contractor for the full cost and expenses of the Additional Performance Test. If the results of any Additional Performance Test demonstrate that the Contractor is not operating in material compliance with the Performance Standards and the Applicable Law, the Contractor shall pay the full cost and expenses of the Additional Performance Test.

Section 8.13 Changes in Waste Stream Composition

(a) Compliance With Performance Standards Based on Reference Waste Stream. The Parties agree that the Contractor's obligations to comply with the Performance Standards are predicated on an Acceptable Waste composition equivalent to the Reference Waste Composition. The Parties agree that changes in the Acceptable Waste composition can affect the Contractor's ability to comply with the Performance Standards, both before and after the Commercial Operation Date, or change the Contractor's cost of processing Acceptable Waste at the Facility, or both.

(b) Waste Composition Tests. The Contractor may at any time, and shall upon the written request of Metro, conduct Waste Composition Tests which will provide a statistically accurate representation of the annual average composition of Acceptable Waste entering the Facility. Metro will give the Contractor any such written request at least thirty (30) Business Days in advance of the date upon which Metro desires such test to begin, and Metro agrees to pay all costs of tests conducted at Metro's request. Metro will be notified in writing at least thirty (30)

days in advance of all Waste Composition Tests conducted by the Contractor and may participate in them or observe them, at Metro's discretion.

If, based on the results of Waste Composition Tests conducted by the Contractor as provided above, the Contractor is of the opinion that:

- (i) the cost of processing Acceptable Waste at the Facility will be increased; or
- (ii) it will not be possible, in the Contractor's reasonable judgment, to comply with the Performance Standards;

then the Contractor may submit a detailed written report to Metro setting forth the reasons for such opinion and requesting an increase in the Tip Fee or changes in the Performance Standards, as the case may be. Upon the delivery by the Contractor to Metro of any such written report, the Metro Authorized Representative shall deliver to the Contractor a signed and dated receipt therefor, which receipt shall serve as conclusive evidence of the date of delivery of such report to Metro. To the extent that the matter is resolved in the Contractor's favor, any resulting increase in Tip Fee or change in the Performance Standards shall be retroactive to the date of the Contractor's report to Metro.

Unless Metro denies the Contractor's request in writing within sixty (60) days of receipt of the Contractor's report, the Contractor's request shall be deemed granted unless Contractor shall have agreed in writing to allow Metro a longer period to resolve the matter. If Metro denies the request, Metro's written communication to the Contractor shall set forth in detail Metro's reasons therefor.

If the Contractor, after reviewing Metro's reasons for the denial, disagrees with Metro, the matter shall be submitted for dispute resolution pursuant to Section 13.2 hereof.

(c) Contractor Tests of Waste Stream. Contractor may perform periodic random tests of the Acceptable Waste entering the Facility for its own internal use without notice to Metro, which tests shall not constitute the formal Waste Acceptance Tests described in Section 8.13(b) hereof.

Section 8.14 Notice of Reduction in Processing Capacity

The Contractor shall immediately advise Metro by telephone, to be confirmed in writing within twenty-four (24) hours, of any reduction in Processing Capacity and:

- (i) its effect on the Contractor's ability to perform its obligations hereunder;
- (ii) whether, in the Contractor's opinion, the cause for the reduction in Processing Capacity is Uncontrollable Circumstances, Contractor Fault or Metro Fault;
- (iii) its probable duration; and
- (iv) a schedule of the amount of Acceptable Waste that the Facility is capable of Processing during such reduction in Processing Capacity.

The Contractor shall use its best efforts to resume normal operation of the Facility as soon as reasonably possible.

In the event Contractor, due to a reduction in Processing Capacity, is unable to Process Acceptable Waste which was delivered to the Facility prior to Contractor giving Metro notice of the reduction in Processing Capacity, Contractor shall cause such Acceptable Waste to be transported to the solid waste transfer station or other suitable waste disposal facility reasonably designated by Metro. If the cause of the reduction in Processing Capacity is determined to be the result of an Uncontrollable Circumstance or Metro Fault, Metro shall bear the cost of such transportation. If the cause is other than an Uncontrollable Circumstance or Metro Fault then Contractor shall pay the cost of such transportation.

During the period of any reduction in Processing Capacity Metro shall deliver to the Contractor only such amount of Acceptable Waste as the Contractor shall request in the written schedule delivered to Metro as provided above. If the reduction in Processing Capacity is not the result of an Uncontrollable Circumstance or Metro Fault and the Facility fails to Process the Minimum Annual Throughput Guarantee in any Contract Year, then (i) the amount of Acceptable Waste not delivered by Metro (the difference between the amount of Acceptable Waste set forth in the Delivery Schedule established pursuant to Section 8.2 and the amount requested by Contractor pursuant to this Section 8.14) shall constitute By-Pass Waste pursuant to Section 8.8, and (ii) if the reduction in Processing Capacity endures for a period greater than thirty (30) days, then commencing with the next monthly Tip Fee payment otherwise due, Metro shall pay a Tip Fee based on the actual Tonnage of Acceptable Waste processed by Contractor during the monthly period computed as provided for in Section 7.6(b).

If the actual Tonnage of Acceptable Waste processed by Contractor during any Contract Year is less than seventy-five (75%) of the Throughput Performance Standard then a Contractor

Event of Default shall have occurred. Provided however at least thirty (30) days prior to declaring Contractor in default hereunder Metro shall give Contractor written notice that the Facility in Metro's opinion has processed less than seventy-five percent (75%) of the Throughput Performance Standard. Contractor may within thirty (30) days of said notice either deny that the Facility has processed less than seventy-five percent (75%) of such standard or that the cause is due to Uncontrollable Circumstances or Metro Fault and state its reasons for so denying or admit that the amount Processed is less than seventy-five percent (75%) of such standard and state the measures necessary to remedy the problem and the time reasonably necessary to effect the remedy.

If Metro agrees that Contractor should attempt to remedy the problem then Metro may not issue a notice of default pursuant to Section 15.3 until the time reasonably necessary to remedy as agreed to by the Parties has expired without the problem being resolved. In no event may the time allowed to remedy the problem exceed ninety (90) days from the date that Metro furnishes notice of the deficiency to the Contractor.

If Metro and the Contractor cannot agree whether the Facility has Processed less than seventy-five percent (75%) of the standard or that the cause is due to Uncontrollable Circumstance or Metro Fault or that the problem can be remedied within a reasonable time not to exceed ninety (90) days Contractor may prior to the expiration of the thirty-day (30-day) period allowed for response refer the matter to the Independent Engineer for resolution pursuant to Article XIII and if appropriate immediately commence taking all measures necessary to remedy the problem.

If the Independent Engineer prior to the ninetieth (90th) day after the giving of notice finds that the Facility has Processed more than seventy-five percent (75%) of the Throughput Performance Standard or that the cause is due to Uncontrollable Circumstance or Metro Fault, then Metro may not declare Contractor in default.

If the Independent Engineer finds that Contractor can reasonably remedy the problem in less than ninety (90) days the Contractor shall have such time as the Independent Engineer so finds as reasonable to remedy the problem.

Otherwise Metro may declare Contractor in default if the problem has not been corrected by the end of the ninetieth (90th) day after giving notice or the period found reasonably necessary to correct the problem whichever is soonest.

Section 8.15 Operation at Less than Performance Standards

(a) Due to Uncontrollable Circumstances. If, after the Facility has passed the Performance Test, the Facility is unable to operate at the Performance Standards because of Uncontrollable Circumstances, then:

- (i) the Tip Fee shall be adjusted as appropriate, including any adjustment to reflect actual changes in the Operation and Maintenance Charges provided for in Exhibit K;
- (ii) neither Party shall be entitled to payment from the other Party for foregone Compost Product Revenues or Recovered Materials Revenues or any other form of foregone revenues or direct or indirect damages;
- (iii) the Contractor shall Process Acceptable Waste at the highest level the Facility is capable of handling under the circumstances; and
- (iv) the Contractor will be excused from the Performance Standards for Recovered Materials to the extent necessary in light of the actual levels at which the Facility is capable of Processing Acceptable Waste for a reasonable time appropriate to the circumstances.

(b) Due to Metro Fault. If, after the Facility has passed the Performance Test, the Facility is unable to operate at the performance Standards because of Metro Fault, then:

- (i) the Tip Fee shall be adjusted as appropriate, including any adjustment to reflect actual changes in the Operation and Maintenance Charge;
- (ii) the Contractor shall Process Acceptable Waste at the highest levels the Facility is capable of handling under the circumstances;
- (iii) the Contractor will be excused from the Performance Standards for Recovered Materials to the extent necessary in light of the actual levels at which the Facility is capable of Processing Acceptable Waste for a reasonable time appropriate to the circumstances; and
- (iv) Metro shall reimburse the Contractor for the Contractor's lost Recovered Materials Revenues through an increase in the Tip Fee or any other method deemed suitable by Metro.

(c) Due to Contractor Fault. If, after the Facility has passed the Performance Tests, the Facility is unable to operate at the Performance Standard due to any reason other than as set forth in Sections 8.15(a) or (b) above, then:

- (i) the Contractor shall Process Acceptable Waste at the highest levels the Facility is capable of handling under the circumstances, the provisions of Section 8.14 shall apply; and
- (ii) if the Facility produces more Residue than the Maximum Residue Guarantee the provisions of Section 7.4 shall apply; and
- (iii) if the Facility is not meeting the Material Recovery guarantee then Contractor shall be responsible for payment of the minimum Material Recovery payment as provided for in Exhibit K.
- (iv) if the Facility is not meeting any Performance Standard other than the Throughput Performance Standard or the Maximum Residue Guarantee then Metro shall have the right to declare the Contractor in default and pursue all available remedies Metro may have pursuant to Article XV. Provided however at least sixty (60) days prior to declaring Contractor in default hereunder Metro shall give Contractor written notice that the Facility in Metro's opinion is not meeting a Performance Standard and specifying the nature of the deficiency. Contractor may within thirty (30) days of said notice either deny that the Facility is not meeting the Performance Standard or that the cause is due to Uncontrollable Circumstances or Metro Fault and state its reasons for so denying or admit that the Facility is not meeting the Performance Standard and state the measures necessary to remedy the problem and the time reasonably necessary to effect the remedy.

If Metro agrees that Contractor should attempt to remedy the problem then Metro may not issue a notice of default pursuant to Section 15.3 until the time reasonably necessary to remedy as agreed to by the Parties has expired without the problem being resolved. In no event may the time allowed to remedy the problem exceed ninety (90) days from the date that Metro furnishes notice of the deficiency to the Contractor.

If Metro and the Contractor cannot agree whether the Facility is not meeting a Performance Standard

or that the cause is due to Uncontrollable Circumstance or Metro Fault or that the problem can be remedied within a reasonable time not to exceed ninety (90) days Contractor may prior to the expiration of the thirty-day (30-day) period allowed for response refer the matter to the Independent Engineer for resolution pursuant to Article XIII and if appropriate immediately commence taking all measures necessary to remedy the problem.

If the Independent Engineer prior to the ninetieth (90th) day after the giving of notice finds that the Facility is meeting the Performance Standards or that the cause is due to Uncontrollable Circumstance or Metro Fault then Metro may not declare Contractor in default.

If the Independent Engineer finds that Contractor can reasonably remedy the problem in less than ninety (90) days the Contractor shall have such time as the Independent Engineer so finds as reasonable to remedy the problem.

Otherwise Metro may declare Contractor in default if the problem has not been corrected by the end of the ninetieth (90th) day after giving notice or the period found reasonably necessary to correct the problem whichever is soonest.

Section 8.16 Operations Staff; Operation and Maintenance Manual

(a) Operations Staff. The Contractor shall, at its own expense, train the Plant Manager and other necessary operating staff of the Facility. The initial Plant Manager shall be hired at least sixty (60) days prior to the start of the Performance Test, and shall be trained in operations and maintenance of a facility utilizing the DANO Technology similar to the Facility, so as to be proficient in the operations of the Facility at least thirty (30) days prior to the start of the Performance Test. The Contractor shall inform Metro of the identity of the person or persons serving from time to time as Plant Manager, and of the telephone numbers or other means by which such person(s) may be contacted at the Facility Site. The Contractor shall also inform Metro of the identity of the official of RWDS with senior supervisory responsibility for the Facility, and of the telephone number or other means by which such person may be contacted.

(b) Operations and Maintenance Manual. At least sixty (60) days before the start of Performance Test, the Contractor shall provide a draft Operation and Maintenance Manual to Metro. The

Contractor shall provide Metro with the final Operation and Maintenance Manual at least thirty (30) days before the scheduled date for the Performance Test. The Contractor shall discuss in good faith with Metro any aspect of the Operation and Maintenance Manual.

Metro shall have the right to approve all sampling, testing and measurement procedures contained in the Operation and Maintenance Manual, which approval shall not be unreasonably withheld or delayed. Notwithstanding any such review and approval or discussion with Metro, the Operation and Maintenance Manual shall remain the responsibility of the Contractor. Neither the review nor comment upon, nor the failure of Metro to comment upon, the Operation and Maintenance Manual shall relieve the Contractor of any of its responsibilities under this Agreement, nor shall any Metro review or comment or failure to comment be deemed to constitute representation by Metro that operating the Facility pursuant to the Operation and Maintenance Manual will cause the Facility to be in compliance with the Agreement or Applicable Law, or impose any liability upon Metro.

If this Agreement is terminated due to a Contractor Event of Default, the Contractor shall deliver to Metro the Operation and Maintenance Manual, or any existing materials which would be included in the Operation and Maintenance Manual, for use in connection with the operation and maintenance of the Facility; provided, however, that Metro shall comply in all respects with the provisions of Section 8.19 of this Agreement, to the extent that such Section relates to the use of the Operation and Maintenance Manual.

Section 8.17 Regulatory Requirements

The Contractor shall not be deemed to have breached its obligation to at all times operate the Facility in compliance with and to otherwise comply in all respects with the requirements of Applicable Law if the Contractor is contesting the Applicable Law in good faith by appropriate proceedings conducted with due diligence and the Applicable Law permits continued operation pending a final resolution of such contest.

Section 8.18 Business of the Contractor

With respect to the Facility, the Contractor shall not engage in any business or enterprise at the Facility Site except the design, construction, equipping, testing, operation and management of the Facility, and activities reasonably ancillary thereto, including the sale or other disposition of Compost and Recovered Materials.

Section 8.19 Confidentiality; Covenants of Metro

(a) Metro recognizes and acknowledges the confidential and proprietary nature of the DANO Technology, including, but not limited to, the information contained in proposals, the information regarding the operation of the Facility, and the information set forth in the Operation and Maintenance Manual, and shall not disclose such confidential information to others. Metro agrees to execute and deliver the statement of confidentiality in the form set forth in Exhibit Q hereto, signed by an Authorized Representative of Metro, which shall state that (i) the confidential information being revealed will not be passed to parties outside of Metro, (ii) the confidential information will not be left in any place where unauthorized persons might have access to it, and (iii) the information will not be used to help or benefit anyone who will be in competition with the Contractor or the licensors of the DANO Technology to the Contractor.

(b) Except as provided in (C) below, at any time during and after the term of this Agreement, Metro shall not, in any manner whatsoever, either directly or indirectly, divulge, disclose, or communicate to any person, partnership, firm, association, corporation, or other entity, or use for the personal benefit of such party or otherwise, any information relating to the DANO Technology in the possession of, belonging, or concerning Metro. Upon the termination or expiration of this Agreement, Metro shall return to the Contractor all information relating to the DANO Technology, and all materials, documents, drawings, and copies relating thereto. Without regard to whether any or all the foregoing matters would be deemed confidential, material, or important, the parties hereto stipulate that as among them, the same are important, material, and confidential and gravely affect the goodwill and effective and successful conduct of the businesses of the Contractor and its subsidiaries and Affiliates. This provision shall not limit Metro's rights to have all DANO related rights of Contractor necessary to operate the Facility assigned to Metro pursuant to the terms of Article III or Article XV of this Agreement.

(c) Metro acknowledges and agrees that all materials, documents, drawings and copies relating to the DANO Technology, included, but not limited to, the Operation and Maintenance Manual, constitute trade secrets, as such term is defined in ORS 192.501(2), as now in effect or as hereinafter amended, and as such, are and should be exempt from public disclosure under ORS 192.401 to 192.505. Metro also acknowledges and agrees that all materials, documents, drawings and copies relating to the DANO Technology, included, but not limited to, the Operation and Maintenance Manual, have been submitted to Metro in confidence in accordance with ORS 192.502(3), as now in effect or as hereinafter amended, and as such, are and should be exempt from

public disclosure under ORS 192.401 to 192.505. Metro shall mark all such materials as confidential, shall keep all such materials separate and apart from its other records and materials, and shall exert all other reasonable efforts required to exempt such materials from disclosure to the public under ORS 192.401 to 192.505.

(d) In furtherance of the foregoing, Metro agrees and acknowledges that (i) Metro shall acquire no ownership of the DANO trademark, the DANO design, the DANO patents, the DANO drawings, and the DANO know-how by or under this Agreement; and (ii) Metro will not contest or challenge the proprietorship by DANO to said rights. This provision shall not limit Metro's rights to have all DANO related rights of Contractor necessary to operate the Facility assigned to Metro pursuant to the terms of this Agreement.

(e) In the event the operation of the Facility by the Contractor is terminated pursuant to the terms of this Agreement, and the operation of the Facility is continued by Metro, Metro shall pay all royalties due and payable under the terms of the applicable licensing agreement or agreements entered into by the Contractor for the use of the DANO Technology.

ARTICLE IX. PAYMENTS

Section 9.1 Tip Fee

Metro shall, unless this Agreement explicitly provides otherwise, pay to Contractor a Tip Fee for each Ton of Acceptable Waste, other than Rejected Waste, that Metro delivers or causes to be delivered to the Facility, and that is Processed at the Facility (or otherwise disposed of by the Contractor as expressly permitted under this Agreement). The Tip Fee shall be calculated and adjusted from time to time in accordance with the provisions of Exhibit K.

Section 9.2 Put or Pay Obligation After the Commercial Operation Date

(a) As long as the Facility is available to Process the Minimum Annual Throughput Guarantee of Acceptable Waste as provided in Article VIII, or the Facility is not Processing Acceptable Waste due to Metro Fault or Uncontrollable Circumstances, then, regardless of whether Metro has delivered or caused to be delivered to the Facility 185,000 Tons of Acceptable Waste, Metro shall be obligated to pay to the Contractor the Monthly Tip Fee as provided in Exhibit K.

(b) To the extent that the fees paid during a particular Annual Billing Period are less than the Tip Fee for such Annual Billing Period, Metro shall pay to Contractor the Tip Fee unless Metro shall be excused from making such payment do to failure of the Facility to process the Minimum Annual Tonnage for reasons other than Uncontrollable Circumstance or Metro Fault.

Metro hereby agrees that with respect to any Annual Billing Period during which the Facility has Processed less than 185,000 Tons of Acceptable Waste because of Metro Fault or Uncontrollable Circumstances, Metro shall pay to the Contractor the Tip Fee for such Annual Billing Period provided in Exhibit K hereto.

ARTICLE X. DISTRIBUTION OF COMPOST AND RECOVERED MATERIALS

Section 10.1 Compost Product and Recovered Materials Sales Contracts

The Contractor shall be solely responsible for the negotiation and implementation of all contracts, agreements and other arrangements necessary or appropriate to the sale and distribution of Compost Product and Recovered Materials.

The Contractor shall provide Metro with timely notice of the negotiations relating to each contract, agreement or arrangement relating to the sale to any one customer of more than five percent (5%) of the Compost Product produced during any one Contract Year or ten percent (10%) of the Recovered Materials from the Facility recovered during any one Contract Year, the parties thereto and the terms and conditions thereof. Promptly upon receipt thereof by the Contractor, the Contractor shall provide Metro, a copy of the final, definitive version of each such contract, agreement or arrangement in the form in which it was executed by the parties thereto.

In the event that any arrangement relating to the sale or distribution of more than five percent (5%) of Compost Product produced during any one Contract Year or ten percent (10%) of the Recovered Materials recovered during any one Contract Year does not take the form of a written contract or agreement, the Contractor shall provide Metro with a detailed memorandum describing such arrangement as the same is being negotiated or otherwise formulated and, not less than five days prior to the time such arrangement is to be implemented, a final detailed memorandum describing such arrangement and the terms upon which it will be implemented.

Section 10.2 Sales of Compost Product

The Contractor agrees to hire a compost sales person within six (6) months of the execution and delivery by the parties of this Agreement. Contractor agrees to use its best efforts to market and sell the Compost Products. The failure of Contractor to market, sell or otherwise dispose of Compost Product shall be Contractor's responsibility unless due to Metro Fault or Uncontrollable Circumstances.

Contractor's sales and disposal of Compost Product will be subject to Metro's regulatory powers and authority. Metro's exercise of the compost marketing regulatory powers specified herein shall not constitute Metro Fault or an Uncontrollable Circumstance pursuant to the terms of this Agreement, but to the extent the compost marketing regulations adopted by Metro are more restrictive than those set forth in this Section 10.2, such Metro action shall constitute a Change in Law under this Agreement.

Compost Product sales or disposal will be subject to the following restrictions:

(a) Sales for pick up by customers at the Facility will be at a price equal to or greater than the Prevailing Price for a Composted Waste Product all as determined by Metro.

(b) Sales or deliveries for bare root nursery, forest seedling nursery, hydro mulching or Christmas tree growing uses may be made by Contractor without prior Metro approval but shall otherwise be subject to the terms and conditions of Section 10.1 of this Agreement.

(c) Sales or deliveries for residential, commercial, industrial or governmental landscaping uses may be made only if Metro determines that: (i) the price to be charged by Contractor is equal to or greater than the Prevailing Price for any Composted Waste Product; and (ii) the sale of the Compost Product will not have an adverse impact on sales of other Composted Waste Products.

(d) All other sales, deliveries or agreements for sales or deliveries to any one user or location that will exceed five percent (5%) of the annual production of Compost Product of the Facility in any one contract year shall require the prior written consent of Metro. Metro shall approve such sales if the Director of Metro's Department of Solid Waste or other person designated by the Executive Officer shall determine that (i) such sales or deliveries will not have an adverse impact on Metro's provision of a system for the economical disposal of solid waste which includes other Composted Waste Products, or (ii) the location of the place of ultimate use of the Compost Product is located

beyond a radius of fifty (50) miles from a point of origin located at the intersection of Burnside Street and Front Avenue in the City of Portland, Oregon.

(e) Contractor shall be allowed to include as a Pass Through Cost the costs of transportation (up to the maximum amount provided for in Exhibit K) for all sales or deliveries allowed pursuant to subsection 10.2(b) or as approved by Metro pursuant to subsection 10.2(d).

(f) Compost Product sold by the Contractor in bags for resale by third parties shall be subject to the same terms and conditions as sales and deliveries described in Section 10.2(d) of this Agreement.

(g) Contractor shall annually report to Metro its marketing plans. Metro shall review with Contractor the annual marketing plan. To the maximum extent possible Metro and Contractor shall reach concurrence on targeted markets which Contractor shall attempt to utilize for the sale or disposal of Compost Product.

Any sales, deliveries or agreements which are subject to Metro approval pursuant to Section 10.2(d) shall be reviewed by Metro on an expedited basis to the extent they are consistent with the annual marketing plan concurred in by Metro. If Contractor requests approval of a sale, delivery or agreement pursuant to Section 10.2(d) Metro shall approve or disapprove within fifteen (15) days of notice thereof. Metro's action shall be taken by its Solid Waste Director or other official designated by the Executive Officer. Failure of Metro to disapprove of any such sale, delivery or agreement within this fifteen (15) day period shall constitute approval.

Any information furnished by Contractor to Metro relating to the compost marketing shall to the maximum extent possible consistent with Applicable Law be treated as confidential records and shall not be disclosed to third parties without Contractor's consent.

(h) All contracts for the transfer of Compost Product entered into by Contractor prior to June 1, 1989, are deemed approved by Metro pursuant to Section 10.2(d) of this Agreement.

Section 10.3 Storage of Excess Compost Product

During the Term of this Agreement, the Contractor will provide storage for such undistributed Compost Product in accordance with Applicable Law at the Facility or other sites which are either owned or leased by the Contractor, or to which the Contractor has access. The storage capacity for undistributed Compost Product to be provided by the Contractor shall consist of the following:

(a) During the entire Term of this Agreement, the Contractor will make available on the Facility Site storage capacity for up to 32,000 Tons of Compost Product. The Contractor agrees not to store more than this amount of Compost Product on the Facility Site.

(b) In addition to the storage capacity at the Facility Site as provided in subsection (a) above and subsection (c) below, during the first (1st) through sixtieth (60th) months following the Commercial Operation Date (with the first such month beginning with the month following the Commercial Operation Date) the Contractor shall make its Killingsworth Fast Disposal Landfill site available to store 100,000 Tons of Compost Product in the aggregate.

(c) In addition to the storage capacity provided for in subsections (a) and (b) above, during the first through sixtieth (60th) months following the Commercial Operation Date, the Contractor shall make the Waybo Pit, located at 7800 N.E. Killingsworth, Portland, Oregon, available to store 200,000 Tons of Compost Product in the aggregate; provided that storage capacity at such Waybo Pit shall only be required to be made available if the Contractor receives the necessary permits to operate such property as a solid waste landfill or if, in accordance with Applicable Law, such property can be used for the purpose of storing Compost Product without being permitted to operate as a solid waste landfill.

The Contractor, at its own expense, shall use its best efforts to obtain all permits required in order to operate said Waybo Pit as a solid waste landfill or to take such other actions as may be necessary or appropriate in order to utilize this property for the storage of Compost Product without such property being permitted to operate as a solid waste landfill. If Contractor is unable to utilize said Waybo Pit for the purpose of storing all or any portion of the Compost Product for which the Contractor is required to provide storage under this subsection (c), the Contractor shall provide, or obtain the right to use, other property suitable for storing Compost Product in the amounts and during the years provided for in this subsection (c).

(d) In addition to the storage capacity at the Facility Site as provided in subsection (a) above, during the sixty-first (61st) through the one hundred twentieth (120th) month following the Commercial Operation Date the Contractor shall provide property acceptable to Metro that will provide storage capacity for Compost Product as follows:

- (i) If during the first through sixtieth (60th) month following the Commercial Operation Date, the aggregate amount of Compost Product being stored at any one time pursuant to subsections (a), (b)

and (c) above did not exceed 100,000 Tons, then the Contractor shall provide property with a storage capacity of 100,000 Tons of Compost Product.

(ii) If during the first through sixtieth (60th) month following the Commercial Operation Date, the aggregate amount of Compost Product being stored at any one time pursuant to subsections (a), (b) and (c) above exceeded 100,000 Tons but did not exceed 200,000 Tons, then the Contractor shall provide property with a storage capacity of 200,000 Tons of Compost Product.

(iii) If during the first through sixtieth (60th) month following the Commercial Operation Date, the aggregate amount of Compost Product being stored at any one time pursuant to subsections (a), (b) and (c) above exceeded 200,000 Tons, then the Contractor shall provide property with a storage capacity of 500,000 Tons of Compost Product.

(e) During the one hundred twenty-first (121st) through the two hundred fortieth (240th) month following the Commercial Operation Date, the Contractor shall provide sites for the storage of Compost Product in an amount equal to the maximum number of Tons of Compost Product which were stored at any one time during the first through tenth years following the Commercial Operation Date pursuant to subsections (a), (b), (c) and (d) above.

ARTICLE XI. INSURANCE AND INDEMNIFICATION

Section 11.1 Required Insurance

The Contractor shall obtain and maintain, or cause to be obtained and maintained, to the extent reasonably commercially available, all Required Insurance and with such coverage and deductible limits as are, in light of the various risks to be insured against, customary and prudent and reasonably commercially available for operations similar to those to be conducted at and in connection with the Facility and reasonably acceptable to the Contractor and Metro. The Contractor may, as an alternative, engage in a program of self-insurance, with reasonable reserves set aside by the Contractor. In the event Metro and the Contractor cannot agree on the types or amounts of coverage or the deductible limits of any Required Insurance, such dispute shall be resolved pursuant to the dispute resolution procedures set out in Article XIII.

Section 11.2 Delivery of Policies; Certain Required Provisions; Separate Insurance; Claims

(a) Delivery of Policies. The Contractor shall deliver to Metro copies of all policies and certificates of insurance for Required Insurance and any policy amendments and policy renewals. Each policy must provide for thirty (30) days' prior written notice of termination or cancellation or of any change in coverage or deductibles to be given by the insurer to Metro.

(b) Required Provisions. Except as may otherwise be provided in Section 11.1, all Required Insurance shall be carried with responsible insurance companies of recognized standing which are authorized to do business in Oregon and whose claims paying ability is rated not less than "A" by A.M. Best Company, Inc. Required Insurance may be effected by endorsement of blanket insurance and umbrella policies.

Section 11.3 Indemnification

(a) Contractor's Indemnification of Metro. Subject only to the limitations hereinafter set forth in Section 11.3(c) hereof, the Contractor covenants and agrees that, to the maximum extent permitted by law, it will indemnify Metro against and hold Metro harmless from any and all liabilities, actions, damages, claims, demands, judgement, losses, costs, expenses, suits and actions, including but not limited to attorneys' fees and expenses at trial and on appeal, relating to or resulting from:

(i) any injury to or death of any person or persons, or loss of or damage to property caused or alleged to be caused by the Contractor or any of its officers, agents, employees, Subcontractors (or any officer, agent or employee of any Subcontractor), or any person under the control of or alleged to be under the control of at acting at the direction of the Contractor or any Subcontractor, arising in connection with or as a result of:

- (A) this Agreement;
- (B) the performance by the Contractor of its obligations hereunder;
- (C) the use or operation of the Facility by the Contractor;
- (D) the marketing, sale, distribution, storage, transportation or use of Compost Product or Recovered Materials by the Contractor; or

- (E) the condition of the Facility or the Facility Site under the management of the Contractor between the Notice to Proceed and the termination of the term of this Agreement;
- (ii) any breach of any expressed or implied warranty arising in connection with any sale of the Facility to a third party;
- (iii) any condition of the Facility Site, now existing or arising during the term of this Agreement, relating to hazardous or toxic substances (except to the extent such condition is caused by Hazardous Waste or Unacceptable Waste delivered to the Facility Site by waste haulers) or any other condition, now existing or arising during the term of this Agreement (except to the extent such condition is caused by Hazardous Waste or Unacceptable Waste delivered to the Facility Site by waste haulers) which, under Applicable Law, in appropriate administrative or judicial proceedings, is determined to be unsafe;
- (iv) an allegation of infringement, violation or conversion of any patent, license, proprietary right or other similar interest, in connection with the operation of the Facility by the Contractor or the design, technology, processes, machinery or equipment used at the Facility by the Contractor; or
- (v) any loss of the federal tax-exempt status of the interest on any Bonds which were issued with the intent that the interest thereon be and remain excludable for federal income tax purposes from the gross incomes of the owners thereof.

Notwithstanding anything expressed or implied herein to the contrary and in addition to the indemnity and hold harmless agreements of the Contractor set forth above but without regard to any expressed or implied limits on the Contractor's indemnity and hold harmless agreement as set forth above, the Contractor will indemnify Metro against and hold Metro harmless from any and all penalties, fines and charges of any federal, state or local government having jurisdiction over the Facility, the operations at the Facility or the sale, distribution, storage or disposal of Compost Product or Recovered Materials and any and all liabilities, actions, damages, claims, demands, judgement, losses, costs, expenses, suits and actions, including but not limited to attorneys' fees and expenses at trial and on appeal, arising from any violation or alleged violation of Applicable Law by the Contractor in connection with or as a result of the

operations at the Facility or the sale, distribution, storage or disposal of Compost Product or Recovered Materials or otherwise relating to this Agreement or the performance of its obligations hereunder.

(b) Metro's Indemnification of Contractor. Subject only to the limitations hereinafter set forth in Section 11.3(c), Metro covenants that, to the maximum extent permitted by law, it will indemnify the Contractor against and hold the Contractor harmless from any and all liabilities, actions, damages, claims, demands, judgement, losses, costs, expenses, suits and actions, including but not limited to attorneys' fees and expenses at trial and on appeal, relating to or resulting from any injury to or death of any person or persons, or loss of or damage to property caused or alleged to be caused by Metro or any of its officers, agents, employees, or any person under the control of or alleged to be under the control of or acting at the direction of Metro, arising in connection with or as a result of the performance by Metro of its obligations hereunder. Provided that Metro's liability pursuant to the foregoing indemnity and hold harmless provision shall be secondary to any insurance proceeds that may be recovered by Contractor from any insurance coverage:

- (i) maintained by Metro; or
- (ii) under which Metro is insured in connection with this Agreement.

(c) No Indemnification for Negligent Acts. No Party shall be required to indemnify the other Party or hold the other Party harmless pursuant to the provisions of this Section 11.3 with respect to any loss, damage or claim due to the negligence of such other Party.

(d) Contribution in Case of Joint or Concurrent Negligence. In case of joint or concurring negligence of the Parties giving rise to a loss or claim against either or both of them, each Party shall have full rights of contribution against the other.

(e) Notice of Claims; Defense and Settlement. Any party entitled to indemnification hereunder (the "Notifying Party") shall notify the indemnifying party (the "Responding Party") within ten (10) days of the Notifying Party's receipt of written notice from any third party of any act, omission or occurrence with respect to which the Notifying Party intends to seek indemnification in accordance with this Agreement and, if requested by the Responding Party, shall also supply to the Responding Party all records, data, contracts and documents reasonably related to such third party claim to enable the Responding Party to evaluate such claim for purposes hereof. If the Responding Party replies in writing to the Notifying Party within twenty (20) days from the date of such notice that it will

undertake the defense of the Notifying Party and will hold the Notifying Party harmless with respect to such claims, then no additional attorneys' fees incurred by the Notifying Party in its own defense shall be compensable as a claim entitled to indemnity, unless (a) the Responding Party has agreed to pay such fees and expenses, (b) the Responding Party shall have failed to assume the defense of such claim or has failed to employ counsel reasonably satisfactory to the Notifying Party, or (c) the named parties in any action or proceeding relating to such claim (including any impleaded parties) include both the Responding Party and the Notifying Party, and such Notifying Party has been advised by its counsel that the Notifying Party has a conflicting interest from the Responding Party or that there may be one or more legal defenses available to the Notifying Party which are different from or additional to those available to the Responding Party. The Notifying Party will reasonably cooperate in providing information and testimony to assist in the defense of the matter, but all out-of-pocket costs thereof shall be a part of the indemnified amounts for which the Responding Party shall hold the Notifying Party harmless. Control of the defense of the claims shall be the right and responsibility in this case of the Responding Party, which shall have authority to contest, compromise or settle the matter in its sole discretion.

In the event the Responding Party replies in writing within the said twenty (20) days that it accepts responsibility for the indemnified claim regarding the matter in question but does not desire to take an active role in the defense of said matter, then alternatively, the Responding Party may consent to the Notifying Party's selecting an attorney to defend the matter who is satisfactory to the Responding Party, such consent and such satisfaction with the selection of such attorney to be evidenced in writing. In such case, however, no matter will be settled or compromised without the written consent of the Responding Party; further, at any time the Responding Party may elect to assume the active control of the matter, including the replacement of the selected counsel by other counsel satisfactory solely to it, and thereafter may consent, settle or compromise the case in its sole discretion.

If, on the other hand, the Responding Party replies to the Notifying Party within twenty (20) days from the date of such notice, but denies its responsibility to indemnify and hold the Notifying Party harmless with respect to such claim, both parties shall attempt to agree upon a mutually satisfactory attorney to represent them and agree upon who shall control the defense of the claim and has the authority to approve any proposal, settlement or compromise. If no such agreement can be reached, or if the Responding Party does not reply to the Notifying Party within twenty (20) days from the date of such notice, each party may designate its own attorney, whose reasonable fees shall be compensable as an indemnified claim to the Notifying Party.

Whether or not any such agreement can be reached or the Responding Party does or does not reply, each party shall reasonably cooperate in providing information and testimony to assist in the defense of the matter, and the costs thereof (including out-of-pocket expenses) shall be a part of the claims which shall be paid by the party who is later determined to be responsible therefor under the assumptions of liability and other provisions for indemnification under this Agreement. Any indemnification in this Agreement shall include an indemnification of the respective officers, directors, employees, agents, shareholders and successors and assigns of the Notifying Party.

(f) Beneficiaries of Indemnification Provisions. The foregoing indemnification and hold harmless provisions are for the sole and exclusive benefit and protection of Metro, the Contractor, and the Affiliates of the Contractor, and their respective officers, officials, agents and employees, and are not intended, nor shall they be construed, to confer any rights on or liabilities to any person or persons other than Metro and the Contractor and their respective officers, officials, agents and employees.

ARTICLE XII. CONTRACT ADMINISTRATION

Section 12.1 Books and Records; Reports

For the purpose of enabling Metro to determine the Contractor's compliance with the provisions of the Agreement:

(a) Books and Records. The Contractor shall maintain all books, records and accounts necessary to record all matters affecting the Tip Fees or other amounts payable by or to Metro under this Agreement, including all materials, machinery, equipment, labor and other additional matters for which adjustments to the Tip Fee are made pursuant to Exhibit K hereof or other provisions of this Agreement, and all records pertaining to the marketing, sale, distribution, storage or disposal of Compost Product and Recovered Materials.

All such books, records and accounts shall be maintained in accord with generally accepted accounting principles, shall accurately, fairly and in reasonable detail reflect all the Contractor's dealings and transactions under this Agreement and shall be sufficient to enable those dealings and transactions to be audited in accord with generally accepted auditing standards.

For purposes of enabling Metro to verify the computation of the Tip Fee and other amounts payable by or to Metro hereunder, Metro and any agent or agents of Metro selected by it for such

purpose shall have the right, from time to time upon five days notice to the Contractor, to examine, inspect, audit and copy all such books, records and accounts that are related to the Facility. The Contractor shall fully cooperate with Metro and its agent or agents in the conduct of any and all such examinations, inspections, audits and copying of such books, records and accounts by promptly:

- (i) making such books, records and accounts available to Metro and its agent or agents;
- (ii) supplying Metro and its agent or agents with such supporting documentation as they shall request in connection therewith, including without limitation any audits, auditor's notes and audit letters whether in the possession of the Contractor or any auditor or accountant retained by or on behalf of the Contractor; and
- (iii) instructing and ensuring that all officers, agents (including without limitation any outside accountants or auditors retained by or on behalf of the Contractor) and employees of the Contractor are available to answer any questions concerning or discuss any information contained or referred to in or omitted from such books, records and accounts.

All such books, records and accounts shall be kept by the Contractor for at least seven years, except for drawings, plans and records relating to the physical plant of the Facility or the operation thereof, which Contractor shall keep for at least three years following the expiration of the Term (or any longer period required under Applicable Law).

(b) Contractor Reports to Metro. In addition to any reports or other documents, materials or information required to be provided from time to time by the Contractor to Metro pursuant to any other provisions of this Agreement, the Contractor shall provide Metro with such reports and information at the times required by this Agreement or as otherwise agreed to by the Parties.

Section 12.2 Metro and Consulting Engineer Access

Metro and its agents, licensees or invitees, the Consulting Engineer and representatives of governmental regulatory agencies may, upon proper identification, visit or inspect the Facility or Facility Site at any reasonable time during the period of acquisition, construction and installation and Performance Test of the Facility and during the Term of this Agreement after giving the Contractor reasonable advance notice; provided,

however, that the Metro Authorized Representative and the Consulting Engineer may inspect the Facility and the Facility Site during regular business hours without notice. Any such visits shall be conducted in a manner that does not cause unreasonable interference with the Contractor's operations. The Contractor shall have reasonably available "as built" plans for the Facility for inspection by Metro and its Authorized Representatives and its Consulting Engineer. The Contractor may require any Person on the Facility Site, whether pursuant to this Section 12.2, in connection with the Performance Test or otherwise, to comply with its reasonable safety rules and regulations.

Section 12.3 Representatives and Notices

(a) Change of Authorized Representatives. Metro and the Contractor may change their respective Authorized Representatives upon five (5) Business Days' written notice to the other Party.

(b) Manner of Giving Notices. Except as may otherwise be expressly provided hereunder, all approvals, requests, reports, notices, communications or other materials or information required or permitted to be made or given by a Party to the other Party hereunder shall be deemed to have been given or made only if the same is reduced to writing and delivered, either personally or by means of the United States Postal Service (registered or certified mail, postage prepaid), to the Metro Authorized Representative or the Contractor Authorized Representative, as the case may be, at their respective addresses as set forth herein; provided that with respect to any notice or other communication required or permitted to be given hereunder and which, under the applicable provisions of this Agreement, the Authorized Representative of the recipient thereof is required to give a receipt therefor, such notice or other communication shall only be deemed to have been duly given or made if hand delivered to the recipient's Authorized Representative.

(c) When Notices Deemed Given. For all purposes of this Agreement, any such approval, request, report, notice, communication or other material or information which is delivered by means of the United States Postal Service as aforesaid shall be deemed to have been delivered as of the third Business Day next following the date of the postmark thereof (if mailed from Portland, Oregon), or as of the fifth Business Day following the date of the postmark thereof (if mailed outside of Portland, Oregon but inside the United States of America); provided that with respect to any notice or other communication required or permitted to be given hereunder and which, under the applicable provisions of this Agreement, the Authorized Representative of the recipient thereof is required to give a receipt therefor, such notice or other communication shall only be deemed to have been duly given or made when the same has been hand delivered to

the recipient's Authorized Representative. Provided that any notice to Credit Provider shall be deemed delivered upon the receipt thereof by the Credit Provider.

(d) Notice Addresses. All notices, requests and other communications to either party hereunder shall be in writing and shall be given to such party at the following address, or such other address as such party may hereafter specify for the purpose by notice to the other party:

If to Metro, at:

Metropolitan Service District
2000 S. W. First Avenue
Portland, OR 97201
Attention: Director of Solid Waste

and to

Credit Provider's Engineer

with copies of any notice, request or other communication regarding any (i) Dispute, (ii) Technical Dispute, (iii) request for any necessary consent or waiver, (iv) exercise of an option under this Agreement, (v) right of first refusal under this Agreement, (vi) occurrence or alleged occurrence of a Contractor Event of Default, or any event which with the passage of time would give rise to a Contractor Event of Default, or (vii) occurrence or alleged occurrence of a Metro Event of Default, or any event which with the passage of time would give rise to a Metro Event of Default, to:

Metropolitan Service District
2000 S. W. First Avenue
Portland, OR 97201
Attention: General Counsel

and

Credit Suisse
100 Wall Street
New York, NY 10005
Attention: Public Finance Department

and

Latham and Watkins
Attorneys at Law
701 B Street, Suite 2100
San Diego, CA 92101
Attention: Kelley Gale

If to Contractor, at:

Riedel Environmental Technologies, Inc.
4611 N. Channel Avenue
P.O. Box 5007
Portland, OR 97208
Attention: Corporate Secretary

and to

Credit Provider's Engineer

with copies of any notice, request or other communication regarding any (i) Dispute, (ii) Technical Dispute, (iii) request for any necessary consent or waiver, (iv) exercise of an option under this Agreement, (v) right of first refusal under this Agreement, (vi) occurrence or alleged occurrence of a Contractor Event of Default, or any event which with the passage of time would give rise to a Contractor Event of Default, or (vii) occurrence or alleged occurrence of a Metro Event of Default, or any event which with the passage of time would give rise to a Metro Event of Default, to:

Perkins Coie
111 SW Fifth Avenue, Suite 2500
Portland, Oregon 97204

and

Credit Suisse
100 Wall Street
New York, NY 10005
Attention: Public Finance Department

and

Latham and Watkins
Attorneys at Law
701 B Street, Suite 2100
San Diego, CA 92101
Attention: Kelley Gale

ARTICLE XIII. DISPUTE RESOLUTION

Section 13.1 Dispute Resolution

(a) Good Faith Efforts to Resolve Disputes. The Parties shall attempt to resolve any Dispute by good faith negotiations to resolve the same to the mutual satisfaction of both Parties.

(b) Procedure for Initiating Dispute Resolution Processes. Whenever a Party desires to initiate the dispute resolution process set forth in this Article XIII, it shall do so by giving a Dispute Notice to the other Party. Upon delivery of any Dispute Notice, the Authorized Representative of the recipient thereof shall deliver to the Party giving such Dispute Notice a signed and dated receipt therefor, which receipt shall serve as conclusive evidence of the date upon which such Dispute Notice was delivered. Within five (5) days after the delivery of a Dispute Notice, the parties shall meet for the purpose of negotiating a resolution of the related Dispute.

(c) Technical Disputes During Design and Construction. If, within twenty (20) days after the delivery of a Dispute Notice, the parties are unable to negotiate a mutually satisfactory resolution of the related Dispute and such Dispute:

- (i) is a Technical Dispute arising during the course of design, acquisition, construction and installation of the Facility;
- (ii) such Technical Dispute would result in an increase in the Facility Price of less than \$50,000; and
- (iii) the effect of such a change, when aggregated with all other changes made under this subsection (c), does not total more than \$50,000 in the aggregate; then the Contractor shall make such change; provided that should such change, when aggregated with all other changes made under this subsection (c), total less than \$50,000 in the aggregate, the Contractor shall be solely liable to pay such amount and shall not be entitled to directly or indirectly recover from Metro any such excess either through an increase in the Facility Price, the Tip Fee or otherwise.

If any change that is the subject of any Technical Dispute, when added to other changes made to the Facility Price pursuant to this subsection (c), would result in an aggregate total change in the Facility Price of more than \$50,000 but less than \$150,000, such Technical Dispute shall be submitted for resolution by a technical opinion of an Independent Engineer, selected from the predesignated list of engineers set forth in Exhibit J to this Agreement, or selected from time to time by the Parties in writing signed by the Authorized Representatives of both Parties. The decision of the Independent Engineer shall be conclusive and binding on the Parties and specifically enforceable in any court of competent jurisdiction.

If any change that is the subject of any Technical Dispute, when added to other changes made to the Facility Price pursuant

to this subsection (c), would result in an aggregate total change in the Facility Price of more than \$150,000, such Technical Dispute shall be submitted for dispute resolution in accordance with the provisions set forth in Section 13.2 hereof.

Section 13.2 Arbitration

(a) If any Dispute (other than a Technical Dispute subject to the dispute resolution provisions of Section 13.1(c)) is not resolved by negotiations of the Parties within sixty (60) days after the date of delivery of the Dispute Notice, either Party shall have the option to submit such Dispute for resolution pursuant to arbitration as provided in this Section 13.2 by delivering a request for final and binding arbitration to the other Party (an "Arbitration Request").

(b) Each arbitration proceeding pursuant to this Section 13.2 shall be governed by and conducted in accordance with the following provisions:

- (i) The arbitration shall take place in Portland, Oregon, and shall be conducted in accordance with the Rules of Arbitration of the AAA. The appointing authority shall be such group as the Parties may mutually agree upon within five (5) days of the date of the Arbitration Request or, in the absence of such mutual agreement, the ASP, or if the ASP is not available, the appointing authority of the AAA.
- (ii) Each Party shall choose one arbitrator from a panel of persons qualified with ASP or AAA and knowledgeable in the area which is the subject of the dispute in question, such selection to be made within fifteen (15) days of the Arbitration Request. If the issue involves a question regarding insurance then the Parties agree that the Arbitrator or Arbitrators shall be chosen from those particularly experienced in such matters. The two arbitrators so chosen shall appoint the third. If the two arbitrators are unable to agree on the third arbitrator within fifteen (15) days following the selection of the second arbitrator, the third shall be appointed forthwith by the ASP.
- (iii) In arriving at their decision, the arbitrators shall consider the pertinent facts and circumstances and be guided by the terms and conditions of this Agreement, as applicable. If a resolution of the Dispute is not found in the terms and conditions of this Agreement, the arbitrators shall apply the principles of the laws

of the State of Oregon. The arbitration award shall be considered an Oregon award. The decision and award of the arbitrators shall be final and binding.

- (iv) In making any award, the arbitrators shall, if possible, designate the Party which is the prevailing party (the "Prevailing Party") and the Party which is the non-prevailing party (the "Non-prevailing Party") with respect to the Dispute in question. The arbitration fees and costs, including reasonable attorneys' fees for the Prevailing Party, shall be borne by the Non-prevailing Party; provided that if the arbitrators do not or are unable to designate a single Prevailing Party with respect to the Dispute in question, then and in such event the arbitrators, in making the award, shall determine the proportion of the costs, expenses and attorneys' fees incurred in connection with such arbitration which are to be borne by each Party.
- (v) Any award involving the payment of any sums by one Party to the other (other than any payments relating to the costs, expenses and attorneys' fees incurred in connection with such arbitration or any payments to be made in the future by one Party to the other pursuant to the terms of this Agreement) shall include interest from the date of any breach or other violation of this Agreement or, if the award does not specify the date of such breach or other violation, from the date of the award. The arbitrators shall also fix an appropriate rate of interest from the date of the breach or other violation to the date when the award is paid in full which rate shall be the prime commercial lending rate published by the United States National Bank of Oregon at its principal office in Portland, Oregon, for ninety (90) day loans for responsible and substantial commercial borrowers.
- (vi) In the course of arbitration, the terms and provisions of this Agreement which are then in effect shall be continuously executed by both parties, except to the extent that any such terms and provisions are the subject matter of the pending arbitration.
- (vii) All notices to be given in connection with the arbitration shall be in writing. All notices shall be sent by registered or certified mail,

return receipt requested to the addresses of the parties as stated in the notice provisions of the Agreement as amended from time to time.

ARTICLE XIV. DISADVANTAGED BUSINESS PROGRAM

In performing its obligations under this Agreement, the Contractor shall at all times and in all respects comply, and cause all prime Subcontractors to comply, with the requirements of the Metro Disadvantaged Business Program under Section 2.04.150(c) of the Metro Code, unless exempted therefrom by its terms, by making good faith efforts as defined in Metro Code Section 2.04.160(b) to achieve DBE/WBE participation in the same goal amount as the current annual goal established by Metro for that contract type for each subcontract let by Contractor or its prime Subcontractors after the date of this Agreement.

ARTICLE XV. DEFAULT AND TERMINATION

Section 15.1 Events of Default by the Contractor

Each of the following shall constitute a Contractor Event of Default for purposes of this Agreement:

(a) Due to reasons other than Metro Fault or Uncontrollable Circumstances, the Contractor fails to cause the Facility to pass the Performance Test and achieve the Commercial Operation Date by the last day of the Extension Period as may be extended by any Time Extension;

(b) Due to reasons other than Metro Fault or Uncontrollable Circumstances, after the Commercial Operation Date is established Annual Acceptable Waste Throughput, is less than seventy-five percent (75%) of the Throughput Performance Standard and Contractor shall have failed to remedy the deficiency within the Time period provided in Section 8.14 or the Residue produced by the Facility exceeds fifty percent (50%) of processed Acceptable Waste and Contractor shall have failed to remedy the deficiency within the Time period provided in Section 7.4;

(c) Due to reasons other than Metro Fault or Uncontrollable Circumstances, the Contractor after receiving sixty (60) days prior notice of deficiency as provided in Section 8.15 fails to meet any Performance Standard (other than the Throughput Performance Standard or the Performance Standard relating to Residue) after the Commercial Operation Date;

(d) The exercise by the Trustee of its rights to accelerate the maturity of the Bonds or to foreclose upon to enter into possession of the Facility in accordance with the Bond Documents as a result of any act or failure to act by the Contractor;

(e) The repeated or persistent failure or refusal by the Contractor to fulfill any of its other material obligations under the Agreement, provided that Metro shall have given Contractor sixty (60) days prior written notice with reasonable detail giving notice of the failure to meet a specific obligation and Contractor shall have failed to remedy the deficiency within said sixty (60) days unless such failure or refusal shall result from Metro Fault or Uncontrollable Circumstances;

(f) There shall be entered, without the consent of the Contractor, a decree or order under Title 11 of the United States Code, or any other applicable bankruptcy, insolvency, reorganization or similar law, or appointing a receiver, liquidator, trustee or similar official of Contractor or any substantial part of its properties, and such decree or order shall remain unstayed and in effect for sixty (60) consecutive days; or

(g) The Contractor shall file a petition or answer or consent seeking relief under Title 11 of the United States Code, or any other applicable bankruptcy, insolvency, reorganization or other similar law, or shall consent to the institution of proceedings thereunder or to the filing of any such petition or to the appointment or taking possession of a receiver, liquidator, trustee, or other similar official of the Contractor or of any substantial part of the properties of the Contractor, or shall make a general assignment for the benefit of creditors.

Section 15.2 Events of Default by Metro

Each of the following shall constitute a Metro Event of Default for purposes of this Agreement:

(a) Due to reasons other than Contractor Fault, Metro shall fail to perform obligations under Section 9.2 hereof and such failure shall continue for a period of one hundred twenty (120) days;

(b) The repeated or persistent failure or refusal by Metro to fulfill any of its other material obligations under this Agreements, provided that Contractor shall have given Metro sixty (60) days prior written notice with reasonable detail giving notice of the failure to meet a specific obligation unless such failure or refusal shall result from Contractor Fault or Uncontrollable Circumstances;

(c) The exercise by the Trustee of its rights to accelerate the maturity of the Bonds or to foreclose upon or enter into possession of the Facility in accordance with the Bond Documents as a result of any act or failure to act of Metro.

(d) There shall be entered, without the consent of Metro, a decree or order under Title 11 of the United States Code, or any other applicable bankruptcy, insolvency, reorganization or similar law, or appointing a receiver, liquidator, trustee or similar official of Contractor or any substantial part of its properties, and such decree or order shall remain unstayed and in effect for sixty (60) consecutive days; or

(e) Metro shall file a petition or answer or consent seeking relief under Title 11 of the United States Code, or any other applicable bankruptcy, insolvency, reorganization or other similar law, or shall consent to the institution of proceedings thereunder or to the filing of any such petition or to the appointment or taking possession of a receiver, liquidator, trustee, or other similar official of Metro or of any substantial part of the properties of Metro, or shall make a general assignment for the benefit of creditors.

Section 15.3 Remedies for Default

(a) Metro Remedies. Upon the occurrence of any of the events described in 15.1 above, Metro shall provide the Contractor with a written notice (a "Default Notice") specifying the Contractor Event of Default that has occurred.

In addition to its monetary damages, specific performance (if applicable) and other remedies provided by this Agreement or available under applicable law upon the occurrence of a Contractor Event of Default, Metro shall have the right to terminate this Agreement:

- (i) if any of the Contractor Events of Default referred to in Section 15.1(b), (c) or (e) above shall occur and be continuing for ninety (90) days beyond the date that the Contractor receives the Default Notice;
- (ii) if any Contractor Event of Default referred to in Section 15.1(a), (d), (f) or (g) shall occur;

If this Agreement is terminated by Metro due to a Contractor Event of Default:

- (A) the Contractor shall pay Metro an amount sufficient to defease the Bonds, which amount shall take into account funds from Bond

proceeds which are available for the redemption of the Bonds;

- (B) the Contractor shall, in a timely manner to permit the continued operation of the Facility:
- (I) grant to Metro a nonexclusive sublicense (which shall be fully paid through the date of Termination of this Agreement, but otherwise be subject to the obligation of Metro to make payments for the DANO Technology) to any patents, trademarks, copyrights and trade secrets and "shop rights" as necessary for, and limited to, the operation of the Facility;
- (II) supply at their fair market price any proprietary components needed for continuing the operation of the Facility;
- (III) assign for the benefit of Metro all maintenance and supply contracts and all contracts relating to the sale or other distribution of Compost Product and Recovered Materials and supply Metro with the names, addresses and other records of the Contractor relating to the sale or other distribution of Compost Product and Recovered Materials;
- (IV) assist Metro by providing initial training of personnel as may be reasonably necessary to enable Metro to continue with operation of the Facility and Metro shall pay the Contractor for its Direct Costs, to the extent of Cost Substantiation, incurred by the Contractor in the performance of such services;
- (V) provide non-technical and technical design, construction and operational information, whether or not proprietary, including technical specifications and as-built reproducible plans of the Facility and assign or provide any other license, permit or consent which is necessary for the operation, maintenance and repair of the Facility;
- (VI) subject only to the rights of the Trustee under the Bond Documents and Credit Provider, at Metro's request and sole option sell the Facility to Metro. Metro may acquire the

Facility pursuant to the provisions of Section 3.5 except that if Metro shall exercise its right to purchase as a consequence of this Agreement being terminated for Contractor Default the Fair Market Value of the Facility shall be determined by excluding any value attributed to the Facility by reason of the Facility being capable of being used as a solid waste disposal or transfer facility. Metro may offset against the purchase price as so determined any sums due and owing to Metro from the Contractor.

In the event of any such termination, the Contractor shall be entitled to payment of any Tip Fee payments due prior to the effective date of Metro's notice of termination of this Agreement, but only to the extent the amount such Tip Fee payments exceeds amounts owed to Metro. Metro shall retain the right to pursue any cause of action or assert any claim or remedy it may have against Contractor.

(b) Contractor Remedies. Upon the occurrence of any of the events described in Section 15.2 above, the Contractor shall provide Metro with a written notice (a "Default Notice") specifying the Metro Event of Default that has occurred and, if such Metro Event of Default is described in Section 15.2(b) above, specifying a reasonable time to be permitted (which shall in no event be less than thirty (30) days) for Metro to cure such Metro Event of Default.

In addition to its monetary damages, specific performance (if applicable) and other remedies provided by this Agreement or available under applicable law upon the occurrence of a Metro Event of Default, the Contractor shall have the right to terminate this Agreement:

- (i) if a Metro Event of Default referred to in Section 15.2(a) or (c) shall occur;
- (ii) if any Metro Event of Default referred to in Section 15.2(d) or (e) shall occur; or
- (iii) if any Event of Default referred to in Section 15.2(b) shall occur and be continuing beyond the cure period provided in the Default Notice.

If this Agreement is terminated by the Contractor due to a Metro Event of Default, Metro shall pay the Contractor an amount equal to:

(A) the Tipping Fee payable up to the effective date of termination; plus

(B) all Direct Costs incurred by the Contractor in connection with such termination, including cancellation charges, if any, from contractors, subcontractors, or suppliers, for which the Contractor shall provide Cost Substantiation; plus

(C) amounts expended by the Contractor in connection with Capital Improvements, if any, to the extent not otherwise recovered by the Contractor under this Agreement; plus

(D) amounts that the Contractor is required to expend to retire the Bonds or the Term Loan as provided for in the Reimbursement Agreement; provided that the full amount of such amounts shall be paid directly by Metro to the Trustee; minus

(E) the amount of any adjustments favorable to Metro.

Upon termination by Contractor for Metro Default, Contractor shall retain the Facility.

Section 15.4 Termination Due to Uncontrollable Circumstances

Upon the occurrence of an Uncontrollable Circumstance, Metro shall calculate any increase in the Facility Tip Fee as a result of such event. Metro shall compare the Tip Fee as increased by a result of such event to the tipping Fee which would have been if such event had not occurred. Such comparison shall be computed on a Tip Fee per ton basis after adjustment for other increases provided for in this Agreement and in Exhibit K. For purposes of this Section 15.4 Metro shall take into account the aggregate of any such increases in the Tipping Fee occurring since the Commencement Date.

Upon the occurrence of any Uncontrollable Circumstance which:

(a) prevents the Facility from Processing any Acceptable Waste for a period of one hundred twenty (120) consecutive days or one hundred twenty (120) days (whether or not consecutive) out of any one hundred eighty (180) day period;

(b) If the cumulative increase in the Tip Fee as a result of any and all Uncontrollable Circumstances is greater than twenty-five percent (25%), excluding all adjustments to the Tip Fee otherwise authorized by this Agreement, (including without limitation inflationary adjustments and adjustments due to Metro Change Orders or Metro Fault); or

(c) If the Uncontrollable Circumstance and its expected effect on the Facility would prevent operation of the Facility at least at seventy-five percent (75%) of the throughput Performance Standard for at least nineteen (19) months;

Metro shall have the right to terminate this Agreement, any such termination to be effective upon ninety (90) days' provided prior written notice of such termination to the Contractor is given by Metro within ninety (90) days of Metro receiving notice of specific Uncontrollable Circumstances which causes an increase in the Tip Fee in excess of the amount provided in 15.4(b) above. If Metro fails to terminate within said time period Metro may terminate pursuant to this Section only if a separate Uncontrollable Circumstance causes a further increase in the Tip Fee. Upon such termination, Metro shall pay the Contractor the amount provided for in Section 15.3(b).

The foregoing to the contrary notwithstanding, if Metro provides the Contractor with written notice of its intention to terminate this Agreement pursuant to Section 15.4(b), then, if the Contractor elects to pay for any increase in the Tip Fee in excess of twenty-five percent (25%) Metro's right of termination may not be exercised.

Section 15.5 Survival of Certain Rights and Obligations

The rights and obligations of the Parties under Section 8.19 and any claims for damages shall survive any termination of this Agreement.

ARTICLE XVI. MISCELLANEOUS

Section 16.1 Entire and Complete Agreement

This Agreement constitutes the entire and complete agreement of the parties with respect to the subject matter it contains, and supersedes all prior or contemporaneous agreements, understandings, arrangements, commitments and representations, whether oral or written; provided however, that in the event of any conflict between the language set forth in this Agreement and any of the Exhibits hereto, the language in this Agreement shall prevail over any such conflicting language in the Exhibits and this Agreement shall be interpreted as if such conflicting language in the Exhibit were not a part of the agreement between the parties hereto.

Section 16.2 Binding Effect

This Agreement shall bind and inure to the benefit of the Parties to this Agreement and any successors thereto, whether by

merger, consolidation, or transfer of the assets relating to the Facility.

Section 16.3 Applicable Law

This Agreement shall be governed and construed by, under and in accordance with the laws of the State of Oregon.

Section 16.4 Headings

Captions and headings in this Agreement are for ease of reference only and do not constitute a part of this Agreement.

Section 16.5 Counterparts

This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which when executed and delivered shall together constitute one and the same instrument.

Section 16.6 Amendment or Waiver

Neither this Agreement nor any provision hereof may be changed, modified, amended or waived except by a written instrument signed by the Parties.

Section 16.7 Severability

In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal or unenforceable in any respect, the parties hereto shall negotiate in good faith and agree as to such amendments, modifications or supplements of or to this Agreement, that to the maximum extent practicable in light of such determination, implement and give effect to the intentions of the parties as reflected herein, and the other provisions of this Agreement shall, as so amended, modified or supplemented, or otherwise affected by such action remain in full force and effect.

Section 16.8 Contracts or Approvals

Except as otherwise expressly provided herein, in any instance where the consent or approval of Metro or the Contractor is required hereunder or under any agreements in connection with any transaction contemplated hereby, such consent or approval shall not be unreasonably withheld.

Section 16.9 Estoppel Certificates

Each party, upon not less than thirty (30) days' prior written notice from the other but not more than once each Fiscal

Year, shall execute, acknowledge and deliver a statement in writing:

- (i) certifying that this Agreement is unmodified and is in full force and effect (or if there have been modifications, that the Agreement is in full force and effect as modified and stating the modifications); and
- (ii) stating whether or not to the best knowledge of the signer of such certificate the requesting party is in default in performance of any material covenant, agreement or condition contained in this Agreement and, if so, specifying each such default of the other party which the signer may have knowledge.

Each party acknowledges and agrees that any such statement delivered under this Agreement may be relied upon by third parties not a party to this Agreement.

Section 16.10 Limitation of Liability of Metro

The obligations of Metro under this Agreement are limited obligations payable solely from such amounts as may lawfully be paid by Metro for services of the type required to be rendered by the Contractor under this Agreement. The obligations of Metro hereunder shall not be payable from the general funds of Metro and the incurrence or non-performance of such obligations shall not constitute or create a legal or equitable pledge of, or lien or encumbrance upon, or claim against, any of the assets or property of Metro or upon any of its income, receipts, or revenues other than upon its income receipts and revenues derived from its regulation and operation of a system for the disposal of solid waste within its boundaries. Metro shall in establishing rates for solid waste disposal comply with all material requirements of the Bond Documents.

The execution and delivery of this Agreement by Metro shall not impose any personal liability on the members, officers, employees or agents of Metro. No recourse shall be had by the Contractor for any claims based on this Agreement against any member, officer, employee or other agent of Metro in his individual capacity, all such liability, if any, being expressly waived by the Contractor by the execution of this Agreement.

Section 16.11 Assignment; Release

This Agreement may not be assigned or encumbered by either Party without the prior written consent of the other Party (which consent shall not be unreasonably withheld), except that, without such consent, (a) either Party (or any permitted assignee

thereof) may make such assignments as security as may be required in connection with any financing or refinancing in respect of all or part of the Facility or any modification thereof or addition thereto, (b) the Contractor (or any permitted assignee thereof) subject to the provisions of Article III may assign its rights and obligations hereunder, or transfer such rights and obligations by operation of law, to any other entity with which or into which the Contractor (or such permitted assignee) shall merge or consolidate or to which the Contractor (or such permitted assignee) shall transfer all or substantially all of the assets related to the Facility, and (c) the Contractor subject to the provisions of Article III (or such permitted assignee) may assign its rights and obligations hereunder to any of its Affiliates, provided that no such assignment may be accomplished unless (i) the Contractor (or such permitted assignee) shall simultaneously assign or otherwise transfer to all of the Contractor's (or such assignee's) rights and obligations under the Agreement. After the effective date of the assignment of the rights and obligations of the Contractor under the terms of this provision but subject to the provisions of Article III, the Contractor shall have no continuing rights or obligations under this Agreement.

Section 16.12 Further Assurances

The Parties acknowledge that the availability of the Credit Enhancement and of efficacy insurance with respect to the financing, acceptance and operation of the Facility is a critical requirement for the success of the Facility. The Parties agree, therefore, to negotiate in good faith with each other, and with the Credit Provider and the provider of the efficacy insurance, to amend this Agreement and the Exhibits hereto, and to provide such other documents, instruments or certificates, all as shall be reasonably required for the provision at the most cost efficient rates of the Credit Enhancement and the efficacy insurance. Neither Metro nor Contractor shall have any

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obligation to agree to any amendment which would adversely affect their respective liabilities to each other under this Agreement.

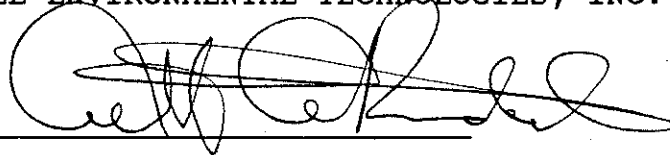
IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed and delivered as of the date first set forth above.

METROPOLITAN SERVICE DISTRICT

By: 

Its:

RIEDEL ENVIRONMENTAL TECHNOLOGIES, INC.

By: 

Its:

