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OREGON STATE SANITARY AUTHORITY MEETING MATERIALS

State of Oregon
Department of Environmental Quality

AGENDA

State Sanitary Authority Meeting

10:00 a.m., June 27, 1969, Portland City Council Chambers, City Hall, Portland, Oregon

10:00 a.m., June 28, 1969, Room 36, State Office Building, 1400 S.W. 5th, Portland, Ore.

A. Minutes of the 140th meeting (May 23, 1969)

B. Project plans for May 1969

C. Portland General Electric Co., Nuclear Power Plant Proposal

D. Construction Grant Priorities

E. Weyerhaeuser Co., Springfield

F. Reynolds Metals Co., Troutdale

G. Coos Head Timber Co., McKenna Wigwam Burner

H. Weyerhaeuser Co., North Bend

I. Houseboats

J. Erdman Packing Co.

K. Waste Discharge Permit Renewals - Special Action

1. Coos Head Timber Co., Pulp Division
2. Klamath Plywood Co., Klamath Falls
3. St. Helens
4. Garibaldi
5. Three D Corp., Astoria
6. Burns
7. Hines

L. Waste Discharge Permits, Group I (Renewals-Industrial)(11)

1. Agnew Plywood, Grants Pass
2. Coast Pkg. Co., Ontario
3. Crown Zellerbach, Lebanon
4. Harvey Alum., The Dalles
5. Edw. Hines Lmbr., West Fir
6. Kaiser Gypsum, St. Helens
7. Pennwalt Corp., Portland
8. Standard Oil Co., Willbridge, Portland
9. T P Pkg. Co., Klamath Falls
10. U.S. Plywood, Dee
11. U.S. Plywood, Lebanon

M. Waste Discharge Permits, Group II (Renewals-Domestic)(4)

1. Philomath
2. So. Umpqua Pub. Schls., Myrtle Cr.
3. Tillamook
4. Upland Sanitary District

N. Waste Discharge Permits, Group III (Renewals-Industrial)(10)

1. American Can Co., Halsey
2. Anodizing Inc., Portland
3. Cascade Const. Co., Portland
4. Clyde's Redimix, Cave Junction
5. Douglas Fir Ply., Dillard
6. GAF, Inc., Progress
7. M.C. Lininger & Sons, Ashland
8. M.C. Lininger & Sons, Medford
9. Olson-Lawyer Lmbr., White City
10. Pacific Power & Light, Mill City

O. Waste Discharge Permits, Group IV (Renewals-Domestic)(21)

1. Ashland
2. Baker
3. Bend
4. Cosmop. Invest., Portland
5. Dallas
6. Eagle Point
7. Gervais
8. Holly Hills, Wilsonville
9. Jacksonville
10. Milo Academy, Milo
11. Oakridge
12. Ontario
13. Prairie City
14. Pendleton
15. Shady Vista, Shady Cove
16. Silverton
17. TAHO Development, Neskowin
18. Talent
19. T & W Equipment, Portland
20. Twin Rocks S.D.
21. White City S.D.

P. Waste Discharge Permits, Group V (New Permits)(11)

1. Beaver Rock Prod., Galena
2. Cannon Beach
3. Wm. D. Clark, Boring
4. Fishhawk Lake Rec. Club
5. Hillsboro
6. Metier Corp., Portland
7. Walter R. Parrott, Portland
8. Rivergate Dev., Lake Oswego
9. Trew Corp., Wilsonville
10. Tualatin
11. Weyerhaeuser, Coos Bay

Q. Tax Credit Applications

1. Boise Cascade, Salem T-78
2. Boise Cascade, St. Helens T-80
3. Boise Cascade, St. Helens T-81
4. Western Steel Casting Co. T-77 FAS
5. Leonetti Furniture Co. T-83 RCH
6. General Foods Corp., Hillsboro T-41 RCH

R. Field Burning Criteria KE

S. Washington County (Master Plan)

T. Multnomah County (Fanno Creek) Authorize $ to enter contract

U. Somerset West (Tualatin Valley Sanitation Co.)

V. Mt. Pitt Lumber Co., Medford - Wigwam Waste Burner HWMc

W. Rogue River

MINUTES OF THE 141st MEETING

of the

Oregon State Sanitary Authority

June 27-28, 1969

The 141st meeting of the Oregon State Sanitary Authority was called to order by the Chairman at 10:07 a.m., June 27, 1969, in the Council Chambers of the City Hall, Portland, Oregon. Members present were John D. Mosser, Chairman; B.A. McPhillips, Vice-Chairman; Edward C. Harms, Jr., and Storrs S. Waterman.

Mr. Herman P. Meierjurgen was unable to attend because of illness.

Participating staff members were: Kenneth H. Spies, Secretary; E.J. Weathersbee, Deputy State Sanitary Engineer; Arnold B. Silver, Legal Counsel; Harold M. Patterson, Joseph A. Jensen and Harold E. Milliken, Assistant Chief Engineers; Harold L. Sawyer, Supervisor, Waste Discharge Permit Program; Edgar R. Lynd, Supervisor, Municipal Waste Treatment Program; Glen D. Carter, Water Quality Analyst; Leo L. Baton and Fred M. Bolton, District Engineers; Fred A. Skirvin, Ronald C. Householder, Harold W. McKenzie, E.A. Schmidt and Fred G. Katzel, Associate Engineers; and R. Bruce Snyder, Meteorologist.

STATEMENT BY THE CHAIRMAN

Mr. Mosser opened the meeting with a statement explaining his decision not to serve a second term as member and Chairman of the State Sanitary Authority. He said he had asked Governor McCall last March not to reappoint him when his present term of membership expires July 1, 1969. He explained that he wanted to spend more time with his family and on his private law practice. He thanked Governor McCall for his outstanding support of the Authority's program and for taking much of the pressure. He also expressed his appreciation to the other Authority members, the staff, citizen volunteer groups, the general public, and industry and municipal officials for their cooperation and assistance in abatement and control of air and water pollution throughout the State.

MINUTES

It was MOVED by Mr. McPhillips, seconded by Mr. Waterman and carried that the minutes of the 140th meeting of the Sanitary Authority held in Coos Bay on May 23, 1969, be approved as prepared by the Secretary.

PROJECT PLANS

It was MOVED by Mr. Harms, seconded by Mr. McPhillips and carried that the actions taken by the staff on the following 26 water pollution control and 2 air quality control projects during the month of May 1969 be approved:

Water Pollution Control

Date	Location	Project	Action
5/1	Ontario	Sewer District No. 26	Prov. app.
5/2	Jackson County	Callahan's Lodge preliminary report - lagoon	Prov. app.
5/8	Round Hill San. Dist.	Pump station & force main	Prov. app.
5/7	Lane County	Pier Point Inn, Glenada, preliminary report - sewage treatment plant	Prov. app.
5/7	Silverton	Stayton Canning Co., outfall, pump station, surge pond and irrigation system	Prov. app.
5/8	West Slope San. Dist.	Center Crest Subd. sewers - nonuse	Prov. app.
5/8	Springfield	Emerald Park, Third Addition, sewers	Prov. app.
5/8	Tigard	Hunzicker Street sewer	Prov. app.
5/8	North Bend	Clark Street sewer	Prov. app.
5/8	North Bend	"D" Street sewer	Prov. app.
5/9	Gresham	Angela Park sewers	Prov. app.
5/9	Gresham	Stark Street trunk extension and Lindy Addition sewers	Prov. app.
5/9	Portland	N.W. St. Helens Road, Doane Avenue sewers	Prov. app.
5/9	Portland	N.W. St. Helens Road, N.W. 35th sewers	Prov. app.
5/9	Portland	N.W. Front Avenue, east from N.W. Kittridge sewers	Prov. app.
5/9	Aloha San. Dist.	Michelle Park sewer	Prov. app.
5/9	Aloha San. Dist.	Terryanne Park, Plat #2 sewer	Prov. app.
5/9	East Salem Sewer and Drainage Dist. #1	Santana Village, Phase 1, sewers	Prov. app.
5/13	Troutdale	Weedin addition sewers	Prov. app.
5/23	Gladstone	Tim's View Subdivision sewer	Prov. app.
5/27	Sweet Home	Report on STP add.	Prov. app.
5/28	Hillsboro	Westside plant, sewage treatment plant	Prov. app.
5/29	Portland	N.W. Thurman & priv.prop.sewers	Prov. app.
5/29	Portland	N. Basin and 2 unnamed streets sewers	Prov. app.
5/29	Milwaukie	Fieldcrest-Mason Lane sewers	Prov. app.
5/29	Tualatin	Sewage Treatment Plant	Prov. app.

Air Quality Control

Date	Location	Project	Action
5/16	Prairie City	Prairie City Tbr. Co. Wigwam waste burner	Add. inf. req.
5/21	Prairie City	Strawberry Post & Pole Co. Wigwam waste burner	Add. inf. req.

PORTLAND GENERAL ELECTRIC COMPANY, NUCLEAR POWER PLANT PROPOSAL

Mr. Weathersbee stated that the Portland General Electric Company had filed with the Authority an application for a waste discharge permit for a 1,118 megawatt pressurized water nuclear power plant which the company proposes to build at its "Trojan" site located on the Oregon side of the Columbia River approximately 38 miles downstream from the city of Portland. The project is scheduled to be completed by September 1974.

Mr. Weathersbee reviewed an evaluation report which the Authority's staff had prepared covering the company's proposal for protecting the state's air and water resources. Copies of said report had been sent on June 6, 1969 for review and comment to all interested state and federal agencies and other persons concerned with the proposed project. One copy has also been made a part of the Authority's permanent files in this matter.

He said the PGE proposal includes construction of a single, large natural draft cooling tower (492 feet high and 385 feet base diameter) which will dissipate into the atmosphere not less than 98% of the waste heat from the project.

He said further that based on its review of the company's proposal, the Authority's staff had concluded that adequate protection would be provided for the state's air and water resources and for the health and safety of the public and therefore a waste discharge permit should be issued. He then reviewed the waste discharge permit conditions recommended by the staff, a copy of which has been made a part of the Authority's permanent files.

In answer to questions raised by the Chairman, Mr. Weathersbee explained that the outfall line to the Columbia River would be designed with multiple outlets so that the warm water discharge would be rapidly diluted by and diffused with the river water with the result that there

would absolutely be no curtain or wall of hot water through which fish would have to pass; that condition No. 5 of the permit had been modified from the original draft by adding the words "unless the heated water discharges to the river are controlled so that the amount of heat added to the river per unit of time does not exceed the amount that would have been allowed to be added to the river during the same time interval had the plant continued in operation"; and that "pertinent environmental media" mentioned in condition No. 10 included all other biota in addition to fishlife.

Mr. Mosser stated that although the recommended permit would expire before the plant goes into operation, he thought it should include the standard conditions requiring notice to the Authority whenever a significant change in the character or quantity of waste discharge is anticipated or in the event a change in the conditions of the receiving waters results in a dangerous degree of pollution.

The Chairman then asked if the company representatives present at the meeting wished to make a statement. Mr. H.H. Phillips, representative of PGE, said they had no prepared statement to make but would be glad to try to answer any questions the Authority members might have. The members had no questions and the Chairman then asked if there was anyone else in the audience who wished to make a statement. Although the main floor of the Council Chambers was nearly filled with spectators, no one offered to comment on the company's project proposal or on the proposed waste discharge permit prepared by the Authority's staff.

The Secretary then read for the record the written statements which had been received prior to the meeting from (1) Mr. James L. Agee, Regional Director, Federal Water Pollution Control Administration, in a letter dated June 24, 1969, (2) Mr. James P. Belke, Director, Washington Water Pollution Control Commission, in a letter dated June 25, 1969, (3) Mr. Robert W. Schoning, State Fisheries Director, Oregon Fish Commission, in a letter dated June 25, 1969, (4) Mr. John R. Donaldson, Chairman, Board of Directors, Citizens for a Clean Environment, in a letter dated June 25, 1969, (5) Mr. William Puustinen, Columbia River Fishermen's Protective Union, in a letter dated June 26, 1969 and (6) recommendations by Dr. Gary R. Farmer, Director,

Radiation Section, Oregon State Board of Health, in a letter dated June 12, 1969. Copies of these six letters have been made a part of the Authority's permanent files in this matter.

The Secretary stated that pursuant to the comments made in the letter by Mr. John R. Donaldson, he recommends that the U.S. Department of Transportation be added to the list of agencies included in condition No. 9 of the proposed waste discharge permit.

Mr. Mosser then commented that in his opinion PGE has done an excellent job in trying to protect the environment but he said he would be concerned about the possible effects of a nuclear power plant located in the Willamette Valley.

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the waste discharge permit as recommended by the staff for the proposed PGE nuclear power plant be approved (1) with the addition to condition No. 9 of the U.S. Department of Transportation, (2) with the understanding that the monitoring program will include monitoring of biota, (3) with the additional requirement that notice be given the State Sanitary Authority of any proposed radioactive waste handling, storage and transportation including the time such wastes are to be transported, and (4) with the further requirement that the permit is subject to change or revocation in the event the condition of the receiving waters changes so as to require it.

Mr. Waterman asked if the motion included the modification to condition No. 5 mentioned by Mr. Weathersbee, and Mr. Mosser said it did. Mr. McPhillips commended PGE for its decision to install a cooling tower to protect the quality of the Columbia River water.

Mr. Mosser said issuance of this permit constitutes only preliminary action and that PGE and the Authority's staff will continue to work together in this matter.

COMMITTEE APPOINTMENT OF HERBERT C. HARDY

The Chairman then read the following letter dated June 25, 1969, which he had written commending Mr. Herbert C. Hardy for the outstanding public service which he rendered prior to and during the 1969 Oregon Legislature as Chairman of the Citizens Committee on Pollution Legislation,

and requesting Mr. Hardy to Chair another committee to promote approval by the voters at the primary election in May 1970 of the proposed constitutional amendment to authorize the sale of state bonds to help local communities finance construction of environmental control projects:

"Mr. Herbert C. Hardy June 25, 1969
Cake, Jaureguy, Hardy, Buttler & McEwen
1408 Standard Plaza
Portland, Oregon

Dear Herb:

First I want to again thank you for the outstanding job you did as Chairman of the Citizens Committee on Pollution legislation. The program which the Committee prepared was an outstanding one and the work of its members and particularly yourself in following it through the Legislature to the conclusion far exceeded anything which I had any right to expect of you. The outstanding results of passage of nearly the entire program should give you great satisfaction and be of substantial benefit to the State.

As you know another job now needs to be done. Perhaps the main piece of legislation was the proposal for statewide bonding to arrange financing for the many needed projects to go forward. This is particularly important in view of the delay of Congress in appropriating funds for programs and the rapid escalation of interest rates which make it expensive and difficult if not impossible for the smaller units of government to adequately finance these projects. You are entitled to a rest after the efforts you have put forth; but on the other hand your diligence and leadership are needed more than ever and I am, therefore, again calling on you to ask if you will form a new citizens committee to explain this measure and promote its passage in the primary election next May. As I did with the original committee, I would give you a free hand in choosing the members of the committee which you feel will provide the balance and competence to do the job. Because the skills needed in this promotional and educational effort are different from those needed in the technical job of drafting legislation I would suppose that you may choose different members for this new committee. It may also be desirable to expand the size of the committee so as to ensure representation in all areas of the State. I am sure that the members of the State Sanitary Authority and its staff, as well as myself, will cooperate fully with the new committee and render it all the assistance we can. Both the pressure of the commission's work on time of the commission and staff and the need for outside financing dictate, however, that a new citizens committee be formed to insure that the job is properly done.

My thanks in advance for the job that I know you will do.

Sincerely,

JOHN D. MOSSER"

CONSTRUCTION GRANT PRIORITIES

Mr. Milliken reported that prior to the June 15 deadline 61 applications for construction grants for sewage treatment works projects for fiscal year 1970 had been received, that the total construction cost of these projects is estimated to be $50,171,748, that of this amount some $44,425,171 would be eligible for state or federal grants, and that the total grants requested was $14,323,570. He said further that it is expected that Oregon will receive an allotment of at least $2,400,000 from FWPCA for federal grants to supplement the $1,500,000 state appropriation available for fiscal year 1970.

He presented a list of the projects arranged according to priority point totals and also presented tables summarizing the review made by the staff of the 61 applications. He emphasized that those projects marked with an asterisk will require another bond election in order to complete their local financing programs because their present programs were based on receiving 75% grants instead of only 30 or 33% grants. He also explained that on this same basis the Clackamas County Service District project has a priority point total of 62 instead of the 52 shown; but because construction of the project cannot be started this fiscal year (the plant site must be pre-compacted), it should not be considered eligible because it would tie up too large a portion of the state's total allotment of state and federal funds.

Mr. McPhillips mentioned Dundee as one of the applicants which must vote more bonds.

Mr. Mosser said that every applicant should vote 100% financing in case no grant should be available this next year, because the longer they wait the more it will cost due to escalating prices. In some cases the price increases amount to more than the grant received. He suggested that the federal funds be used for those projects eligible for 33% grants and the state funds be used for the other 30% grants. He suggested further that the Authority not commit at this time all of the funds ($3,900,000) expected to be available for FY 1970.

Mr. Harms mentioned the difficulty that cities are having selling their bonds. He reported that Klamath Falls had recently received no bids for sale of its sewer bonds.

Mr. Mosser suggested that those applicants needing additional bond elections be given 90 days to complete their fiscal programs.

Mr. Donald S. Kelley, attorney for Oakland, was present and said he was sure the voters of that city would approve the necessary additional bonds within the time limit specified.

A representative of the city of Lebanon said last year they were eligible for a 50% federal and 25% state grant and asked if they would still be eligible for that amount. He was informed that at the present time they would be eligible for only a 30% grant.

Mr. Gary E. Lockwood, attorney and Mr. John Webber of the Odell Sanitary District said their project had already been completed and that if they received only a 30% instead of a 75% grant the cost to the individual property owners would be exorbitantly high. They requested permission and support of the Authority to appear before the State Emergency Board and request additional state funds. They were advised that the Authority had no objections to such an approach but that the city of Hillsboro which received only a partial grant in FY 1969 would have priority over their project.

Mr. Lloyd Castner, City Manager of Ontario, reported that the Ontario project is already under construction.

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that priorities for those projects beginning with No. 256, Halsey, through 286, McMinnville, having 53 priority points or more be approved with the understanding (1) that the Clackamas County Service District, No. 234, with 62 priority points not be included because of its lack of available local financing and its delay in starting plant construction, (2) that those applicants that have previously voted bonds but are now short of funds be given until September 30, 1969 to hold another election or otherwise obtain adequate local financing, and (3) that the federal funds be used first for those projects which are eligible for an additional 10% federal grants (total of 33% instead of 30%).

Mr. Harms said that in October another review would be made to see if any additional grant offers could be made and Mr. Mosser stated that it is assumed that further consideration would be given at any time additional federal funds become available and if the state bond issue passes next May.

The above motion included the following 31 projects:

Project No.		Applicant	Priority Points	Grant Requested	Remarks
(1)	256	Halsey	70	$ 36,760	Under construction
(2)	216	Oakland	67	56,900	*Another bond election needed
(3)	219	Odell S.D.	67	37,920	Project completed
(4)	258	Ontario	67	130,300	Under construction
(5)	241	Warrenton	67	75,440	Under construction
(6)	263	Moro	64	20,100	
(7)	221	Nehalem	64	82,050	*Another bond election needed
(8)	282	Troutdale	64	36,430	
(9)	271	Oak Lodge S.D.	62	10,820	Project completed
(10)	259	Wallowa	62	36,000	*Another bond election needed
(11)	283	No. Roseburg S.D.	61	24,420	
(12)	287	Paisley	61	12,230	
(13)	288	Parkdale S.D.	61	39,000	*Another bond election needed
(14)	246	Bay City	60	78,600	
(15)	214	Brookings	60	9,180	Project completed
(16)	262	Merrill	60	32,400	
(17)	252	White City S.D.	60	5,580	Project completed
(18)	250	Tillamook	60	30,450	Under construction
(19)	220	Lebanon	59	62,440	Project completed
(20)	265	No. Powder	59	25,500	*Another bond election needed
(21)	273	Rockaway	59	32,100	*Another bond election needed
(22)	243	Wheeler	59	50,730	
(23)	202	Dundee	58	69,870	*Another bond election needed
(24)	221	Lake Oswego	58	22,440	Project completed
(25)	233	Reedsport	58	176,100	
(26)	276	Veneta	58	24,200	*Another bond election needed
(27)	268	Gresham	57	222,750	
(28)	275	Medford	57	1,551,000	
(29)	232	Salem (West)	56	230,340	Under construction
(30)	280	Cannon Beach	53	100,920	Bond election 7/1/69
(31)	286	McMinnville	53	388,410	
				$3,711,380	

CITY OF HINES WASTE DISCHARGE PERMIT Agenda Item K(7)

Mr. Lynd reported that the present waste discharge permit issued to the city of Hines on October 25, 1968 required the installation of chlorination facilities by May 31, 1969 but that thus far such facilities have not

been installed by the city. He said further that the present permit expires June 30, 1969.

Mayor Carol Hudkins was present to represent the city. She said plans have been prepared and approved for the chlorinator installation but the project has been delayed because the Edward Hines Lumber Co. is planning to install its own lagoon system on property immediately adjacent to the city's lagoon. Carl E. Green is consulting engineer for the lumber company.

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the waste discharge permit for the city of Hines be extended to December 31, 1969 with the condition that chlorination facilities be installed by that date and that a schedule be worked out after the city has checked on the lumber company's plans.

TAX CREDIT APPLICATIONS - BOISE CASCADE

Staff evaluation reports having been sent to the members in advance of the meeting and copies having been made a part of the Authority's permanent files in these matters, it was MOVED by Mr. Harms, seconded by Mr. McPhillips and carried that tax credit certificates as recommended by the staff be issued to the Boise Cascade Corporation (1) pursuant to application T-78 for water pollution control facilities installed at a cost of $572,062, (2) pursuant to application T-80 for water pollution control facilities installed at a cost of $966,535, and (3) pursuant to application T-81 for air quality control facilities installed at a cost of $230,012.

COOS HEAD TIMBER CO., McKenna Wigwam Burner Agenda Item G

Mr. Householder had prepared a staff memorandum regarding this matter and had recommended that the company be directed to comply by September 1, 1969 with all Authority regulations pertaining to smoke, suspended particulate matter and fallout in the operation of its wigwam burner at the McKenna plant. The company by letter dated June 17, 1969, had requested two years, until June 30, 1971, to phase out of operation its wigwam burner. Mr. Householder said the present burner is not being properly operated and maintained; that it is in very poor condition.

Mr. C. Wylie Smith was present to represent the company and argued that their request should be approved.

Mr. McPhillips pointed out the company in 1968 had voluntarily phased out of operation its Bunker Hill burner and expressed the opinion they are acting in good faith. He therefore MOVED that the company's request be granted. His motion was seconded by Mr. Waterman. Mr. Harms said he thought that allowed them much more time than was warranted and so he MOVED to amend Mr. McPhillips motion by changing the deadline from June 30, 1971 to January 1, 1970. Mr. Mosser seconded Mr. Harms' motion. The amendment failed to pass with Mr. Mosser and Mr. Harms voting in favor and Mr. McPhillips and Mr. Waterman voting against it. The original motion also failed.

It was then MOVED by Mr. Harms, seconded by Mr. Mosser and carried that the company be given until June 30, 1970 to phase its McKenna wigwam burner out of operation.

The meeting was recessed at 12:15 p.m. and reconvened at 1:40 p.m.

STATEMENT OF POLICY REGARDING FISH KILLS

Mr. McPhillips mentioned two incidents of fish kills which had occurred within recent days in the state - one in Lobster Creek, a tributary of the Rogue and the other in a small tributary of the Willamette within the city of Gladstone.

It was then MOVED by Mr. McPhillips, seconded by Mr. Harms and carried that it be the policy of this Authority that all such cases be prosecuted forthwith and also that where feasible the state should sue for damages.

COOS HEAD TIMBER COMPANY PULP DIVISION WDP Agenda Item K(1)

Mr. Weathersbee presented the staff memorandum and the recommended provisions for a renewed waste discharge permit for the Coos Head Timber Company pulp mill located near Empire on Coos Bay. The present permit expires June 30, 1969.

The recommended permit would require of the company (1) that plans be submitted by September 1, 1969 and facilities installed by January 1, 1970 for providing primary sedimentation of screened hydraulic barker effluent, (2) that a proposal be submitted by September 1, 1969 and a study and report be completed by January 1, 1970 of dispersion of spent sulfite liquor into the bay through an extended outfall, (3) that contingent upon the findings of the aforementioned study detailed plans and

specifications be submitted by April 1, 1970 and facilities installed by December 31, 1970 for primary treatment of the white waters and other related wastes and also that the outfall extension be installed by the latter date, and (4) that a detailed program and time schedule be submitted by April 1, 1970 for effecting an 85% reduction of the total mill BOD load by chemical recovery or other means.

Mr. Robert M. Samuels, company official, said the company will do everything possible to comply with the State Sanitary Authority requirements but he denied that present mill discharges are causing serious damage to aquatic life in the bay. He claimed that fishing for ocean species is normal.

Mr. Mosser asked why the required dilution study had not been made before now. Mr. Samuels replied that at first the company did not realize what was involved and then it was delayed because of the bay conditions.

Mr. Weathersbee pointed out that extension of the outfall would require a permit from the U.S. Corps of Engineers which in turn would require approval of FWPCA and that the latter agency had indicated 85% reduction of the BOD loading would be the minimum that it could accept.

Mr. Samuels said they are not now taking advantage of the dilution that would be available if the outfall were extended farther out in the bay.

Mr. Mosser suggested that the present permit be extended to September 30, 1969 with the indication that if satisfactory progress were not being made at that time the permit would not be renewed.

Mr. Samuels then asked if they have to provide 85% treatment anyway what is the need of the dilution study. Mr. Mosser replied that the study is not for the purpose of determining whether there shall be 85% treatment or no treatment but whether the treatment shall be 85%, 90% or higher. He asked if the company wanted to extend the outfall and then be shut down to which Mr. Samuels said they did not. Mr. Mosser said in that case the company better be prepared to go the whole way.

Mr. C. Wylie Smith then attempted to argue for more lenient requirements. He said they have 100 employees at the mill who want to keep working. He said it is their philosophy to "live and let live."

It was then MOVED by Mr. McPhillips, seconded by Mr. Harms and carried that the waste discharge permit for the Coos Head Timber Co. pulp mill be renewed as recommended by the staff with the exception that the words "and approved by" be removed from condition 2(a). Mr. Mosser voted "no."

KLAMATH PLYWOOD COMPANY, Klamath Falls Agenda Item K(2)

Mr. Weathersbee read the staff memo dated June 26, 1969 regarding this matter and discussed the recommended provisions for renewal of the company's waste discharge permit, copies of which have been made a part of the Authority's permanent files. In a letter dated June 20, 1969 the company had submitted a time schedule for construction of secondary waste treatment facilities and in another letter dated May 23, 1969 the Oregon Fish and Game Council had objected to the company's recent installation of piling in the river and to the length of time given the company previously by the Sanitary Authority for removal from the river of all log handling, storage and transportation practices.

Plans for the secondary waste treatment facilities having already been submitted to the Sanitary Authority by the company, it was MOVED by Mr. Waterman, seconded by Mr. McPhillips and carried that condition No. 1 be revised to read "Provide by not later than October 17, 1969, secondary treatment of total mill wastes equivalent to at least 85% reduction of BOD and suspended solids."

Mr. Mosser then asked about condition No. 5 which pertains to control of log debris in the river. Mr. Richard Newman, Assistant Plant Engineer, reported the company has removed all upstream log storage and now has all its logs stored in the one area immediately adjacent to the plant. In response to a question from Mr. Mosser, Mr. Carter said he had observed the location of the piling recently installed in the river by the company but had no opinion concerning its possible effects on the hydraulic characteristics of the river. It was doubted that this comes under the jurisdiction of the Authority unless it contributes to pollution.

It was then MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the waste discharge permit be renewed as recommended by the staff with condition No. 1 as amended by the previous motion and with an expiration date of January 31, 1972.

The staff was instructed to investigate further the question regarding condition No. 5.

WASHINGTON COUNTY (MASTER PLAN)

Mr. D. Eldon Hout, Chairman of the Washington County Board of Commissioners, was present and asked that the Sanitary Authority declare an emergency in the portion of Washington County located in the area tributary to the proposed master sewer plan. He reported that Dr. James Stewart had made such a declaration. He estimated that all existing sewage plants will be at capacity within two years.

Mr. Mosser said he thinks an emergency does exist in the area, that although a health emergency has been prevented by the construction ban adopted last year other conditions such as economic and general welfare do constitute an emergency.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the Sanitary Authority declare that an emergency does exist in that portion of the Tualatin Basin in Washington County covered by the master sewer plan.

With regard to the interim development Mr. Mosser asked if Washington County is in a position to screen requests and to determine which are in conformance with the master plan.

Mr. Hout said adoption of the master plan would be completed in another week and that they are preparing to process emergency applications. He said nothing had been worked out yet with the city of Portland but he did not think there would be any problem. He said Beaverton, Tigard and Tualatin have all agreed to cooperate with the county for development of the master plan.

SOMERSET WEST (TUALATIN VALLEY SANITATION CO.)

Mr. Bolton discussed the problem of sewage disposal at Somerset West in Washington County and reviewed the proposed waste discharge permit conditions. He said that the present plant designed for a flow of 0.16 mgd is loaded to capacity and has not been functioning well for the past year or so, that the owners want to improve and expand it subject to the provisions of the Authority's September 1966 policy for the Tualatin Basin, that the company's proposal has been checked with the Washington County officials, that the project is located where it cannot be served by the master sewer plan for some time, that the company proposes to double the size of the

plant, to add a 10-day holding pond and to use the increased flow in the summer time for irrigation of a golf course and, if necessary, other land which the company owns.

He said the irrigation requirements would be as outlined in the staff proposal sent to Dr. Press and to Dr. Stewart in a memo dated June 5, 1969. Mr. Mosser said he thinks such requirements should be adopted as regulations rather than merely as an agency policy.

It was pointed out that this would be the first waste discharge permit granted for use of plant effluent for irrigation purposes.

It was MOVED by Mr. Harms, seconded by Mr. McPhillips and carried that the waste discharge permit for Somerset West (Tualatin Valley Sanitation Co.) be approved as proposed by the staff.

Mr. Mosser expressed concern about the practice of using only secondary treatment for disposal by land irrigation. Mr. Harms thought it should be only a temporary or interim practice.

WEYERHAEUSER COMPANY PROPOSAL, Springfield

Mr. Patterson reviewed the staff memorandum dated June 6, 1969 which outlined and evaluated the proposal of the Weyerhaeuser Company for improving its controls and for greatly reducing the atmospheric emissions from its kraft pulp mill at Springfield.

It was MOVED by Mr. Mosser, seconded by Mr. Waterman and carried that preliminary approval of the Weyerhaeuser Company's proposal be granted subject to the conditions recommended by the staff that the company submit (1) emission data ahead of the direct-contact evaporator for the present No. 3 furnace, such data to include representative average and maximum values, and (2) for review and approval plans and specifications for air pollution control equipment and continued compliance with all provisions of the kraft mill regulations.

MULTNOMAH COUNTY (FANNO CREEK SYSTEM)

Mr. Jensen read the staff memorandum dated June 23, 1969 regarding the proposal of Multnomah County and the city of Portland to relieve the load on the Fanno Creek sewerage system.

Mr. Francis Ivancie, Portland City Commissioner, said they proposed to divert some 650,000 gpd of sewage from the Fanno Creek system by pumping it to the Portland city system where it could be diverted to either the main Columbia Blvd. plant or to the Tryon Creek Plant for final disposal. He requested that the Sanitary Authority approve the proposal and in exchange permit the city to make some 1,500 additional sewer connections.

Mr. Mosser pointed out that the Fanno Creek plant is still not operating at peak efficiency and until it is the Authority could not consider allowing additional connections to it. He asked if this proposal had been discussed with Washington County officials.

Mr. Robert Nordlander, Multnomah County Public Works Director, then reported that monthly test results of the Fanno Creek sewage plant operation are now available. He said recent results were as follows:

Month	Ave. Q(MGD)	Ave. BOD	Ave. Susp. Solids
March	3.1	22.6 ppm	15.2 ppm
April	3.06	33.2 "	19.4 "
May	3.01	24.2 "	20.3 "

He reported further that a new aerator had been installed in one tank and that in June with only two aeration tanks in operation the BOD was 39.9 ppm and suspended solids 23.3 ppm. He stated that both digesters are finally back in operation.

Mr. Lynd pointed out that during this time the Authority had received several complaints about odor nuisances which were due to sludge handling practices. Mr. Nordlander said a cover was being installed on the sludge thickening device to help prevent the escape of odors from that unit.

Mr. Mosser asked about the economics of the proposal. Mr. Nordlander replied it will cost an estimated $82,000 to install the required pumping facilities and pressure line. It was reported that only 55 homes in the Maplewood area have thus far been connected under the emergency classification and that some 800 remain to be served.

In answer to Mr. Mosser's question Commissioner Ivancie said that the city of Portland and Multnomah County could control the number of hook-ups so as not to overload the Fanno Creek plant. Mr. Nordlander said

zoning in the area provides primarily for only single family residences. He said further that no decision had yet been reached regarding allocation of the 1,500 connections requested.

Mr. Mosser asked about the priority allocations agreed upon earlier and Mr. M. James Gleason, Multnomah County Commissioner, replied that this is an entirely separate diversion and that it is contemplated to be completely within the control of Multnomah County and the city of Portland. Mr. Mosser then asked that if other diversions take place wholly in Washington County would Multnomah County and the city of Portland be agreeable to receiving no beneifts. Commissioner Gleason replied, "Yes, if the conditions are the same."

Mr. Mosser said he was concerned about the equality of such a diversion and thought that Washington County should be in agreement with it.

The meeting was then recessed at 3:45 p.m. and reconvened at 4:00 p.m.

Following further discussion it was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the proposed diversion be authorized, unless within one week Washington County notifies the Authority's staff that there are serious objections to the diversion from the standpoint of development of the master plan which it contemplates adopting, and that the Authority allow a replacement of the flow which is diverted on a gallon to gallon basis so long as there are no adverse effects on the plant itself from the timing or way the new flow reaches the plant or the effect it has on the operation of the plant.

Mr. Mosser then referred to the 750 additional connections allowed at the January 31, 1969 meeting of the Authority. To expedite action regarding those not already connected he instructed the Authority's staff to review the operation of the Fanno Creek plant as soon as possible after installation of the new aeration equipment is completed and if it is found to be operating satisfactorily to notify the local jurisdictions involved that they can proceed with the additional connections up to the total of 750. Allocation of these connections is to be worked out by the local jurisdictions.

With regard to the Multnomah County-City of Portland diversion approved earlier, it was decided that replacements up to an equivalent of 1,500 single

family residences could be made if the plant will take it; and to assure that this exchange will not overload the plant after 1,000 connections have been made, no more services shall be connected until the operation of the plant has been thoroughly checked out and then if found to be satisfactory an additional 100, 200 or more up to the full 1,500 will be permitted.

CITY OF BURNS WASTE DISCHARGE PERMIT Agenda Item K(6)

Mr. Lynd pointed out that the present waste discharge permit for the city of Burns expires on June 30, 1969 and requires the installation of chlorination facilities as part of the city's lagoon system of sewage disposal.

The Public Works Director and Mr. Irvin D. Smith, Attorney, were present to represent the city. They contended that chlorination is not necessary because no sewage overflow allegedly reaches any public waters of the state. Mr. Smith said the two 35-acre lagoons handle all the flow except for about 5 or 6 months each year when they overflow onto an adjacent 160 acre field, the owner of which is glad to get the water for irrigation purposes.

They said the city had considered installing another lagoon but the property owner will not sell the land.

After more discussion it was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the waste discharge permit for the city of Burns be extended 90 days (until September 30, 1969) with the requirement that by September 30, 1969 the city provide either adequate disinfection of the effluent or a properly constructed third lagoon and that the staff consult with the city on what is proper chlorination or what is a properly constructed lagoon.

HILLSBORO WASTE DISCHARGE PERMIT Agenda Item P(5)

Mr. J.W. Barney, City Manager, was present and discussed the city's financial problems. He said they had hoped to get additional grants but since that will not now be possible they will have to reduce the scope of the project until or unless additional bonds are voted. He said further that the City Council will propose a program that will comply with the recommended waste discharge permit conditions relative to the land disposal

of the industrial effluent but that correction of the present infiltration problems will be extremely costly because so many miles of old sewer are involved.

Mr. Mosser urged him to explore the possibility of joining the county in implementing development of the master sewer plan.

The need for low flow augmentation in the Tualatin was discussed.

It was MOVED by Mr. Mosser, seconded by Mr. McPhillips and carried that the waste discharge permit for the city of Hillsboro be granted as recommended by the staff.

ERDMAN PACKING COMPANY

Mr. Baton reported on the status of the steps being taken by Mr. Erdman for the purpose of providing adequate waste disposal facilities at the Erdman Packing Company slaughterhouse and cattle feed lot located near Bandon. Mr. Baton said plans had not been prepared by a professional engineer as requested by the Authority but Mr. Erdman had his own plans which Mr. Baton thought constituted a reasonable approach to solving the problem. He said Mr. Erdman had assured him that if the problem were not corrected this fall he would shut down his operations.

Mr. Myron Spady, Attorney and downstream property owner, was present and submitted statements similar to those which he presented at the May 23, 1969 meeting in Coos Bay. He disclosed that he has filed a complaint against Mr. Erdman and that the hearing on his request for an injunction has been scheduled for the last week in August. He objected to the Authority's giving Mr. Erdman until October to solve the problem.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that this matter be continued until the next meeting with the provision that a progress report be given at that time.

The Secretary reported that prior to the meeting he had received a long distance telephone call from Mr. William E. Walsh, attorney for Mr. Erdman, stating that due to another commitment he was unable to attend the Authority meeting.

U.S. PLYWOOD - CHAMPION PAPERS Waste Discharge Permit Agenda Items L(10) & (11)

Recommended provisions for renewed waste discharge permits for the Dee and Lebanon mills of the U.S. Plywood - Champion Papers, Inc. had been

prepared by the staff and submitted in advance of the meeting to the company and Authority members.

Mr. Mosser asked if the company could meet the schedules set forth in the staff recommendations and the company representative who was present said they could as some equipment had already been ordered.

It was MOVED by Mr. McPhillips, seconded by Mr. Waterman and carried that the permits be renewed as recommended by the staff for the U.S. Plywood-Champion Papers, Inc. hardboard mill at Dee and plywood mill at Lebanon except that the date in line 2 of condition No. 1 of the latter permit be changed from May 31, 1969 to May 31, 1970.

The meeting was then recessed at 5:10 p.m.

The 141st meeting was reconvened by the Chairman at 10:00 a.m., June 28, 1969 in Room 36, State Office Building, 1400 S.W. 5th Avenue, Portland, Oregon.

Governor Tom McCall was present and expressed his regrets that Mr. Mosser would not be able to continue for another term as member and Chairman of the new Environmental Quality Commission which beginning July 1, 1969 will be successor to the State Sanitary Authority. He thanked Mr. Mosser for the outstanding service which he has rendered and for the many sacrifices which he has made for the state of Oregon during the past two years as Chairman of the Authority. He said Mr. Mosser is a person that can perform any type of public service better than anyone else can.

The Governor then introduced Mr. George A. McMath, Portland Architect, and announced that he had appointed Mr. McMath as a member of the new Environmental Quality Commission for a four-year term beginning July 1, 1969.

Next the Governor thanked the other four members of the Sanitary Authority for the excellent service they have rendered and said they have been asked to continue as members of the new Commission.

In response to a question from the Governor, Mr. Mosser then outlined some of the things that he hopes will be accomplished in the near future as follows:

(1) Approval by the voters next May of the proposed constitutional amendment for state aid in financing environmental quality control works,

(2) adoption and implementation of regulations for control of atmospheric emissions from motor vehicles,

(3) study of biota in Oregon waters to determine if pesticides are reaching a dangerous level,

(4) planning and development of regional projects such as the upper Willamette corridor - start planning now for the population increases and related problems destined to occur in the next 10 to 100 years,

(5) develop solutions to the ever increasing solid waste disposal problems, and

(6) accomplish the many other unfinished tasks including issuance of waste discharge permits and adoption of specific air and water quality standards.

The Governor commented briefly on the need for passage of the bond issue (constitutional amendment) and for control of auto emissions and then excused himself from the meeting.

FIELD BURNING CRITERIA

Mr. Snyder reviewed the criteria which had been developed by the staff pursuant to the requirements of HB 1228 passed by the 1969 Legislature. He explained that the purpose of HB 1228 is to achieve an improvement or alleviation in the smoky conditions caused in the Willamette Valley during the field burning season by classifying certain meteorological conditions as marginal and by establishing priorities and limitations for burning during marginal conditions.

He pointed out the classification would be based on daily early morning forecasts by the U.S. Weather Bureau of the maximum mixing depths. A copy of the staff's proposed field burning schedule and additional guidelines for field burning permit agents has been made a part of the Authority's permanent files.

Mr. Harms said he could see no reason or need for the burning of cereal grain fields.

Mr. Charles S. Kizer, Chairman of the Field Sanitation Committee for the Oregon Seed League, was present and raised several objections to the staff's recommended schedule and guidelines. He questioned the use of visibility as a control criteria and the 5,500-foot limit for unrestricted burning. He opposed the recommended acreage limitations on burning in Linn and southern Benton Counties. He suggested that the burning be restricted only by limiting the number of hours during which fields could be burned on any given marginal day.

After lengthy testimony by Mr. Kizer and numerous questions and comments by the members and staff, the Chairman at 11:45 a.m. suggested that the discussion be recessed until afternoon and that in the interim Mr. Kizer attempt to resolve some of the differences.

When the subject was reopened later in the meeting, Mr. Kizer said that during the noon hour he and other members of his group had conferred with Mr. Snyder and were hopeful that some kind of an agreement could be reached.

After more lengthy discussion, it was MOVED by Mr. Waterman and seconded by Mr. McPhillips that the field burning schedule as originally proposed by the staff be adopted with the following changes: (1) in items Nos. 1, 5 and 6 the figure 3,500' be reduced to 3,000', (2) the visibility control criteria be retained and (3) the acreage limitations be eliminated.

It was then MOVED by Mr. Mosser and seconded by Mr. Harms to amend the motion by substituting new language for the visibility criteria. The motion to amend failed to pass.

Next it was MOVED by Mr. Harms and seconded by Mr. McPhillips to amend the original motion by striking the language regarding the elimination of acreage limitations. This motion also failed to pass.

The original motion was likewise defeated.

It was then MOVED by Mr. Mosser, seconded by Mr. McPhillips and carried that an executive order be adopted establishing the following schedule of marginal days and corresponding burning restrictions:

SCHEDULE OF MARGINAL DAYS AND
CORRESPONDING BURNING RESTRICTIONS

CLASS		METEOROLOGICAL CONDITIONS	ALLOWED BURNING*	BURNING HOURS** Begin	End
UNRESTRICTED	1	Forecast Maximum Mixing Depth 5500 feet or greater	No restrictions on type of burning	Time Mixing depth is forecast to reach 3000'	Sunset
MARGINAL	2	Forecast Maximum Mixing Depth 5000-5400 feet	Annual and Perennial grass seed fields used for grass seed production; cereal grain fields	Time Mixing depth is forecast to reach 3000'	Sunset

	CLASS	METEOROLOGICAL CONDITIONS	ALLOWED BURNING*	BURNING HOURS** Begin	End
MARGINAL	3	Forecast Maximum Mixing Depth 4500–4900 feet	Annual and perennial grass seed fields used for grass seed production	Time Mixing depth is forecast to reach 3000'	Sunset
MARGINAL	4	Forecast Maximum Mixing Depth 4000–4400 feet	Perennial grass seed fields used for grass seed production	Time Mixing depth is forecast to reach 3000'	Sunset
MARGINAL	5	Forecast Maximum Mixing Depth 3000–3900	Perennial grass seed fields used for grass seed production	1 P.M.	6 P.M.
PROHIBITED	6	Forecast Maximum Mixing Depth less than 3000 feet	Burning prohibited except propane flaming, where combustion is nearly complete		

FURTHER RESTRICTIONS

Whenever visibility at Salem or Eugene airport, as observed by the U.S. Weather Bureau in the NW quadrant is reduced to 6 miles or less by smoke or haze for two consecutive hours, or to 3 miles or less at any time under prevailing relative humidities of 70% or less on any day, the following day shall be prohibited or classed marginal and days shall be classed as follows:

Class 3	Mixing depth - 5500' or more
Class 4	Mixing depth - 4500' or more
Class 5	Mixing depth - 4000' or more
Prohibited	Mixing depth - less than 4000'

The staff of the Sanitary Authority or its successor agency may authorize burning in excess of that permitted by the schedule where conditions in their judgment warrant it, or, by express written permit, burning on an experimental basis, and may also, on a fire district by fire district basis, issue limitations more restrictive than those contained in the schedule, when in their judgement it is necessary to attain air quality.

* Allowed Burning - Note that "other burning", which includes pastures, fence rows and ditch banks (including those around grass and grain fields), agricultural land clearing debris, brush, etc. is not allowed under marginal conditions.

** Burning is to be initiated and completed between these hours.

WEYERHAEUSER COMPANY, North Bend

Mr. Patterson reported that the air pollution problem at this mill is common to the industry and that as a consequence the Plywood Association is undertaking a study of it. Because of this fact the Weyerhaeuser Company

wants until September 15, 1969 to submit its findings. In reply to a question by the Chairman, Mr. Patterson said he did not know how long the study would take but hopefully it would set a pattern for the entire industry.

It was MOVED by Mr. McPhillips, seconded by Mr. Harms and carried that the request of Weyerhaeuser Company for extension of time until September 15, 1969 be approved.

WEYERHAEUSER COMPANY Waste Discharge Permit Agenda item P(11)

Mr. Jensen reviewed the proposed conditions for a new waste discharge permit recommended by the staff for the Weyerhaeuser Company mill located at North Bend.

It was MOVED by Mr. McPhillips, seconded by Mr. Waterman and carried that the waste discharge permit for the Weyerhaeuser Company mill at North Bend be granted as recommended by the staff.

HOUSEBOATS

Mr. Bolton presented the staff report covering the request of the Waterfront Owners and Operators Association for permission to use primary treatment and chlorination until July 1972 for houseboats and moorages located in the lower Willamette River and Multnomah Channel.

Mr. J.T. Burtchaell, owner of the Watery Lane Moorage, was present and argued for approval of the request. He also referred to the by-passing of sewage and wastes from Portland's Umatilla pump station and contended that it would not do much good for his moorage to connect to that part of the city's system. Mr. Bolton said the city has been requested to correct its deficiencies.

After further discussion it was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the request of the Waterfront Owners and Operators Association be denied.

Mr. Mosser assured Mr. Burtchaell that the Sanitary Authority would do everything possible to get the city sewer system corrected.

CROWN ZELLERBACH CORPORATION, Lebanon Agenda item L(3)

It was MOVED by Mr. Mosser, seconded by Mr. Waterman and carried that the waste discharge permit for the Crown Zellerbach Corporation pulp mill at Lebanon be approved as proposed by the staff.

REYNOLDS METALS COMPANY, Troutdale

Mr. Skirvin reviewed the staff report and recommendations regarding conditions for approval of the proposal by the Reynolds Metals Co. to enlarge production and to improve control of atmospheric emissions at its Troutdale aluminum plant, copies of which have been made a part of the Authority's permanent files in this matter.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the Reynolds Metals Company proposal be approved with the conditions recommended by the staff.

The meeting was recessed at 12:30 p.m. and reconvened at 2:00 p.m.

ST. HELENS WASTE DISCHARGE PERMIT Agenda Item K(3)

Mr. Katzel reported that a letter dated June 20, 1969 from the City Recorder set forth a detailed time table for financing sewers in the Railroad Addition of St. Helens. It indicated a bond election would be held at the primary election in May 1970. Mr. Katzel recommended the city be required to have the project under contract by August 1, 1970 and completed by August 1, 1971. He suggested that the city's present waste discharge permit be extended to August 31, 1969 when new provisions will be incorporated in the renewed permit.

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the present waste discharge permit for the city of St. Helens which previously had been extended to July 1, 1969 be further extended to August 31, 1969 and that before that date a new permit be prepared requiring the city to have the Railroad Addition sewers under construction by August 1, 1970 and completed by August 1, 1971 and setting forth a detailed program and timetable for providing by not later than July 1, 1972 approved secondary treatment facilities.

GARIBALDI WASTE DISCHARGE PERMIT Agenda Item K(4)

Mr. Katzel presented the staff report regarding the city of Garibaldi. Because the city has failed to meet the provisions of its present waste discharge permit which expires June 30, 1969, he recommended that renewal of the permit be denied.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the staff be instructed to notify the city of Garibaldi that its waste discharge permit will not be renewed and that Mr. Silver be instructed to take appropriate legal action.

THREE D CORPORATION, Astoria Agenda Item K(5)

Mr. Katzel reviewed the problem of sewage disposal at the Three D Corporation property in Clatsop County and pointed out that this company has failed to meet the provisions of its waste discharge permit which expires June 30, 1969.

It was MOVED by Mr. Mosser, seconded by Mr. Waterman and carried that the Three D Corp. be notified that its application for renewal of its waste discharge permit is denied and that Mr. Silver be instructed to take appropriate legal action.

KAISER GYPSUM COMPANY, INC. Agenda Item L(6)

Mr. John D. Cassidy, Plant Manager, was present and requested certain modifications in the conditions proposed by the staff for renewal of the Kaiser Gypsum Company waste discharge permit. He requested a year extension in the deadline for providing secondary treatment. The previous deadline was June 30, 1969. He questioned the May 31, 1970 expiration date and the flow limitation of 0.6 mgd.

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that the waste discharge permit for the Kaiser Gypsum Company, Inc. plant at St. Helens be renewed as recommended by the staff with the exception that the expiration date be changed to July 31, 1970 and condition 1(c) be changed to 500 lbs/day.

Under the renewed permit secondary treatment is required by not later than September 1, 1969.

WASTE DISCHARGE PERMIT RENEWALS, GROUP I (Industrial)

Recommended conditions for renewed waste discharge permits having been prepared by the staff and copies forwarded in advance of the meeting to the members of the Authority and to the applicants, it was MOVED by Mr. Harms, seconded by Mr. Mosser and carried that the waste discharge permits as recommended by the staff be renewed for the following seven industries: (1) Agnew Plywood Company, Grants Pass, (2) Coast Packing

Company, Ontario, (3) Harvey Aluminum Company, The Dalles, (4) Edward Hines Lumber Company, West Fir, (5) Pennwalt Corporation, Portland, (6) Standard Oil Company, Willbridge Plant, Portland and (7) T.P. Packing, Klamath Falls.

Mr. Waterman abstained from voting on the permit for the Pennwalt Corporation.

WASTE DISCHARGE PERMIT RENEWALS, GROUP II (Domestic)

Mr. Lynd presented the recommended conditions for renewal of the waste discharge permits covered by the following action.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the waste discharge permits as recommended by the staff be renewed for (1) City of Philomath, (2) South Umpqua Public Schools, (3) City of Tillamook and (4) Uplands Sanitary District.

WASTE DISCHARGE PERMIT RENEWALS, GROUP III (Industrial)

Recommended conditions for renewed waste discharge permits having been prepared by the staff and copies sent prior to the meeting to the applicants and Authority members, it was MOVED by Mr. McPhillips, seconded by Mr. Waterman and carried that the waste discharge permits as recommended by the staff be renewed for (1) American Can Company, Halsey, with the exception that in condition No. 7 the word "average" be inserted in line 1 ahead of the word "effluent" and in line 2 "20" be changed to "30", (2) Anodizing, Inc., Portland, (3) Cascade Construction Company, Portland, (4) Clyde's Redimix and Gravel, Cave Junction, (5) Douglas Fir Plywood, Dillard, (6) GAF Corporation, Progress, (7) M.C. Lininger & Sons, Ashland, (8) M.C. Lininger & Sons, Medford, (9) Olson-Lawyer Lumber, Medford and (10) Pacific Power & Light Co., Mill City.

WASTE DISCHARGE PERMIT RENEWALS, GROUP IV (Domestic)

It was MOVED by Mr. Mosser, seconded by Mr. Waterman and carried that the waste discharge permits as recommended by the staff be renewed for (1) City of Ashland, (2) City of Baker except that in condition No. 1 the date July 1, 1969 be changed to October 15, 1969, (3) City of Bend, (4) Cosmopolitan Investment Co., Portland, (5) City of Dallas, (6) City of Eagle Point, (7) City of Gervais, (8) Holly Hills, Inc., Wilsonville, (9) City of Jacksonville, (10) Milo Academy, (11) City of Oakridge,

(12) City of Ontario, with the exception that in condition No. 1, July 1, 1969 be changed to September 15, 1969, August 1, 1969 be changed to October 1, 1969 and September 30, 1969 be changed to December 31, 1969. (13) City of Prairie City, (14) City of Pendleton, (15) Shady Vista Mobile Park, Shady Cove, (16) City of Silverton, (17) Taho Development Company, Neskowin, (18) City of Talent, (19) T & W Equipment Co., Portland, (20) Twin Rocks Sanitary District, and (21) White City Sanitary District.

NEW WASTE DISCHARGE PERMITS, GROUP V

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that new waste discharge permits as recommended by the staff be approved for (1) Beaver Rock Products, Inc., Galena, (2) City of Cannon Beach, (3) William D. Clark Mobile Home Park, Boring, (4) Fishhawk Lake Recreation Club, Clatsop County, (5) Metier Corporation, Portland with the exception that in condition No. 2(c) (6) "ppm" be changed to "JTU", (6) Walter R. Parrott Trailer Park, Clackamas County, with the exception that the expiration date be changed to December 31, 1970, (7) River Gate Development Co., Trailer Park, Lake Oswego, (8) Trew Corporation Mobile Park, Wilsonville, and (9) City of Tualatin.

TAX CREDIT APPLICATIONS

Mr. Skirvin reviewed briefly the applications and staff evaluations pertaining to tax credits for air pollution control facilities installed by (1) Western Steel Casting Co., Portland, (2) Leonetti Furniture Co., Beaverton and (3) General Foods Corporation, Hillsboro. He said the installation made by Western Steel Casting is operating exceptionally well.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that tax credits be approved as recommended by the staff for (1) Western Steel Casting Co. pursuant to application T-77 for facilities costing $38,631.11, (2) Leonetti Furniture Company pursuant to application T-83 for facilities costing $18,187.31 and (3) General Foods Corporation pursuant to application T-41 for facilities costing $21,400.23.

MT. PITT LUMBER COMPANY, MEDFORD

Mr. McKenzie reported that this company had awarded the necessary contracts and was three weeks ahead of construction schedule until the installation was halted by a labor strike.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that this matter be continued until the next meeting.

ROGUE RIVER

Mr. Heck Timeus was present and showed a series of colored slides showing conditions in the main Rogue River and certain of its tributary streams. Mr. Mosser thanked Mr. Timeus for his efforts and suggested that the staff investigate the M.C. Lininger sand and gravel operations on the Rogue River.

MISCELLANEOUS

It was MOVED by Mr. Mosser, seconded by Mr. Harms and carried that FWPCA be requested to monitor the waters and aquatic biota of the state for the purpose of determining if the pesticide concentrations (DDT etc.) have reached a level that needs correction.

Mr. Harms nominated Mr. McPhillips to serve as Chairman of the new Environmental Quality Commission effective July 1, 1969. Mr. Waterman MOVED that the nomination be closed and Mr. McPhillips was elected unanimously.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that Kenneth H. Spies be appointed Director of the Department of Environmental Quality effective July 1, 1969 and that the amount of his bond be $1,000.

The members and staff then commended Mr. Mosser most highly for the outstanding service that he has rendered to the Authority and people of Oregon during the past two years.

The meeting adjourned at 5:00 p.m.

Respectfully submitted,

Kenneth H Spies

Kenneth H. Spies, Secretary

Project Plans

During the month of May, 1969, the following 26 sets of project plans and engineering reports were reviewed and the action taken as indicated by the Water Quality Control Section.

Date	Location	Project	Action
5/1	Ontario	Sewer District No. 26	Prov. app.
5/2	Jackson County	Callahan's Lodge preliminary report - lagoon	Prov. app.
5/8	Round Hill San. Dist.	Pump station and force main	Prov. app.
5/7	Lane County	Pier Point Inn, Glenada, preliminary report - sewage treatment plant	Prov. app.
5/7	Silverton	Stayton Canning Co., outfall, pump station, surge pond and irrigation system	Prov. app.
5/8	West Slope San. Dist.	Center Crest Subd. sewers - nonuse	Prov. app.
5/8	Springfield	Emerald Park, Third Addition, sewers	Prov. app.
5/8	Tigard	Hunzicker Street sewer	Prov. app.
5/8	North Bend	Clark Street sewer	Prov. app.
5/8	North Bend	"D" Street sewer	Prov. app.
5/9	Gresham	Angela Park sewers	Prov. app.
5/9	Gresham	Stark Street trunk extension and Lindy Addition sewers	Prov. app.
5/9	Portland	N.W. St. Helens Road, Doane Avenue sewers	Prov. app.
5/9	Portland	N.W. St. Helens Road, N.W. 35th sewers	Prov. app.
5/9	Portland	N.W. Front Avenue, east from N.W. Kittridge sewers	Prov. app.
5/9	Aloha San. Dist.	Michelle Park sewer	Prov. app.
5/9	Aloha San. Dist.	Terryanne Park, Plat #2, sewer	Prov. app.

Date	Location	Project	Action
5/9	East Salem Sewer and Drainage Dist. #1	Santana Village, Phase 1, sewers	Prov. app.
5/13	Troutdale	Weedin Addition sewers	Prov. app.
5/23	Gladstone	Tim's View Subdivision sewer	Prov. app.
5/27	Sweet Home	Report on STP add.	Prov. app.
5/28	Hillsboro	Westside plant, sewage treatment plant	Prov. app.
5/29	Portland	N.W. Thurman and private property sewers	Prov. app.
5/29	Portland	N. Basin and 2 unnamed streets sewers	Prov. app.
5/29	Milwaukie	Fieldcrest-Mason Lane sewers	Prov. app.
5/29	Tualatin	Sewage Treatment Plant	Prov. app.

PROJECT PLANS AND REPORTS

The following project plans or reports were received and processed by the Air Quality Control staff during the month of May 1969.

Date	Location	Project	Action
16	Prairie City	Prairie City Tbr. Co. Wigwam waste burner	Additional information requested
21	Prairie City	Strawberry Post & Pole Co., Wigwam waste burner	Additional information requested
27	Portland	Columbia-Willamette Air Pollution Authority Federal Grant Application	Approved with comments
27	Salem	Mid-Willamette Valley Air Pollution Authority Federal Grant Application including Supplemental Application	Approved with comments
28	Eugene	Lane Regional Air Pollution Authority Federal Grant Application including Supplemental Application	Approved with comments

Oregon State Sanitary Authority Staff Evaluation
of PGE Co. Application for a
Waste Discharge Permit for its
Proposed Trojan Nuclear Power Plant

PGE Company is proposing construction of a 1,118 megawatt (net electrical capacity) pressurized water nuclear power plant at its "Trojan" site located on the Oregon side of the Columbia River about one-half mile south of the community of Prescott and 38 air miles north of downtown Portland. The plant is scheduled for completion in September 1974.

Present-day nuclear power plants are inherently inefficient in their conversion of heat energy into electrical energy and approximately 2/3 of the total heat output of the nuclear reactor must be "wasted" back to the environment. The PGE proposal includes construction of a single, large (approximately 400 ft. high and 350 feet base diameter) natural draft cooling tower which will be designed to dissipate an estimated 90 to 95% of the waste heat from the project into the atmosphere.

PGE Company filed an application[1/] with the Sanitary Authority on April 9, 1969, for a permit to discharge liquid wastes from the project into the Columbia River at river mile 72.8. The Company also submitted in support of its waste discharge permit application a report[2/] of a study made by NUS Corporation evaluating the potential atomospheric effects of the water vapor emissions from the cooling tower.

The principal operating components of the proposed installation consist of a nuclear reactor which serves as the heat or energy source, a steam generator, a steam turbine-electrical generator unit, a steam condenser and a cooling tower. These components are linked together by three separate and distinct liquid (water or water-steam) loops or cycles as follows:

(1) The "primary" or reactor coolant cycle which recirculates water through the reactor "core" to cool the reactor and transfer the heat to the steam generator.

1/ Exhibit A attached

2/ "Environmental Effects of Cooling Tower Operation at the Trojan Site" (on file and may be reviewed at Oregon State Sanitary Authority office in Portland.)

(2) The "secondary" or steam cycle which conveys the steam from the steam generator to the turbine and the condensed steam in the form of hot water back to the steam generator.

(3) The condenser cooling water cycle which recirculates cooling water between the cooling tower and the steam condenser.

Each of these cycles operates essentially as a "closed" system except that a small percentage of the recycled water in each circuit must be more or less continuously removed as "blowdown" in order to keep chemical concentrations within reasonable limits.

During routine operations, principal liquid waste discharges will consist of total plant blowdown waters which will be characterized by moderate amounts of waste heat; low concentrations of chemicals which are added to control pH, corrosion, scaling and biological growths in all cycles (and reactivity in the reactor); small amounts of low-level radioactive wastes; and effluent from the secondary sewage treatment plant which will serve the plant employees and visitors.

Discharges to the atmosphere will consist of relatively large volumes of clean water vapor from the cooling tower and small quantities of radioactive gases bled off from the reactor coolant cycle, and released, after holding to permit decay, through a stack probably in combination with the reactor building ventilation air.

LIQUID WASTES

Heated Water Discharges

Heated water discharges will come almost entirely from the condenser cooling water blowdown. These discharges will be greater in summer than in winter and will be greatest for relatively short periods when the nuclear reactor is shut down for annual refueling or for any other reason. Exhibit A of the PGE application (attached) provides a detailed description of the various operational modes and of conditions accompanying shutdown of the plant and cool down of the reactor.

These are summarized briefly as follows:

Operational Mode	Liquid Waste Discharge GPM	MGD	cfs	Temp. of Discharge °F
Winter (min.)	1,020	1.5	2.3	65
Summer (max.)	5,675	8	12.6	101
Avg. Operation	3,534	5	7.9	80
Plant Cooldown				
Hours after shutdown				
0	1,000-5,500	1.5-8	2.2-12	65-80
4	26,000	37	58	15°F above river temp.
20	35,000	50	78	10°F " " "
120	20,000	29	44	6°F " " "

Minimum flows in the Columbia River at the Trojan site, averaged over one tidal cycle, are expected to be in excess of 100,000 cfs assuring dilution of plant discharges of at least 1,000 to 1 under the most adverse conditions of maximum waste discharge and minimum river flows.

These heated waste discharges are not expected to cause any measurable increase in river water temperature except possibly in the immediate vicinity of the effluent diffuser. The proposed method for handling heated water discharges is considered to be compatible with Sanitary Authority temperature standards for the Columbia River provided that plant shutdowns are not scheduled when river temperatures are high.

Chemical Additives

Addition of chemicals is proposed in minimum amounts necessary to adjust pH and control corrosion, mineral deposits and biological growths in the various liquid cycles and reactivity in the reactor as follows:

Chemical Added	Amount	Point of Addition	Purpose
Sulfuric Acid	9500 lbs/day (maximum)	Condenser cooling water cycle.	pH adjustment, prevent scale formation and calcium deposits

Chemical Added	Amount	Point of Addition	Purpose
Blend of poly-phosphates chromates and zinc	1000 lbs/day (max)	Condenser cooling water cycle	Corrosion Control
Chlorine gas as hypochlorite	38 lbs/day available chlorine	Condenser cooling water cycle	Slime and fungus control
Sulfuric acid Caustic Soda	170 lbs/day 180 lbs/day	Industrial water treatment system	Regeneration of cation-anion demineralizers.
Volatile ammines (ammonia, morpholine, cyclohexylamine, hydrazine)	2 lbs/day	Steam cycle	pH adjustment and corrosion control
Orthophosphates	4 lbs/day	Steam cycle	pH adjustment and corrosion control
Boric Acid	0.7 lbs/day	Reactor coolant cycle	Reactivity control
Lithium hydroxide	2.0 lbs/day	Reactor coolant cycle	pH control
Hydrazine	0.5 lbs/day	Reactor coolant cycle	Oxygen control

These chemical additives would be neutralized and discharged with the 1.5 to 8 MGD of total plant blowdown and would result in barely measurable and insignificant increases in concentrations in the river. Estimated maximum concentrations of the various chemical additives in the plant blowdown and after dilution in the river are given on page 4 of Exhibit A of the PGE application (attached).

Low-Level Radioactive Liquid Wastes

Practically all of the radioisotopes present in the waste effluents from a power reactor originate in the primary coolant and appear in the wastes as by-products resulting from repurifying the coolant.

The radioactive constituents are derived primarily from activation (by the neutron flux of the reactor) of corrosion products, chemical additives and natural impurities in the water itself. The primary coolant water is treated and demineralized to keep impurities at very low levels and thereby reduce the opportunity for activation products.

In addition, some fission products are invariably present in the primary or reactor coolant cycle due to the presence of "tramp" uranium contamination on the outer surfaces of the fuel cladding. Fission products may also leak into the coolant through defective cladding and there is evidence that some fission-product tritium may be present as a result of diffusion through stainless steel fuel cladding.

In the absence of fuel failures, the activity remaining in the reactor cooling water after several hours of decay is attributable mainly to activated corrosion products. Fuel cladding failures, however, can result in significant concentrations of fission products appearing in the primary coolant.

Appreciable quantities of tritium (^{3}H) are produced in the reactor coolant water by several mechanisms, but in a pressurized water reactor, such as is proposed by PGE, the principal sources are ternary fission having a triton as one of the fission fragments and neutron capture reactions with coolant additives such as boron, lithium and ammonia.

Tritium occurs principally as tritiated water in the reactor coolant cycle where tritons (^{3}H) take the place of normal hydrogen atoms (H) in a small fraction of the water molecules. Since conventional treatment and concentration processes such as filtration, ion-exchange and evaporation do not remove appreciable amounts of tritium from the liquid effluents, most of the tritium in reactor waters is eventually released to the environment some by evaporative losses but mostly in the liquid wastes.

Because of its inherent untreatability and relatively long half-life (approximately 12 years) tritium may comprise between 50 and almost 100% of the total activity in reactor discharges to the environment.

The maximum permissible concentration (MPC) for tritium, however, is much higher than for most common fission products. The MPC for tritium is 10^{-3} uCi/ml and because of its short biological half-life (12 days), its low disintegration energy, and uniform distribution in the body its relative health hazard is smaller than for most other fission products.

Miscellaneous sources of radioactive wastes are wastes from decontamination operations, laundry, analytical laboratory, fuel storage pool, and solid wastes including replaced reactor components and instruments and contaminated tools, laboratory ware and decontamination materials such as paper and rags.

PGE has proposed, in preliminary form, a radioactive waste treatment and disposal system designed to keep radioactive waste discharges to "lowest practicable levels" and well within the limits prescribed by AEC regulations (Title 10 Code of Federal Regulations, Part 20).

Even though it has expressed its intention to keep radioactive discharges from the plant as low as is practicable, PGE Company has requested permission to discharge radioactive wastes within the limits prescribed by the AEC in 10 CFR 20. These wastes would be discharged with the total plant blowdown and would be subjected to extensive dilution with river water. Based on experience gained from existing power reactors, it is believed that the PGE reactor can be operated so that radioactive waste discharges will be well below the MPCs prescribed by 10 CFR 20. After dilution in the river, concentrations of specific radioisotopes in the river water should be essentially unchanged from present levels which are generally considerably less than 1% of their respective MPC levels for an uncontrolled area.

Sanitary Wastes

The company proposes to provide secondary treatment and effluent chlorination for sanitary wastes from operating personnel and visitors. This proposed treatment, subject to final approval of detailed plans and specifications, would be consistent with Sanitary Authority requirements.

ATMOSPHERIC DISCHARGES AND EFFECTS

Water Vapor

Based on past climatological data for the Trojan area and the cooling needs for the proposed installation, it has been calculated that between 16 and 24 millions of gallons per day (MGD) of water will be evaporated into the atmosphere by the cooling tower. Minimum vapor emissions will occur

during winter and maximum vapor emissions will take place during the summer. However, because of the higher relative humidities and cooler temperatures, visible vapor or "plume" persistence and potential atmospheric problems are more likely to occur in winter.

The NUS Corporation conducted a study for PGE for the purpose of determining the possible effects of the water vapor emissions on the natural fog regime of the "Trojan" area, and delineation of possible interactions with air contaminants from other local emission sources.

Included in the first part of the study were characterization of the present ground fog regime of the area, evaluation of tower operation effects on ground fogging probabilities, and evaluation of persistence of the moisture plume aloft under unfavorable atmospheric conditions. Climatological data from Kelso, Portland and Salem airports were used in these segments of the study. Computer programs developed by NUS Corporation were utilized in the fog probability and plume persistence studies, while the interaction investigation primarily involved a study of nearby contaminant sources and a study of available information on interactions between their emissions and moisture.

The report concludes that October and November are the months of highest fog probability in the Kelso area (30% probability of nighttime natural fog), that dewpoint depression and windspeed are the meteorological factors most important in the fog-forming process, and that fog formation occurs almost exclusively under neutral or stable conditions. NUS further concluded that during the periods when fog probability was highest, tower operation would have essentially no effect on the area's natural fog regime.

Regarding persistence of a visible plume aloft, NUS concluded that, under most conditions, the plume would dissipate within a mile of the tower, but under conditions of high moisture, light winds, and neutral stability, the visible plume could extend as much as 10 - 15 miles and attain a thickness of 1/4 mile and a width as great as 2 miles. However, this conclusion was qualified by a statement that the probability of such occurrences was quite small, and further that the effects of tower operation

on the Longview-Kelso area (in Washington), the nearest population center, would be negligible.

Atmospheric interaction between the moisture from the cooling tower and air contaminants common to the area were concluded by NUS not to be a problem.

The staff concluded that within its scope, the NUS report on the environmental aspects of cooling tower operation at the Trojan site provides an accurate evaluation of possible detrimental effects.

Based on its own observations of operating cooling towers in the Appalachian region of the United States, the staff further concludes that:

(1) The cooling tower plume should not contribute to local ground fogging or ground level icing conditions.

(2) The plume should be small and barely visible on warm dry days characteristic of summertime conditions at the Trojan site.

(3) The plume could be large, quite dense and persist for several miles and contribute to natural, local low-cloudy conditions on cool, humid days characteristic of winter conditions.

(4) Direct carry-over of entrained water droplets from the cooling tower can be effectively controlled by "drift eliminators" (angular vanes) installed in the towers, and misting or rain-out from the vapor plume should not be a problem.

(5) Large natural draft, parabolic cooling towers are not necessarily aesthetically displeasing in appearance.

Low-Level Radioactive Gases

Pressurized water reactors operate with a "closed" reactor coolant cycle and gases are removed only when the coolant is withdrawn (blowdown) or as a result of leakage.

Fortunately, many of the radioisotopes in the reactor coolant have such short half-lives that they are considered to be of little or no consequence shortly after reactor shutdown or following separation from the reactor water. This is particularly true of gaseous wastes which

after several minutes of hold-up for decay contain primarily the activation products Nitrogen-13 with a half-life of about 10 minutes, Argon-41 with a half-life of 1.8 hours and isotopes of the noble-gas fission products, Krypton and Zenon. There is usually sufficient gas storage capacity provided at a pressurized-water reactor to allow several weeks of decay before release if desired. The radioactive gases are customarily released from the decay tanks at a controlled rate through high efficiency filters for particulate removal prior to discharging with large quantities of air at elevations from 100 to 400 feet above the ground.

Details of radioactive gas handling, storage and release have not as yet been made available to the Sanitary Authority staff by PGE; however, it should be possible to keep the discharge levels well within AEC and Oregon State Board of Health maximum permissible concentrations under routine operation and during all "anticipated" emergency conditions.

Conclusions and Recommendations

In consideration of PGE's specific proposal to construct a 1,118 megawatt nuclear power plant and natural draft cooling tower at its Trojan site, the staff has concluded as follows:

1. With the use of the cooling tower as proposed and with plant shutdowns scheduled to avoid periods of maximum natural river temperatures, the Columbia River will be adequately protected against thermal pollution and the proposed heated water discharges would comply with Sanitary Authority temperature standards for the Columbia River.

2. The quantities of chemical additives which will actually be required for water "conditioning" will probably be considerably less than indicated in the application, but even if the amounts indicated are used these should not result in measurable increases or deleterious effects in the river.

3. It is concluded that the use of a natural draft cooling tower is the most acceptable alternative to the waste heat dissipation problem at the Trojan site. The cooling tower vapor plume will be readily noticeable during normal wintertime conditions of low temperatures and high humidities. It probably will contribute somewhat to natural low-cloudy conditions in the Trojan area under the most adverse weather conditions, but due to the cooling tower height and the naturally good rising characteristics of the plume it should not contribute to ground-level fogging or icing.

4. It is the staff's opinion, based on operating experience at existing installations, that the proposed nuclear power plant can be operated under routine and anticipated emergency conditions with radioactive discharges well below maximum permissible discharge limits for both air and water that are allowed by AEC (10 CFR 20) and Oregon State Board of Health Regulations.

The adequacy of safeguards to be provided against accidental releases of radioactive materials to the environment cannot be evaluated until the Facility Description and Safety Analysis Report, required by AEC, before a construction permit application is considered, is made available.

It is the staff's opinion, however, again based on operating experience at existing installations, that the AEC procedures and requirements are adequate, within the limits of practicability, to protect the health and safety of the public and the offsite environment.

AEC procedures provide for review of each proposed reactor installation by the Advisory Committee on Reactor Safeguards, the Division of Reactor Licensing of the AEC, and by the Nuclear Facilities Section of the U.S. Public Health Service National Center for Radiological Health.

These reviews include detailed study of the potential for accidents that might result in large releases of fission products to the environment.

In addition Federal law requires AEC to hold a public hearing prior to issuing a permit to construct a power reactor and another hearing may be held, if a controversy exists, prior to issuing a license to operate the facility. The license to operate contains extensive specific requirements regarding safety procedures and radioactive discharges.

In order to facilitate orderly progress by PGE in developing its detail plans and in processing its applications for the necessary permits and licenses required for a nuclear power installation it is recommended that a waste discharge permit be issued to PGE. The initial permit should indicate preliminary acceptance of PGE's proposal and make it clear that subsequent permits would be contingent upon approval of final plans and more detailed information relative to air and water quality control facilities and procedures. The staff's specifically recommended waste discharge permit conditions are attached.

H-1

RECOMMENDED WASTE DISCHARGE PERMIT CONDITIONS

Prepared by the Oregon State Sanitary Authority Staff

PRELIMINARY

Recommended Expiration Date: 12-31-73

APPLICANT:

Portland General Electric Company
621 S. W. Alder Street
Portland, Oregon 97205

Re: Trojan Nuclear Power Plant near Prescott

REFERENCE INFORMATION

File Number: 71052
Appl. No.: 751 Received: 4-9-69
Major Bn: Columbia Minor Bn:
Receiving Stream: Columbia River
River Mile: 72.8
County: Columbia

Until such time as this permit expires or is modified or revoked, Portland General Electric Company is herewith permitted to proceed with the design, construction and installation of facilities as described in its application No. 751, dated April 9, 1969.

The above activities must be carried out so as to comply with the requirements, limitations and conditions which follow.

1. Detailed plans and specifications for air and water quality control facilities must be approved by the Sanitary Authority before actual construction of said facilities is begun. The detailed plans for the radioactive waste treatment and control facilities must be accompanied by estimates of specific radioisotope concentrations in the liquid and gaseous waste streams.

2. Copies of all Facilities Description and Safety Analysis Reports shall be made known and available to the Sanitary Authority as soon as they are available for distribution to anyone.

3. Facilities for control of air and water quality shall be designed, constructed and operated at all times so as to keep heated waters, radioisotopes and residual chemical discharges to the river to the lowest practicable levels.

4. Heated water discharges shall not exceed 8.5 MGD or 101° F except during shutdown of the reactor.

5. Heated water discharges shall not exceed 50 MGD or 15° F above background river water temperatures during reactor cooldown operations. Routine shutdown of the reactor shall not be scheduled when Columbia River water temperatures adjacent to the Trojan site exceed 66° F,

6. Residual chemicals in the waste discharges shall be kept at lowest practicable concentrations at all times and shall not exceed the following maximum levels in the plant blowdown stream:

Proposed addition to Condition No. 5

unless the heated water discharges to the river are controlled so that the amount of heat added to the river per unit of time does not exceed the amount that would have been allowed to be added to the river during the same time interval had the plant continued in operation.

Boron	0.48 ppm
Lithium	0.002 ppm
Sodium	170 ppm

It should be understood that the above concentrations may be adjusted up or down based on either more refined estimates or actual operating experience consistent with the philosophy of highest and best practicable treatment and control and no allowable degradation of existing water quality which would interfere with any present or potential beneficial use.

7. The pH of the total plant discharge shall be maintained between 6.5 and 8.0.

8. Specific radioisotope concentrations in liquid and gaseous discharges shall be kept at lowest practicable levels and shall not exceed in the liquid or gaseous discharge streams the limits for individual or combined radioisotopes prescribed by AEC in 10 CFR Part 20 and by the Oregon State Board of Health in Appendix A, Part C of its regulations for the control of Sources of Ionizing Radiation. It should be understood that prior to actual start-up of the power plant, discharge limits will be established for specific radioisotopes based on estimates submitted by PGE and the quality of effluents normally expected from experiences at other installations.

9. Miscellaneous radioactive and other wastes including solid wastes shall be handled, stored, transported and disposed of in accordance with AEC, USPHS, U. S. Dept. of Commerce and Oregon Board of Health regulations and in a manner not to cause air or water pollution.

10. A pre-operational monitoring program shall be developed in conjunction with the Sanitary Authority and State Board of Health staff and shall be conducted by the permittee to determine background radioactivity levels in pertinent environmental media at suitable locations in the Columbia River and around the plant boundary, including especially agricultural operations, and at the communities of Prescott, Goble and Rainier. All results of the monitoring program shall be promptly submitted to the Sanitary Authority and the State Board of Health.

11. No sewage wastes shall be discharged without said wastes first receiving secondary treatment and disinfection adequate to meet the following effluent standards:

    a. The average daily flow shall not exceed the design flow of the facility.

    b. The monthly average 5-day 20° C Biochemical Oxygen Demand (BOD) shall not exceed 30 milligrams per liter (mg/l).

    c. The monthly average Suspended Solids concentraion shall not exceed 30 mg/l.

    d. The effectiveness of disinfection shall be equivalent to that obtained by adequately mixing sufficient chlorine with the treated waste to provide a minimum residual of 0.5 mg/l after 60 minutes contact time at average design flow.

12. No petroleum base products or other substances which might cause the Water Quality standards of the State of Oregon to be violated shall be discharged or otherwise allowed to reach any of the waters of the state.

13. In the event the permittee is unable to comply with any of the conditions of this permit, for any reason, the permittee shall immediately so notify the Sanitary Authority.

14. This permit is subject to change or modification if the Sanitary Authority finds:

    a. That it was procured by misrepresentation of any material fact or by lack of full disclosure in the application.

    b. That there has been a violation of any of the conditions contained herein.

    c. That there has been a material change in quantity or character of waste or method of waste disposal.

OREGON STATE
BOARD OF HEALTH

STATE OFFICE BUILDING • P. O. BOX 231 • PORTLAND, OREGON • 97207

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Secretary and
State Health Officer

June 12, 1969

Mr. Kenneth H. Spies
Chief Engineer
State Sanitary Authority
1400 S.W. Fifth Avenue
Portland, Oregon 97201

Dear Mr. Spies:

We have reviewed the waste discharge permit and conditions the Sanitary Authority has issued Portland General Electric Company on its proposed nuclear power facility.

The Sanitary Authority staff's evaluation is well prepared and represents a knowledgeable and thoughtful analysis. The reference to low level radioactive liquid and gaseous wastes is accurate and complete to the extent discussed, which is sufficient for this document. It raises the issue of the Oregon State Board of Health's legal responsibility as the radiation control agency, and the responsibility of the Sanitary Authority or its successor agency's role in considering radioactive materials in waste discharge permits.

Many of the specifics pertaining to low level radioactive wastes cannot be listed at this time. Even when the final reactor assembly is completed, it will be impossible to precisely state what these low level radioactive waste components and amounts will be. The fission product contamination of the primary loop coolant represents the single most important source of radioactive waste. This includes fission product solids and radioactive noble gases as the two major problems. Since the fuel elements and cladding cannot be guaranteed (by the manufacturer) some of the "pinhole" or other cladding failures which occur and cause this have to be accepted. Regardless of what these may be, the CFR Part 20 concentrations still apply and in the unfortunate case where the levels exceed anticipated minimums, the plant would have to be shut down immediately and the problems corrected. In no operating plant to date have these levels exceeded one per cent of the CFR Part 20 limits.

Discussion:

Here are the specific comments on this permit:

Condition 8 - Specific radioisotope concentrations in liquid and gaseous discharges will be a condition of the license issued Portland General Electric by the Atomic Energy Commission and will, by existing law, be at or below 10 CFR Part 20 or Oregon State Board of Health Appendix A levels (these are identical). The Atomic Energy Commission license will prescribe levels less than Part 20 limits, depending on meteorological, climatic and other conditions as evaluated by the AEC licensing staff. Humidity, inversion frequencies, heights, etc., will enter into this evaluation. Therefore, condition 8 is redundant and when stated as a "shall be" condition, it represents a jurisdictional preemption of Atomic Energy Commission (Federal) licensing action. It would be in violation of Federal law for the AEC or any other agency to license such a facility to discharge radioisotope concentrations in excess of 10 CFR Part 20.

Condition 9 - This condition is also another "shall" condition and therefore becomes a licensing or permit condition and might also involve jurisdictional preemption, since the AEC will require this by condition in its license to the permittee. If made a part of the permit it should include the U. S. Department of Transportation as one of the regulatory agencies since they have assumed all transportation regulatory functions of radioactive materials.

Condition 10 - This condition is perhaps the one most likely to raise jurisdictional preemption problems with the AEC. It has been discussed in detail and at length on different occasions by different states with the Atomic Energy Commission. It presently is the cause of the Minnesota-AEC controversy.

From a legal point of view and as the Atomic Energy Act presently reads, the AEC clearly retains jurisdiction over all radiation health and safety aspects from nuclear production facilities. Part 50 includes criterion 17 which states: "means shall be provided for monitoring the containment atmosphere, the facility effluent discharge paths and the facility environs for radioactivity that could be released from normal operations, from anticipated transients and from accident conditions". Their position is based on the premise that no one else (State) may impose licensing conditions pertaining to radioactivity levels which would in any way conflict (dual regulation) or preempt this jurisdiction. The Commission will require comprehensive aquatic, terrestrial and other ecological studies. Based on the results of these studies, they will then establish the radioactive discharge limits as related to what was said pertaining to condition 8.

To assure the people of Oregon that the State Board of Health, as the radiation control agency, and the Sanitary Authority are aware and concerned about this problem, the following condition might be substituted for the present condition 10:

> "All results of the proposed monitoring program established by the permittee (Portland General Electric) in cooperation with the Oregon State Board of Health staff to determine background radioactivity levels in pertinent environmental media at suitable locations in the Columbia River and around the plant boundary, including especially agricultural operations, and at the communities of Prescott, Goble, and Rainier, shall be furnished the Sanitary Authority and the Oregon State Board of Health. The results of the monitoring program designed to follow the initial study and to continue the monitoring of radiation levels when the plant is in operation shall be made available to the Sanitary Authority and the State Board of Health when such results are available. Such studies shall also be designed in cooperation with the Board of Health. The Oregon State Board of Health will make available to the State Sanitary Authority, permittee (PGE), and Atomic Energy Commission all results of radiological studies conducted by the Board which may pertain to the permittee's operations".

The Atomic Energy Commission has included a condition in their license which requires the nuclear facility licensee to have an emergency team, emergency monitoring manual and plan for the controlled area, and recently has also required this for the off-site or facility environs. The Oregon State Board of Health should assume the role for the licensee, or in cooperation with the licensee, to develop this plan and the team to assist in incorporating hospitals, fire and police department personnel, and any other such activity as is appropriate in such an emergency procedure. This is because the State has police power, which the Federal government may not assume. Neither does the licensee have such police power. Therefore, the State must assume this very important role where it clearly has jurisdiction and responsibility.

Recommendations:

The Radiation Section of the Oregon State Board of Health recommends that the waste discharge permit be issued and that the Sanitary Authority consider changing conditions 8, 9, and 10 as discussed above.

We agree that attention be paid in such a permit to show the concern of the State in the area of radioactive waste; however, it must be done within the limits of State jurisdiction and Federal law. This should be the overriding consideration.

It is our feeling that when the State of Oregon shows competency in reactor radioactive waste analysis and control from nuclear production and utilization facilities, the AEC will recognize it and transfer the jurisdiction for control at that time.

Sincerely,

G. R. Farmer
Director
Radiation Section

GRF:wh

cc: Dr. Edwards-Press

P.S. I am enclosing a copy of the conclusions of the opinion of the Atomic Energy Commission's General Counsel's interpretation published in the "Federal Register" on May 3, 1969, pages 7273-7274. It covers all details of this controversial area.

Conclusions of the Opinion of the Atomic Energy Commission's General Counsel:

"'By virture of the Atomic Energy Act of 1954, as amended, the individual States may not, in the absence of an agreement with the AEC, regulate source, by-product and special nuclear material from the standpoint of radiological health and safety. Even States which have entered into agreements with the AEC lack authority to regulate the facilities described in the Atomic Energy Act, including nuclear power plants and the discharge of effluents from such facilities, from the standpoint of radiological health and safety. To the extent that "Agreement States" have authority to regulate byproduct, source and special nuclear material, their section 274 Agreements require them to use their best efforts to assure that their regulatory programs for protection against radiation hazards will continue to be compatible with the AEC's program for the regulation of byproduct, source and special nuclear material.'"

Following below is the above-cited interpretation by AEC's General Counsel on jurisdiction over nuclear facilities and materials:

"(a) By virtue of the Atomic Energy Act of 1954, as amended, the individual States may not, in the absence of an agreement with the Atomic Energy Commission, regulate the materials described in the Act from the standpoint of radiological health and safety. Even States which have entered into agreements with the AEC lack authority to regulate the facilities described in the Act, including nuclear power plants and the discharge of effluents from such facilities, from the standpoint of radiological

health and safety.

"(b) The Atomic Energy Act of 1954 sets out a pattern for licensing and regulation of certain nuclear materials and facilities on the basis of the common defense and security and radiological health and safety. The regulatory pattern requires, in general, that the construction and operation of production facilities (nuclear reactors used for production and separation of plutonium or uranium-233 or fuel reprocessing plants) and utilization facilities (nuclear reactors used for production of power, medical therapy, research, and testing) and the possession and use of byproduct material (radioisotopes), source material (thorium and uranium ores), and special nuclear material (enriched uranium and plutonium, used as fuel in nuclear reactors), be licensed and regulated by the Commission. In carrying out its statutory responsibilities for the protection of the public health and safety from radiation hazards and for the promotion of the common defense and security, the AEC has promulgated regulations which establish requirements for the issuance of licenses (Parts 30-36, 40, 50, 70, 71, and 100 of this chapter) and specify standards for radiation protection (Part 20 of this chapter).

"(c) The Atomic Energy Act of 1954 had the effect of preempting to the Federal Government the field of regulation of nuclear facilities and byproduct, source, and special nuclear material. Whatever doubts may have existed as to that preemption were settled by the passage of the Federal-State amendment to the Atomic Energy Act of 1954 in 1959.

"(d) Prior to 1954, all nuclear facilities and the special nuclear material produced by or used in them were owned by the AEC. This Federal monopoly of atomic energy activities was due in large part to the use of atomic energy materials and facilities in our national weapons program, and the large capital investment required for their development. The Atomic Energy Act of 1954 permitted private ownership of nuclear facilities for the first time, but only under a comprehensive, pervasive system of Federal regulation and licensing. That Act recognized no State responsibility or authority over such facilities and materials except the State's traditional regulatory authority over generation, sale, and transmission of electric power produced through the use of nuclear facilities. As interest grew in the private construction of facilities and the use of atomic energy materials, and the numbers of persons qualified in the field increased, questions arose as to the role State authorities should play with regard to the public health and safety aspects of such activities. Several bills were introduced with respect to Federal-State cooperation in 1956 and 1957. An AEC proposed bill which would have authorized concurrent radiation safety standards to be enforced by the States was forwarded to the Joint Committee on Atomic Energy in 1957, but was never reported out. Finally, in 1959, legislation was enacted whose purpose was to promote an orderly regulatory pattern between the Federal and State governments with respect to regulation of byproduct, source, and special nuclear material, while avoiding dual regulation (see section 274a). That legislation added section 274, the so-called Federal-State amendment, to the Atomic Energy Act.

"(e) Section 274 (42 U.S.C. 2021) authorizes the Commission to enter into an agreement with the Governor of any State providing for the discontinuance of regulatory authority of the Commission with respect to byproduct materials, source materials, and special nuclear materials in quantities not sufficient to form a "critical mass." However, section 274c (42 U.S.C. 2021(c)) provides that the Commission shall retain authority and responsibility with respect to the regulation of:

"(1) The construction and operation of production or utilization facilities (note: this includes construction and operation of nuclear powerplants);

"(2) The export and import of byproduct source or special nuclear material or production or utilization facilities;

"(3) The disposal into the ocean of waste byproduct, source or special nuclear materials; and

"(4) The disposal of such other [illegible]

"(4) The disposal of such other byproduct, source or special nuclear material as the Commission determines should, because of the hazards or potential hazards thereof, not be so disposed of without a Commission license.

"(f) The amendment, in providing for the discontinuance of some of the AEC's regulatory authority over source, by-product and special nuclear material in States which entered into agreements with the AEC, made clear that there should be no 'dual regulation' with respect to those materials for the purpose of protection of the public health and safety from radiation hazards.

"(g) Section 274b of the Atomic Energy Act (42 U.S.C. 2021(b) states that:

"'During the duration of such an agreement it is recognized that the State shall have authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards.'

"Section 274k (42 U.S.C. 2021(k) states:

"'Nothing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards.'

"(h) In its comments on the bill that was enacted as section 274, the Joint Committee on Atomic Energy commented that:

"'It is not intended to leave any room for the exercise of dual or concurrent jurisdiction by States to control radiation hazards by regulating byproduct, source, or special nuclear materials. The intent is to have the material regulated and licensed either by the Commission, or by the State and local governments, but not by both.'"

"In explaining section 274(k), the Joint Committee said:

"'As indicated elsewhere, the Commission has exclusive authority to regulate for protection against radiation hazards until such time as the State enters into an agreement with the Commission to assume such responsibility."'

"(i) It seems completely clear that the Congress, in enacting section 274, intended to preempt to the Federal Government the total responsibility and authority for regulating, from the standpoint of radiological health and safety, the specified nuclear facilities and materials; that it stated that intent unequivocally; and that the enactment of section 274 effectively carried out the Congressional intent, subject to the arrangement for limited relinquishment of AEC's regulatory authority and assumption thereof by states in areas permitted, and subject to conditions imposed, by section 274.

"(j) Thus under the pattern of the Atomic Energy Act, as amended by section 274, States which have not entered into a section 274 agreement with the AEC are without authority to license or regulate, from the standpoint of radiological health and safety, byproduct, source, and special nuclear material or production and utilization facilities. Even those States which have entered into a section 274 agreement with the AEC (Agreement States) lack authority to license or regulate, from the standpoint of radiological health and safety, the construction and operation of production and utilization facilities (including nuclear power plants) and other activities reserved to the AEC by Section 274c. (To the extent that Agreement States have authority to regulate byproduct, source, and special nuclear material, their section 274 Agreements require them to use their best efforts to assure that their regulatory programs for protection against radiation hazards will continue to be compatible with the AEC's program for the regulation of byproduct, source and special nuclear material.)

"(k) The following judicial precedents and legal authorities support the foregoing conclusions: Northern California Ass'n, Etc. v. Public Utilities Commission, 37 Cal. Rep. 432, 390 P. 2d 200 (1964); Boswell v. City of Long Beach, CCH Atomic Energy Law Reports, par. 4045 (1960); Opinion of the Attorney General of Michigan (Oct. 31, 1962); Opinion of the Attorney General of South Dakota (July 23, 1964) New York State Bar Association, Committee on Atomic Energy, State Jurisdiction to Regulate Atomic Activities (July 12, 1963). No precedents or authorities to the contrary have come to our attention."

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman P. Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 6, 1969 for June 27 Meeting

SUBJECT: WEYERHAEUSER CO. - Springfield Emission Control Proposal

Weyerhaeuser Company has submitted a proposal for reducing odor and particulate emissions from their kraft mill in Springfield.

The company proposes retiring from service its two oldest existing furnaces and replacing them with a new furnace which eliminates direct contact evaporation. It will have sufficient capacity to allow reducing the load on the third existing furnace. With the exception of eliminating direct-contact evaporation, the furnace will essentially be a duplicate of their existing No. 3 furnace.

For particulate control the new furnace will be equipped with an electrostatic precipitator of 99.6% efficiency.

The method of eliminating direct contact evaporation in the proposed furnace is different from that to be used at American Can at Halsey and Western Kraft's new furnace. Weyerhaeuser's furnace will have an "Air Cascade Evaporator" in which:

1. Flue gases heat up furnace supply air in an indirect contact heat exchanger.
2. The heated furnace air evaporates black liquor which is essentially accomplished in a conventional direct-contact evaporator.
3. The heated air enters the furnace as combustion air. Any odorous gases that may be picked up from the black liquor are presumed to be incinerated.

The present emissions have been estimated on a unit production basis from previously submitted information as follows:

Furnace Number(s)	Pulp Production	Emissions	
		Total Reduced Sulfur lbs/ton	Particulates
1 & 2	400*	2.7*	20
3	650	0.6	10

*Note: The loading on these furnaces has been reduced from the initial 450 tons/day to significantly less than 400 tons/day.

After the new furnace is built, the emissions are estimated to be:

Furnace Number	Pulp Production	Total Reduced Sulfur lbs/ton	Particulate
3	500	.6*	7*
4	650	.04	1¾

Note: The predictions of emissions from No. 3 furnace after its load is reduced are very difficult to make with accuracy. The same black liquor oxidation system will be used for 23% less black liquor, so that its efficiency should increase. Also, a smaller stack-gas particulate loading will lower its precipitator's efficiency, but not proportionately, so that emissions may reasonably be expected to be less than 7 lb/t.

Emissions of TRS from other sources (oxidation tower vents, pulp washers, lime kilns) have been estimated by Weyerhaeuser Co. and will be under study as provided by the regulations for kraft mills.

Start-up of the new furnace would be expected to be in the spring of 1971.

In addition to this major modification the company will control the odors from the primary lagoon which has been a malodorous source on occasions by covering the pond with a plastic cover to prevent malororous gas escapement.

The staff will request Weyerhaeuser Co. to submit a summary of the pilot plant work (which was done at Springfield) on the Air Cascade Evaporator which is to be used in the new furnace, the summary to be complete enough to give an indication of expected performance and problems.

Conclusions:

1. The new furnace will make a significant reduction in odor and particulate emissions at this mill.
2. The expected performance of the new furnace is within the 1975 limits for both particulate and TRS as set forth in the regulations.

Recommendations:

That approval of this preliminary proposal be granted, subject to the following:

1. Submission of emission data ahead of the direct-contact evaporator from their present No. 3 furnace, the data to include representative average and maximum values.
2. Submission for review and approval of plans and specifications for air pollution control equipment and continued compliance with all provisions of the kraft mill regulations.

Weyerhaeuser Company

P.O. Box 275
Springfield, Oregon 97477
A/C 503 • 746-2511

May 7, 1969

Oregon State Sanitary Authority
State Office Building
1400 S.W. 5th Avenue
Portland, Oregon 97201

Attention Mr. Kenneth H. Spies

Gentlemen:

Our pulp and paperboard operations at Springfield have generally been recognized as a leader in our industry in the fight against air and water pollution. We have often echoed the pledge of our president, George Weyerhaeuser, that we will continue to take advantage of every economically feasible technological advance to further protect our environment and its users.

Partially as a result of a pilot plant study made several years ago at the Springfield plant, the Combustion Engineering company has made available a new design for the furnaces used in the recovery of kraft pulping wastes and cooking chemicals. This new design eliminates the contact between the waste "black liquor" and the furnace flue gases, the step which is presently responsible for the generation of the major portion of the kraft odor.

We propose to purchase such a recovery furnace for our Springfield operations, replacing and retiring two old and relatively inefficient units. This $8.5 million mill modernization program will not involve expansion of our pulping facilities, but will allow us to attain the capacity previously authorized by removing the restrictions voluntarily imposed to minimize emissions from the old recovery furnaces. The normal construction schedule would call for start-up in the Spring of 1971.

While we cannot point to a similar recovery unit in operation at the present time, two others will be in operation within the next year, the first this summer. The furnace itself is essentially a duplicate of our large unit constructed in 1965. With studies on this unit as a guide, we are confident that the reduction in air pollution will be significant. At present, total reducible sulphur emitted from the plantsite, 90% of which is from the recovery furnace stacks, is approximately 1.2 lbs/ton of production. With the retirement of the two old furnaces and operation of the new furnace in their place, we expect the emissions to be less than half of the above figure.

The proposed new recovery furnace should contribute less than 10% of the new total emissions.

Similarly, particulate emissions will be reduced by the installation of the most efficient electrostatic precipitator presently available. This equipment is designed to be 99.6% efficient in removal of particulate matter, as compared to the 85% efficiency design which was the maximum available for the old recoveries.

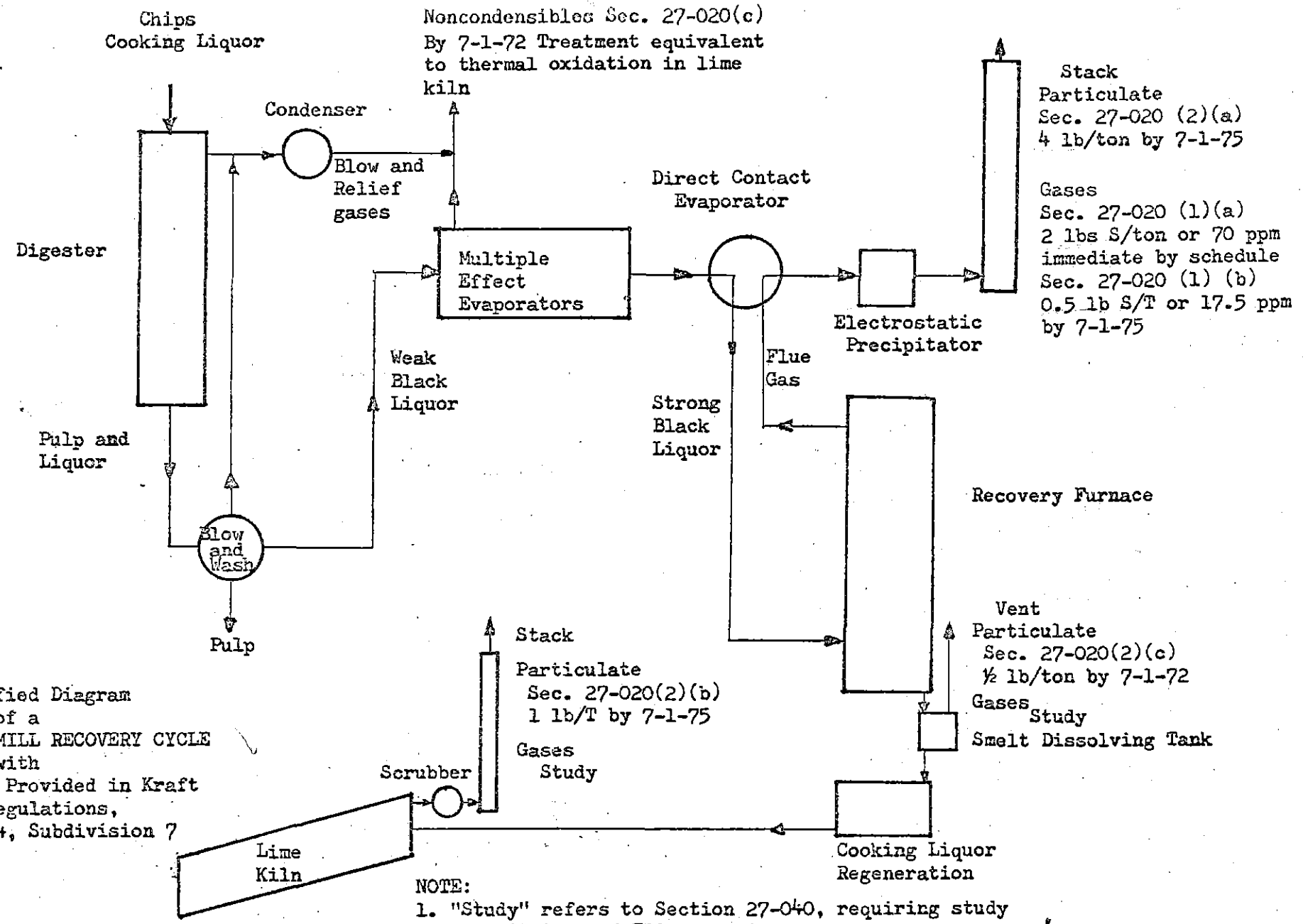
This modernization program will not necessarily mean the elimination of the kraft odor in our community during adverse weather conditions, but the incidence and severity will be significantly reduced. Moreover, we will be provided an opportunity to show what can be done in odor control through continued study and application of technological improvements. The world demand for wood fiber products is steadily increasing, and more waste material is becoming available for use or disposal; accordingly, we are looking toward the time when we can expand our Oregon operations with the confidence that we can meet the needs of the environment.

We are prepared to provide whatever additional information you may require, and to appear before you to present our proposal if you desire. We request your approval of these plans.

Very truly yours,

Frank K. Guthrie
Paperboard Manager

jp



Simplified Diagram
of a
KRAFT MILL RECOVERY CYCLE
with
Limits Provided in Kraft
Mill Regulations,
OAR 334, Subdivision 7

NOTE:

1. "Study" refers to Section 27-040, requiring study of emissions of TRS from minor sources.
2. Gases include Hydrogen Sulfide, Mercaptans, and organic sulfides, all of which are reduced sulfur compounds.

CAA 6-69

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 13th for the June 27th Meeting

SUBJECT: REYNOLDS METALS COMPANY, TROUTDALE

At the meeting of the Sanitary Authority in Coos Bay, the staff was requested to make appropriate wording changes in the conditions and requirements of approval. The attached revised copy was completed after a preliminary draft was reviewed with the company officials and has been submitted to the company.

By the time of the Sanitary Authority Meeting on June 27, 1969, we expect to have a map of proposed boundary area and sampling sites for ambient air and forage.

ADDENDUM

DATE : June 25th for the June 27th Meeting

The company did submit on June 17 a map indicating proposed sites for monitoring fluoride levels in forage and ambient air. A copy of this map and the fluoride standards for ambient air and forage are attached.

The staff having inspected the proposed sampling sites on June 25 concludes that the locations and number of sites are adequate for determining compliance with Item B in the attached revised conditions and requirements for approval.

The staff recommendations are included in the revised conditions and requirements for approval.

III. STAFF RECOMMENDATIONS

It is recommended that the proposed expansion and modernization program be approved subject to the following limitations, conditions and requirements:

A. Data representing the emissions of gaseous fluorides, particulate fluorides, and total particulates shall be submitted on a monthly basis for the courtyard scrubbers, roof monitors, and roof scrubber treatment systems, including but not limited to efficiencies of control equipment. The particulate emission data shall be reported as fluorides and non-fluorides in grains per standard dry cubic foot of gas (air) and pounds emitted per day. The gaseous fluoride emission data shall be expressed as ppm hydrogen fluoride (HF) by volume in dry gas (air) at standard conditions and as pounds HF emitted per day. The Company shall report the number of pots exhausting to the ventilating system during the sampling periods. This information shall be expressed as a percentage of the pots that would exhaust to the sampled system during normal operations. Such tests and reports shall continue on a monthly basis until experience dictates that less frequent reports will suffice.

B. Production and control facilities shall be operated and maintained at all times so that the ambient air and forage standards, as stated in Appendix B, and all other applicable standards, regulations and conditions are not exceeded at agreed upon representative points along an agreed upon plant site boundary. The company shall notify the Sanitary Authority in advance of any process or equipment changes which may result in increasing the emission to the atmosphere of any fluoride or non-fluoride gaseous or particulate matter.

C. The company shall establish a program for regularly scheduled monitoring of fluorides in forage and ambient air. The equipment and procedures used in this program shall be capable of determining compliance with the ambient air quality standards in Appendix B.

Sampling and analysis of forage shall commence June 1, 1969. The Company shall continuously submit the resulting forage data expressed as ppm fluoride ion (F^-) on dried weight basis to the Sanitary Authority on a monthly basis within 30 days of the end of each month commencing with the data for the month of June 1969. The company shall submit on or before August 1, 1969 detailed descriptions of all procedures involved in obtaining and analyzing forage samples.

The company shall submit on or before January 1, 1970, a detailed time schedule for the implementation of the ambient air monitoring program. Information in the schedule shall include start-up dates for all required equipment as well as detailed descriptions of all procedures involved in obtaining and analyzing ambient air samples. Ambient air sampling shall commence no later than March 1, 1970. The company shall continuously submit the ambient air data to the Sanitary Authority on a monthly basis within 30 days of the end of each month commencing with the data for the month of March 1970. Such data shall be expressed as 12 hour concentrations of gaseous fluorides in the form of hydrogen fluoride (HF) on a volume basis.

D. Should any of the applicable ambient air and forage regulations, standards and conditions be exceeded, Reynolds Metals Company shall submit, within 60 days after receiving written notice from the Sanitary Authority, plans and time schedule for the prevention or reduction of air contaminants emitted or the correction of any deficiencies in the plant facilities or the air pollution control systems.

E. The company shall submit emission data and collection equipment efficiencies to typify the emissions from the chlorine fluxing operations including pounds of chlorine used per day and detailed descriptions of the testing apparatus and procedures.

F. Emission test data for the electrostatic precipitator shall be submitted after installation of the proposed cyclone type collector. This information shall be accompanied by detailed descriptions of the testing apparatus and procedures.

G. Emission data in conjunction with descriptions of testing apparatus and procedures for the current cryolite recovery plant shall be submitted for evaluation.

H. The company shall reduce visible emissions from the anode baking operation stack or stacks so as to be in compliance by January 1, 1971 with the current smoke discharge standard which read as follows:

Chapter 334, Oregon Administrative Rules -

"21-011 SMOKE DISCHARGE. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any hour which is:

(1) As dark or darker in shade as that designated as number 2 on the Ringelmann Chart as published by the U. S. Bureau of Mines, Aug., 1955, or,

(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in sub-section (1) of this section.

I. The company shall conduct tests and submit test data including detailed descriptions of apparatus and procedures for gaseous and particulate emissions from the anode baking operation stack or stacks on or before January 1, 1970 and again on or before January 1, 1971.

APPENDIX B

FLUORIDE STANDARDS FOR AMBIENT AIR AND FORAGE

I. Ambient Air Standards:

(1) Gaseous fluorides in the ambient air calculated as HF by volume shall not exceed:

a. Four and one-half parts per billion (4.5 ppb) average for any twelve (12) consecutive hours.

b. Three and one-half parts per billion (3.5 ppb) average for any twenty-four (24) consecutive hours.

c. Two parts per billion (2.0 ppb) average for any seven (7) consecutive days.

d. One part per billion (1 ppb) average for any thirty (30) consecutive days.

II. Forage Standards:

(1) The fluoride content of forage calculated by dry weight shall not exceed:

a. Forty parts per million fluoride ion (40 ppm F^-) average for any twelve consecutive months.

b. Sixty parts per million fluoride ion (60 ppm F^-) each month for more than two consecutive months.

c. Eighty parts per million fluoride ion (80 ppm F^-) more than once in any two consecutive months.

Forage samples shall be taken once each calendar month at 25-35 day intervals to determine compliance with Sections II (1) a., b., c.

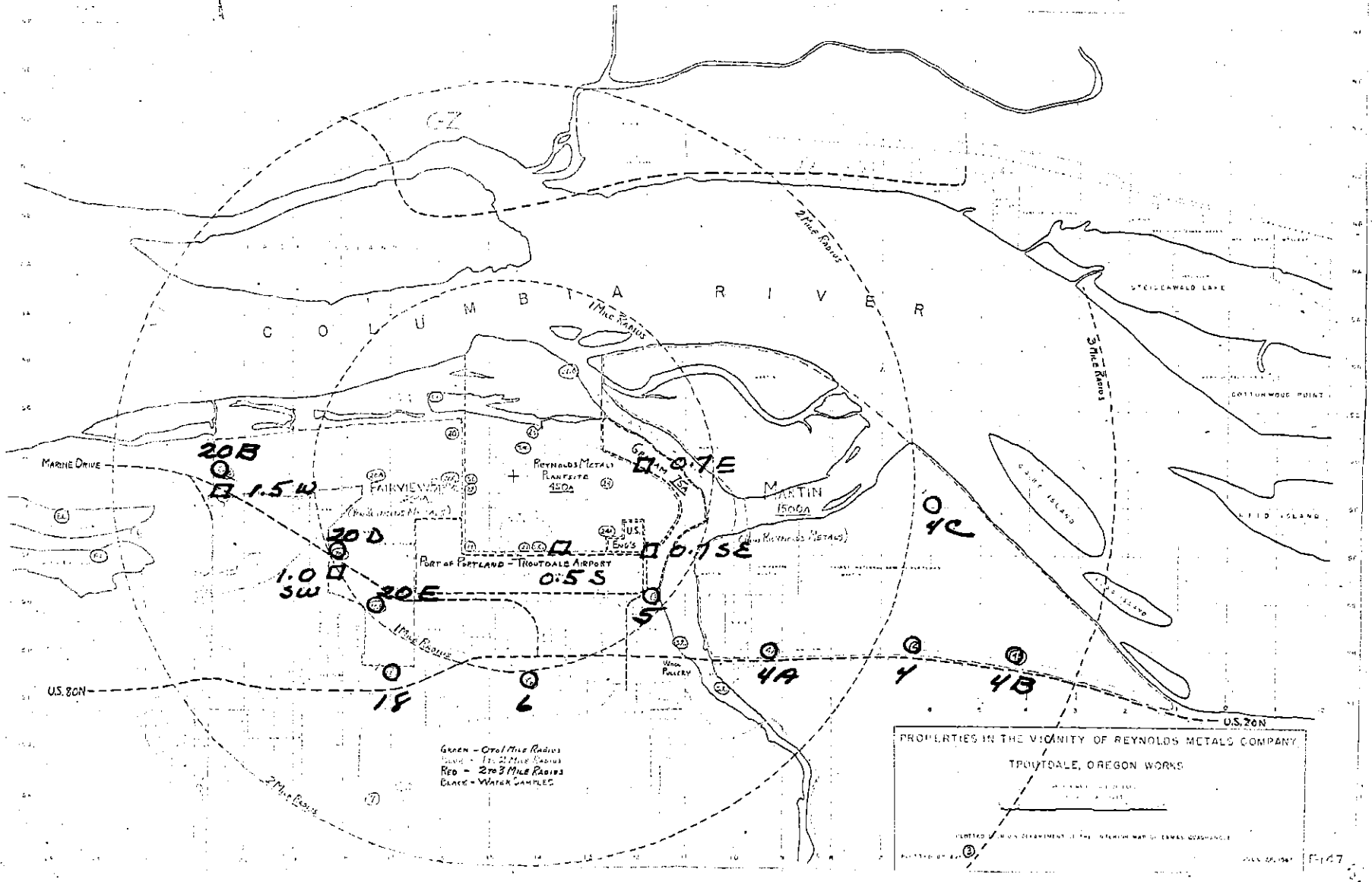
(2) In areas where cattle are not grazed continually, but are fed cured forage, as hay, during the winter, the fluoride content of the hay shall be used as the forage fluoride content for as many months as it is fed to establish the yearly average.

(3) Cured forage grown in the county of Multnomah for sale as livestock feed shall not exceed 40 ppm F^- by dry weight after curing or preparing for sale.

LOCATIONS OF PROPOSED FORAGE AND AMBIENT AIR SAMPLING SITES

Forage Stations - green (O) - numbers indicate station numbers

Ambient Air Stations - blue (□) - numbers indicate distance and direction from center of the aluminum reduction plant.



TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL

DATE : May 20, 1969 for May 23 Meeting

SUBJECT: REYNOLDS METALS CO., TROUTDALE

Attached are copies of letters dated May 12 and two dated April 16, 1969, plus a review entitled "Troutdale Expansion - Atmospheric Control", which together constitute an application for preliminary approval of the following proposal.

I. REYNOLDS EXPANSION PROPOSAL

A. Reduction Facility Addition:

Add a fifth pot line of 28,000 tons/year to the existing four lines (25,000 tons/annum each) to be completed by January 1971. The company proposes to:

1. include computer monitored and operated pots to maintain optimum characteristics within the cell thereby minimizing the volatilization of fluoride compounds,

2. improve capture of evolved fluorides, and

3. provide effective treatment of captured material for removal of objectionable gases and particulates.

B. Existing Facility Modification:

In conjunction with the expansion program, the company proposes to modernize existing plant facilities by installing a new combination ore bin and fume duct system (similar to the new pot design) and new pot hoods to improve collection efficiency on the current 560 cells. The courtyard scrubbers, 16 in number, will be replaced and have improved treatment efficiency. (4 have been replaced and the initial proposal schedules 4 scrubber towers per year to be replaced over the next 3 years beginning in October 1969.)

Details of the company proposal, plant operation and history of the plant are part of the company submission.

II. STAFF EVALUATION

A. Aluminum Reduction Facilities:

The company proposal to add an additional pot line will increase, over current levels, fluoride emissions an estimated 21%, (particulate

fluoride 17.9% and gaseous fluoride 33.2%). The modernization of existing facilities which include increased collection and treatment efficiencies will reduce emissions over current levels an estimated 17.3%. At the completion of both projects, the net effect on emissions will be an estimated increase of 3.7% (particulate fluoride 0.6% and gaseous fluoride 15%). The company has stated the schedule provides for two potline modernization conversions to be completed before the expansion potline is in operation. The maximum increase in emissions will occur in January 1971 and will approximately increase total fluoride ion emissions 15% and gaseous emissions 22%.

Attached are tabular and graphical summaries of calculated emissions for various portions as well as completed projects. (Appendix A-1 and A-2)

The staff, having concluded that the best fume control system for potline emissions is one utilizing an adsorbing solid and cloth type filters (baghouse), does not have any verified data to describe or compare these systems to that proposed by Reynolds Metals Co. The company has evaluated other systems including pre-coated bag filters and concluded "...none indicated any higher degree of efficiency than that of our well-proven wet scrubber system".

No treatment of emissions escaping into the potroom (no roof monitor scrubber system) is proposed for the expansion. The company has stated such treatment is not feasible or necessary because of the high collection and treatment efficiencies on the expanded facilities and consequent low concentration of escaping gases. (These emissions are estimated to represent about 8% of the total fluoride ion emissions after completion of the proposed addition and modification.)

The company proposes a 95% collection efficiency in the expanded facilities and 92% in the modernized existing facilities. Without additional information (air and gas collection cfm per pot) the feasibility of increasing collection efficiencies on existing facilities cannot be completed.

SUMMARY

The company proposes to accomplish the expansion and modernization without creating levels of fluoride, forage or ambient air levels, which will cause economic damage to vegetation or animals, discomfort to any person or reduction in visibility. No current emission data have been submitted by the company.

Emission data covering pot line scrubbers, roof monitor scrubbers, including efficiencies for gases and particulates, and the roof monitor on the expanded facility will be required information upon facility completion. The currently proposed forage and ambient air levels should be a condition of approval. (See Appendix B)

B. Emission Monitoring:

1. Ambient air - Ambient air data were not submitted by the company since they have not performed any measurements in recent years. The staff conducted ambient air sampling from April 4, 1968 to October 30, 1968, which included 846 six-hour samples for total fluorides at a point 0.95 miles SE of the plant (Appendix C). The average level was 0.70 ppb as HF.

   The single sampling station and prevailing wind directions do not indicate the station is completely representative of the ambient air. The one sampling station results, however, show that ambient air levels for gaseous emissions would be within the proposed standards at that site. If the gaseous emissions increase 15% (by staff estimations, not the company's), marginal gaseous fluoride levels may exist at reasonable distances from the plant.

2. Forage Sampling - The company has provided the staff with its forage sampling results and weather data for 1968. This information has been compared to the tentative forage fluoride standards in Appendix B. The prevailing wind pattern, which was oriented in the East-West direction, influences the forage levels because this monitoring technique measures the effects of absorbed gaseous HF and deposited particulate fluorides. An annual average of 40 ppm fluoride ion was exceeded at sampling sites 20, 20A, 20B, 20C, 22, 23, 24 and 24A (located on enclosed map) all of which are company owned. These locations are generally oriented in the East-West direction within approximately 0.8 mile or less of the plant. The exception is site 20B, located 1.5 miles due west, which contained 41 ppm F^- during 1968. Inaccuracies in the sampling and analytical procedures make the significance of this value debatable. The shorter term levels in the tentative standards were exceeded a total of 21 times at sites 20, 20C, 22, 23 and 24. Sites 22 and 23 accounted for 15 of the 21. Again, all of these sites are company owned and within approximately 0.5 mile of the plant. Livestock activity in the area, includes the company herd of 800 feeders and a neighbor's herd of about 12 head.

3. Source Sampling - The company claims that no source sampling data is available on any portion of the current operation. In addition, no data was provided to support the claimed collection and treatment efficiencies for the proposed addition and modifications.

C. Cast House:

The tapped metal from the potrooms is processed through the cast house in pigs from 30 pounds to 12 tons in size. The furnaces, 10 ranging in size from 7500 to 90,000 pounds, allow for preparation of specific alloys and fluxing for metallurgical properties. The only recognized significant air pollution problem arises in the fluxing operation.

Fluxing is a term applied to the process of adding materials to a melt, which cause the removal of gases, oxides, or other impurities, but do not remain in the final product. Chlorine and nitrogen are common fluxing agents in the aluminum industry. Reynolds Metals Company uses chlorine. One of the emissions from this non-continuous process is aluminum chloride, $AlCl_3$, and the fume is dense and white upon exposure to the atmosphere. In addition, it is hygroscopic and will absorb moisture resulting in formation of hydrochloric acid. Tests at other operations have indicated that 100% of the particles are less than 2 microns, 90-95% less than one micron, and average 0.7 microns in size.

The company scrubber now being installed is a moving-bed packed-column with water. Overall efficiencies from a scrubber of this type would be expected to be 75 to 85% or more efficient and 95-98% efficient for HCl, and 75-85% efficient on chlorine. The latter efficiencies may be increased by using a caustic scrubbing solution. The primary problem resulting from this treatment is most likely one of visible emissions. The company has advised the staff that the emissions from the fluxing operation have caused no air pollution problem in the past and the treatment facilities were initiated as a result of alleged effects by workers.

SUMMARY

Staff attempts to observe and evaluate the emissions from the cast house have not been successful. No design data or emission data have been submitted and consequently an evaluation cannot be completed at this time. It is concluded that the company should be required to submit emission and efficiency data and be required to demonstrate compliance with visible emission standards.

D. Carbon Anode Plant:

Operations conducted in this area involve the production, assembly, and some recovery of carbonaceous anode and cathode materials. Air contaminants are released from two points, an electrostatic precipitator and a tall (approximately 180 ft.) stack. The material from both processes is essentially carbon particulate. According to the company, the proposed expansion will not cause any increase in the anode plant production since the current practice of producing anodes for other reduction plants will be discontinued.

1. Anode Production - The anode production process involves the preparation and handling of calcined petroleum coke and pitch. Dust generated from these operations is collected by a hood and duct system and treated with an electrostatic precipitator. When the precipitator electrodes are cleaned (rapping), collected material re-entrains in the air stream. This results in a visible emission standard. The company is planning to install a cyclone type collector (multicone) ahead of the precipitator by October 1, 1969. The staff does not have emission data covering particulate concentrations and characteristics and has not evaluated to what extent this will alleviate the problem. No detailed plans and specifications on this project have been submitted.

2. Anode Baking - The other anode plant procedure which results in the emission of air contaminants is the baking process. Material (most of which is very small carbon particulate) becomes entrained in the baking pit flue gases and is emitted out the anode plant stack. The opacity of this emission exceeds Ringelmann #2 essentially at all times. The company proposes to build an additional stack, conduct tests on the existing stack and then install control equipment on both stacks to reduce visible emissions by 1971. Although it is realized that the solution to this problem is difficult and expensive, the staff believes that any necessary testing could be performed on the existing stack (as indicated in W. E. Campbell's letter dated May 12, 1969) prior to the approval of constructing a second stack. The company has not presented any information indicating why the second stack is required before the development of a satisfactory treatment technique. Other aluminum producers in the northwest are known to be studying this same problem on existing stacks. However, the methods being studied have not been made available. Information from the USDHEW has indicated an after-burner control system is feasible but expensive. The company believes an after-burner is not acceptable in all respects.

   The staff concludes that the company should submit more detailed supporting information and that approval should be conditioned upon evidence that dilution is not being used to meet the visible emission standard, which is anticipated to be Ringelmann No. 1 by 1975.

E. Cryolite Recovery:

   This process involves the recovery of fluoride materials in the water discharged from fume treatment scrubbers. The calcining furnace mentioned in the company's presentation uses an alkaline liquor fume control system to remove air contaminants. At this time, the staff does not consider this area to be a significant problem, however, the company should be required to submit emission data for this particular process.

III. STAFF RECOMMENDATIONS

It is recommended that the proposed expansion and modernization program be approved subject to the following limitations, conditions and requirements:

A. Emission data for gaseous fluorides, particulate fluorides, and total particulates be submitted for courtyard scrubbers, roof monitors, and roof scrubber treatment systems, including but not limited to efficiencies of control equipment.

B. Production and control facilities shall be operated and maintained at all times so that the ambient air and forage standards, as stated in Appendix B are not exceeded at representative points along an agreed upon plant site boundary within which the company will always maintain ownership of the land.

C. A roof monitor scrubber system will be immediately installed on the expanded facilities, or additional improved collection and treatment systems will be immediately installed on the existing facilities if the above standards are exceeded.

D. The company shall install and operate monitoring equipment to monitor the air during the growing season, March 1 to October 1, commencing no later than March 1, 1970, and collect forage samples on a monthly basis to determine compliance with the standards in Appendix B. All available sampling or monitoring results shall be submitted to the Sanitary Authority on a monthly basis commencing with the forage data for the month of May 1969.

E. The company submit emission data and collection equipment efficiencies to typify the emissions from the chlorine fluxing operations including pounds of chlorine used per day.

F. Emission test data from the electrostatic precipitator be submitted after installation of the proposed cyclone type collector.

G. The company submit pilot plant study data and proposed treatment plans for the anode baking operations for approval before an additional stack is constructed.

H. Emission data from the current cryolite recovery plant be submitted for evaluation.

APPENDIX

APPENDIX A-1

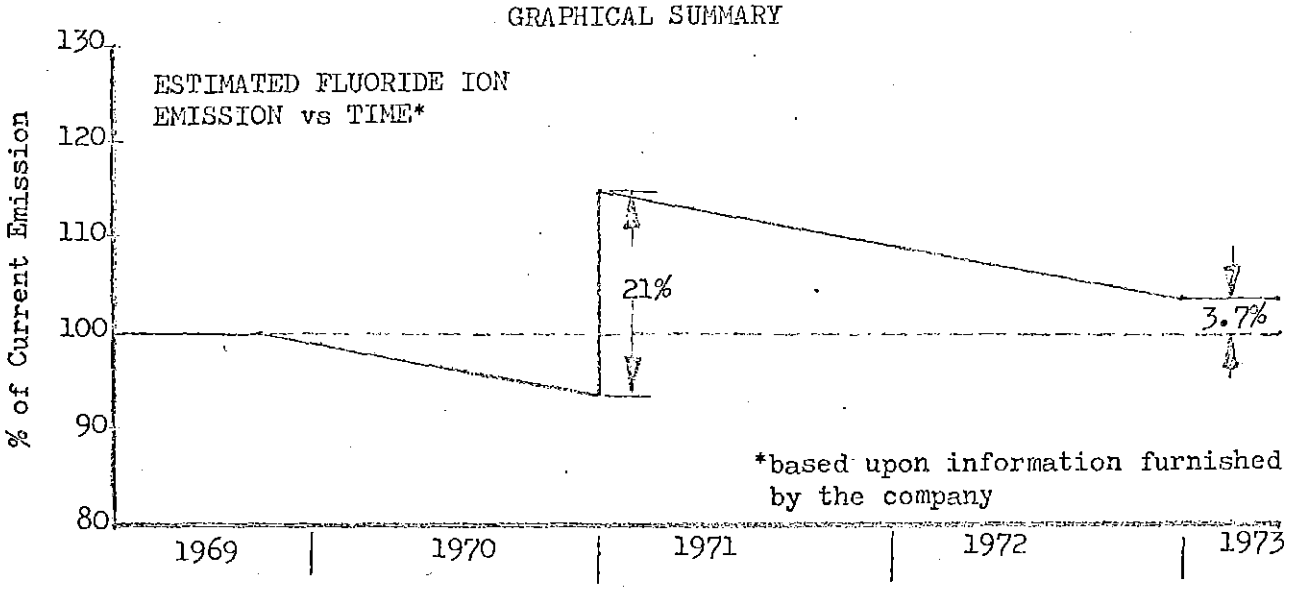
TABULAR SUMMARY

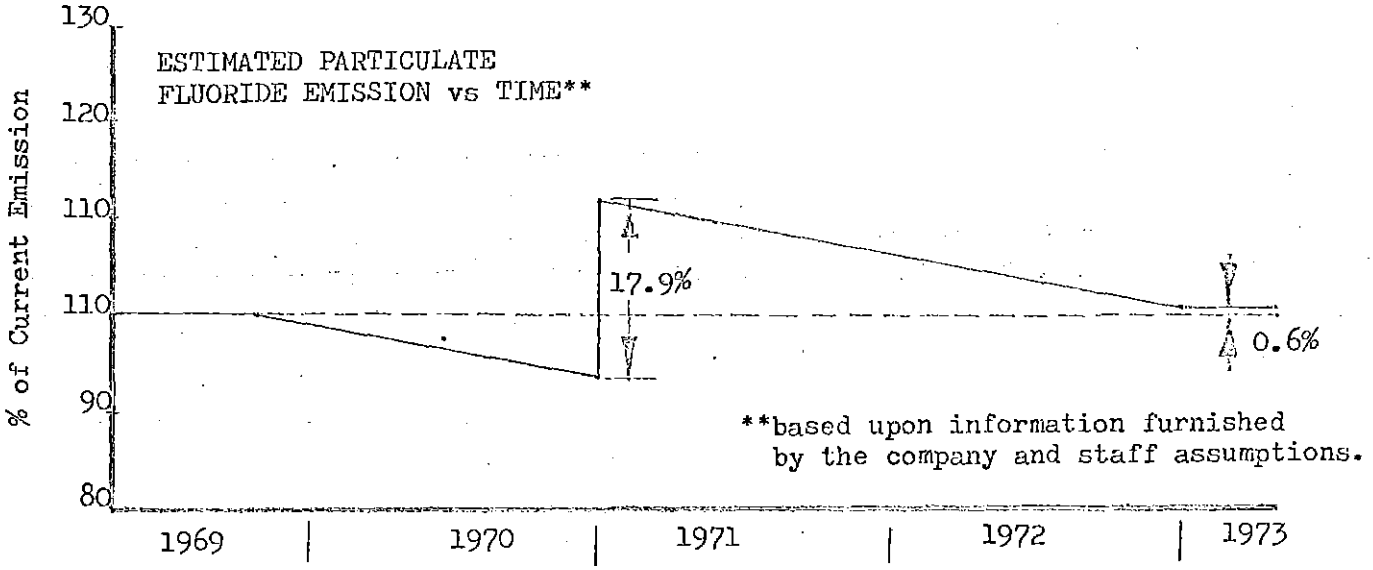
	EMISSIONS IN POUNDS/DAY TOTAL FLUORIDE ION	PARTICULATE FLUORIDE	GASEOUS FLUORIDE
1. Emissions from current process, 560 pots	1812	2900	382
2. Emissions from current process, after modification and improvement	1498	2397	315
3. Emissions from new pot line	381	519	127
4. Total emissions as a result of expansion (Sum of 1 plus 3)	2203	3419	509
% change =	+21%	+17.9%	+33.2%
5. Total emissions as a result of modernization to existing facilities only (Item 2)			
% change	-17.3%	-17.3%	-17.5%
6. Total emissions as result of modernization and expansion (Items 2 and 3)	1879	2916	442
% change =	+ 3.7%	+ 0.6%	+15.7%

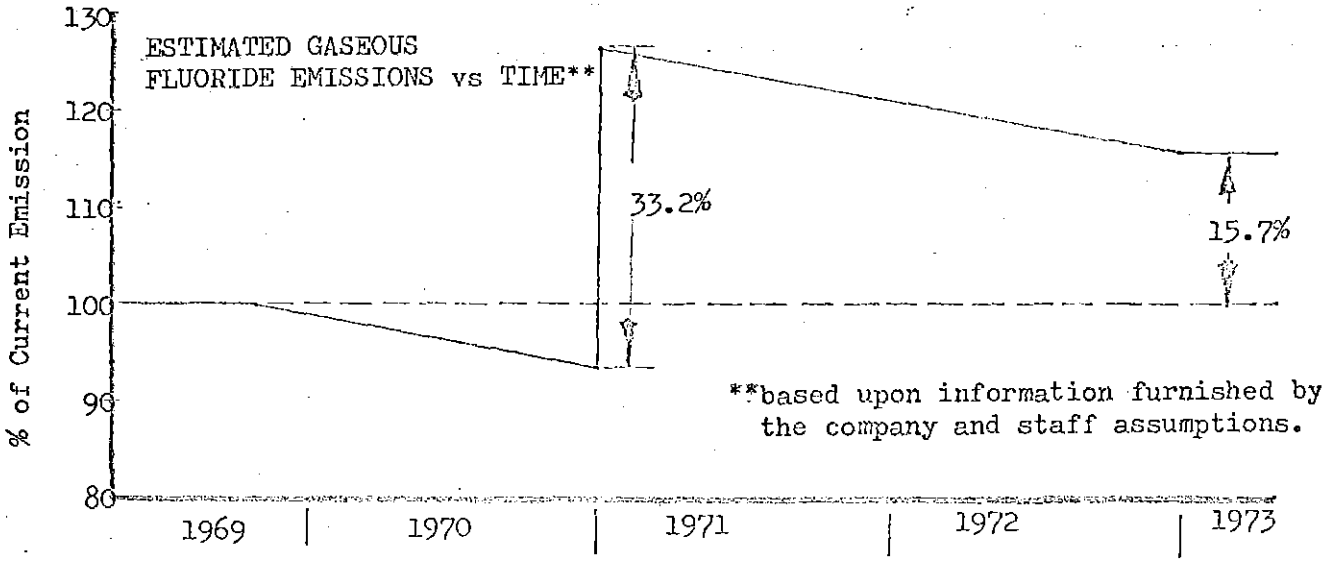
The above tabular values are based upon company submitted information and stated assumptions. The staff also compared these values by calculating emissions based upon other published information. The emissions compare favorably, but in instances similar assumptions were made. The percentage change caused by the expansion and modernization program are most reliable and dependent upon the company being able to attain the collection and treatment efficiencies stated.

APPENDIX A-2

GRAPHICAL SUMMARY







APPENDIX B

TENTATIVE

FLUORIDE STANDARDS FOR AMBIENT AIR AND FORAGE

Note: The information given below represent levels currently being considered by the staff as possible regulations.

I. Ambient Air Standards:

(1) Gaseous fluorides in the ambient air calculated as HF by volume shall not exceed:

a. Four and one-half parts per billion (4.5 ppb) average for any twelve (12) consecutive hours.

b. Three and one-half parts per billion (3.5 ppb) average for any twenty-four (24) consecutive hours.

c. Two parts per billion (2.0 ppb) average for any seven (7) consecutive days.

d. One part per billion (1 ppb) average for any thirty (30) consecutive days.

II. Forage Standards:

(1) The fluoride content of forage calculated by dry weight shall not exceed:

a. Forty parts per million fluoride ion (40 ppm F^-) average for any twelve consecutive months.

b. Sixty parts per million fluoride ion (60 ppm F^-) each month for more than two consecutive months.

c. Eighty parts per million fluoride ion (80 ppm F^-) more than once in any two consecutive months.

Forage samples shall be taken once each calendar month at 25-35 day intervals to determine compliance with Sections II (1) a., b., c.

(2) In areas where cattle are not grazed continually, but are fed cured forage, as hay, during the winter, the fluoride content of the hay shall be used as the forage fluoride content for as many months as it is fed to establish the yearly average.

(3) Cured forage grown in the counties of Clatsop, Multnomah and Wasco for sale as livestock feed shall not exceed 40 ppm F^- by dry weight after curing or preparing for sale.

APPENDIX C

Oregon State Sanitary Authority Ambient Air Fluoride Sampling Data

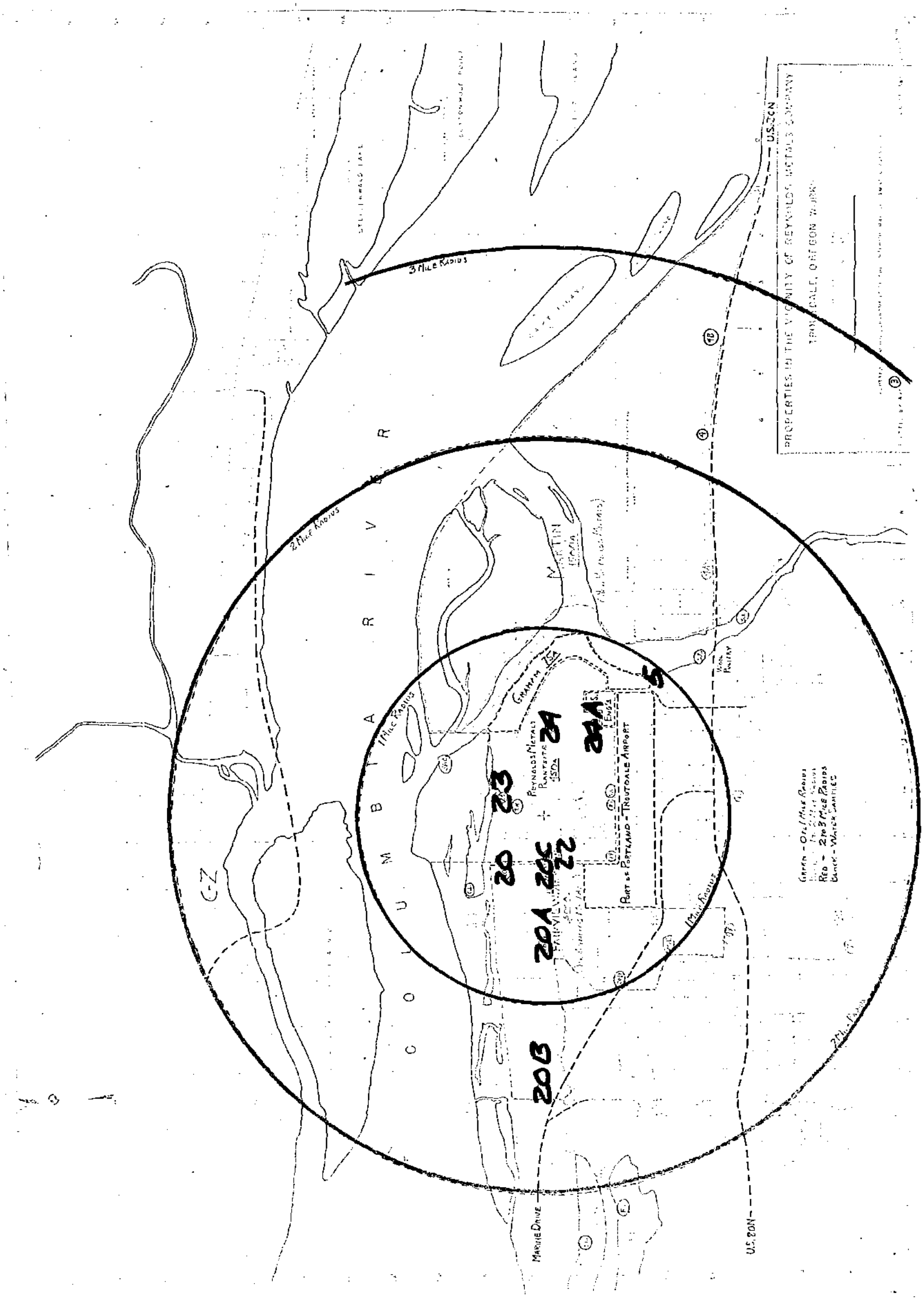
Sample type: Total air-borne fluoride expressed as hydrogen fluoride on a volume basis.

Location : Shutze residence (0.95 miles southeast of Reynolds Metals Co.)

Dates : April 4, 1968 to October 30, 1968.

Date	No. 6-hour Samples	HF Conc. (ppb, v/v) Maximum	Minimum	Median	Average
4/4/ to 4/25	99	3.3	0.0	0.5	0.67
4/26 to 5/28	112	6.5	0.0	0.8	1.08
5/29 to 6/24	111	2.3	0.0	0.5	0.46
6/25 to 7/29	144	4.9	0.0	0.5	0.78
7/30 to 8/27	119	4.2	0.0	1.0	1.06
8/28 to 9/26	123	2.0	0.0	0.9	0.90
9/27 to 10/24	116	1.4	0.0	0.5	0.50
10/25 to 10/30	22	0.8	0.1	0.3	0.31
Summary					
4/4 to 10/30	846	6.5	0.0	0.6	0.70

APPENDIX D



COLUMBIA RIVER
3 Mile Radius
2 Mile Radius
1 Mile Radius
Reynolds Metals Plantsite
Port of Portland - Troutdale Airport
Graham
Marine Drive
U.S. 30N
20
20A
20B
20C
22
23
24
24A
5
C-Z

REYNOLDS METALS COMPANY

TROUTDALE, OREGON 97060 PHONE: MOHAWK 5-9171

April 16, 1969

Oregon State Sanitary Authority
State Office Building
1400 S. W. 5th Avenue
Portland, Oregon 97201

Attn: Mr. Kenneth H. Spies, Secretary

Gentlemen:

As we have previously advised you, we are requesting your approval of the installation of proposed air quality control devices in connection with our plans for constructing a 28,000 ton addition to our present manufacturing facilities at Troutdale.

As a result of a meeting between representatives of the State Sanitary Authority staff and Reynolds Metals Company personnel, certain requests were made of Reynolds Metals Company. We have diligently gathered this information, to the best of our ability and knowledge, and are presenting it as an attachment hereto. It should provide sufficient information to thoroughly evaluate the effects of the plant addition on air and water quality.

We are firmly convinced that this installation will not cause any detrimental effects to the community. On the contrary, it provides substantial benefits such as continued full time employment for approximately 150 additional people and increases our payroll about $1,250,000 per year. In addition there will be a pro rata increase in the purchase of supplies, small parts, services, power, gas, freight etc. to go into the local economy. It will further add to the tax base of the community, which will decrease the local community property taxes.

Since we could not approach you for this requested approval until we had at least our preliminary plans formulated, we now find ourselves in the position of having to request a reply as early as is possible, so that Engineers can proceed with detailed engineering. We obviously do not want to proceed further on this expansion without your approval. We would request that your board rule favorably on this request at the next board meeting, which I understand is scheduled for April 25, 1969.

Very truly yours,

REYNOLDS METALS COMPANY

W. E. Campbell
Plant Manager

WEC:pp
Attach.

REYNOLDS METALS COMPANY

TROUTDALE, OREGON 97060 PHONE: MOHAWK 5-9171

April 16, 1969

Mr. H. M. Patterson, Chief
Air Quality Control
Oregon State Sanitary Authority
State Office Building
1400 S. W. 5th Avenue
Portland, Oregon 97201

Dear Mr. Patterson:

The following is our reply to your request of April 2, 1969:

1. History of the installation of control devices:

Reynolds Metals Company required the government, under the original Troutdale lease agreement, in 1946 to install a roof fume scrubbing system. Reynolds believed that type of system to be adequate to protect agricultural operations from any injury. By 1948 it appeared that such a system might not, however, protect against injury to gladiolus and prunes. Therefore, in 1950 a comprehensive system was installed. This system consisted essentially of pot hoods, courtyard scrubbers and roof scrubbers. During the years 1960 to 1964, all of the roof scrubbers were replaced. In 1968 four of the original sixteen courtyard scrubbers were replaced. The present plan is to replace four more courtyard scrubbers in each of the next three years.

Since 1950 the Troutdale Plant has spent nearly $5,000,000 in capital money for fume collection and related equipment. Our operating expenses have exceeded $10,000,000. Our present plans call for an additional capital expenditure of approximately $3,500,000. Most of this expenditure is non revenue producing.

2. History and current status of litigation proceedings:

In 1948 certain agricultural operators in Oregon and Washington filed actions in which they claimed damage to their operations, seeking damages and also seeking to enjoin further operation of the Troutdale plant. Most of these claims were settled in 1949, and the remainder were tried in the Federal Court in Portland in 1950.

In 1951 Mr. and Mrs. Paul Martin filed an action in the Federal Court in Portland in which they sought to recover damages for injury to their cattle operations and to enjoin the further operation of the Troutdale plant. This case was tried in December, 1952. There were several other cases brought by Mr. and Mrs. Martin. These cases were either tried or settled. The Martin litigation was finally terminated by a settlement entered into in 1968, which included the purchase of the Martin farm.

In 1953 Fairview Farms, Inc., adjoining the Troutdale plant on the west, brought an action in the Federal Court in Portland to recover damages for injuries to its dairy operations and to enjoin further operation of the Troutdale plant. This case was eventually tried, following which the parties settled their differences, which included the acquisition by Reynolds of the Fairview Farms, Inc. property.

There were several additional cases filed in the years which followed by some commercial growers of gladiolus and lily plantings which resulted in various trials and appeals. These cases were ultimately disposed of in January, 1969.

It is the opinion of Reynolds Metals Company, based upon advice from specialists employed by it and consultants which it has retained, that there has been no economic damage to agricultural operations since the installation of the present air quality control system which occurred in 1950.

At the present time there are no claims pending or lawsuits filed with respect to the operations of the Troutdale plant.

3. Maps showing plant, buildings and property owned by Reynolds:

Attached Reynolds drawing E-3257 shows the positions of buildings on the Troutdale Plant site and the old Fairview Farms property. There are no buildings on the old Martin property except an old barn.

Attached drawing F-147 shows the over-all property formerly Martin's, formerly Fairview Farms and the Reynolds Plant site. This drawing also shows the location of our vegetation sample points.

4. Size and operation of the current production facility:

The four existing pot lines at Troutdale have a rated capacity of 25,000 tons each for a total of 100,000 tons for the Plant. There are 140 pots in each line for a total of 560 for the Plant. Each pot produces approximately 1,000 lbs. per

operating pot day. Most of this metal is tapped from the potrooms and is processed through holding furnaces in the Cast House. Here specific alloys can be made and fluxed to provide proper metallurgical properties before being cast to customer specifications. The smallest sized pig cast is 30 lbs. and the largest ingot goes up to 10 - 12 tons.

There are 10 furnaces in the Cast House ranging in capacity from 7,500 lbs. to 90,000 lbs. The Carbon Anode Plant produces the necessary anodes for the Reduction Plant and the formation of anodes is done on either a one or two shift basis. The baking of these anodes in the carbon baking furnaces is processed on a 24-hour day, 7 days a week continuous basis.

Green anodes are composed of calcined petroleum coke and pitch. This material is pressed in the anode form and they are placed in baking furnaces where the temperature is ultimately elevated to 1,200° C. and the volatile material is baked out of the pitch portion forming a hard anode, which is the form used in the Reduction Plant. The volatiles from the pitch are burnt in the flues along with natural gas used as the source of heat and the resulting effluent exhausts out of the Carbon Plant stack.

The Cryolite Recovery process consists of circulating an alkaline liquor through the fume control system so that gaseous fluorides are dissolved in the alkaline liquors. Particulate fluorides are wetted and caught by these alkaline liquors along with particulate alumina. These materials go to the Cryolite Recovery Plant where the sodium, aluminum and fluoride are balanced stoichiometrically and cryolite is precipitated from the liquors, filtered and calcined in a Herschoff Furnace, the resulting low grade cryolite is reused in the electrolytic cells or sent to Longview for further processing.

Enclosed is a Troutdale Aluminum Reduction Plant Welcome booklet that may assist pictorially to understand our facility.

5. Emission control system:

Our present plant is rated at 100,000 tons. We are presently producing at a rate of 101,000 tons with an average of 550 pots operating. These pots have shields on them and an air take off on one end to a central two pass scrubber in the courtyards. Each scrubber services either 32 or 38 pots, depending on location and there are 16 such scrubbers. The pot emissions that are not collected in the main scrubbing system will go to roof scrubbers where the gas is scrubbed with sprays and then discharged into a cyclone type mist eliminator stack for discharge into the atmosphere.

We estimate our present pot collection efficiency to be about 75% into the courtyard scrubbers with about 90% scrubbing efficiency. The remaining 25% goes into the roof scrubbers with about 70% scrubbing efficiency.

Our plans are to concentrate our efforts on improving pot collection efficiencies where we can most easily improve conditions in relation to total emissions from the potline.

It is our plan to continue replacing courtyard scrubbers which greatly improves the visible emissions from the courtyard scrubbing system. We have already replaced four of these scrubbers and will continue with this program. We also plan to improve the pot hooding system by replacing our present pot ore bin with a combined ore bin and fume duct system extending the full length of the pot similar to the design for the new potline. We also plan to install bar breakers and computer controls on the remaining three potlines which will decrease fume emissions and contribute toward keeping the pot closed a greater portion of the time. We expect an overall improvement in the total effluent being emitted from the plant to approach the efficiencies stated in the information on the new proposed potline.

6. Current monitoring program:

Reynolds' current monitoring program consists of periodic sampling of vegetation and water for fluoride content. An attached exhibit gives the 1967 and 1968 results of the vegetation and water testing, showing the yearly average and the monthly minimum and maximum during the year.

7. Discussion of the proposed expansion:

The proposed expansion is detailed in the review entitled "Troutdale Expansion - Atmospheric Emission Control." A copy of this was presented to you at our conference and is attached to this reply. You were also supplied preliminary drawings of the proposed fume system.

When considered with the changes being planned, it is our estimation that visible emissions will be greatly improved primarily from the Carbon Plant. Emissions, ambient air and vegetation levels, will remain in total at about the present level which are within reasonable standards and cause no one any discomfort or damage.

8. Proposed future testing:

We plan to make checks upon completion of new equipment to verify that the equipment's performance is what we had anticipated. However, our primary monitoring system is, and

should be, the effect of the total effluents from the total plant. This will be measured by air and vegetation samples on our existing grid.

We have discontinued open burning.

A cyclone separator is presently on order for installation ahead of the Carbon Plant electrostatic precipitator. This installation is scheduled for completion by October 1, 1969, and will eliminate visible emissions from this source.

The chlorine scrubber in the Cast House is in the process of being installed. Completion date is scheduled for May 1, 1969.

Engineering is underway towards the best solution for reducing the visible emissions from the Carbon Plant stack. At present, to continue operations we are unable to install any cleaning equipment in the system even if we were now certain of the solution. For this reason we know that we will have to build a second Carbon Plant stack and split the effluent. Upon the construction of this second stack we will install what is determined to be the most practical cleaning equipment available to reduce the visible emissions from both stacks. We are presently setting a target date for this installation to be complete in 1971.

I believe the above fully complies with your request.

Very truly yours,

W E Campbell

WEC:pp
Attach.

W. E. Campbell
Plant Manager

TROUTDALE EXPANSION

ATMOSPHERIC EMISSION CONTROL

Plant Expansion:

The expansion of the Troutdale Plant will consist of a fifth pot line constructed parallel to the existing four lines and having a production capacity of 28,000 tons per annum of primary aluminum. The new pot line will consist of 140 reduction cells housed in two pot rooms. These pots will be operated at about 75,000 amperes and less than 5 volts per cell.

Sources of Atmospheric Emissions:

The production of aluminum will be by the electrolytic process which basically consists of the decomposition of alumina (Al_2O_3) which has been dissolved in a electrolytic bath by passing a DC current through the bath. During this operation, gaseous compounds are evolved consisting primarily of carbon monoxide, carbon dioxide, fluoride compounds and particulate matter of carbon, alumina and fluoride which are entrained in the gas stream by the nature of the operation and the thermal head of the gases. The major element of concern is the fluorides because of their detrimental effect and all particulate matter because of its visibility.

Methods of Control:

The method of control of plant emissions are broken down into three categories. First, minimizing the evolution of gases and particulate matter. To reduce the evolution of the objectionable fluorides, the pots of the new line will be computer monitored and operated to maintain the optimum characteristics within the cell to present minimum fluorine consumption. Further, bath constituents will be utilized to even further lessen consumption of fluorides.

The result of these operating methods will decrease the amount of volatilization of fluoride compound.

Second, the improved capture of any evolved fluorides. The pot will be equipped with devices that allow the major operations performed on the pot to be done with the pot fully enclosed and hooded. Further, the hooding of this pot is so designed that even during the short periods when external operations must be performed only a small portion of the pot must be opened and high degree of fume collection will occur during these operations. This insures a high capture efficiency and a minimum of losses to the pot building atmosphere.

Third, an effective treatment of captured gases for removal of objectionable gaseous and particulate matter prior to discharge to atmosphere. The gases so captured in the pot hooding system through a system of ducts and fans will be conveyed to a scrubbing system to accomplish removal of particulate and gases in a scrubbing system followed by moisture elementation and discharge to the atmosphere from an elevated stack.

Computation of Emissions:

Fluoride consumption on an annual basis in cells that have the features that will be utilized on this expansion to reduce fluoride consumption will be at the rate of about .028 pounds of fluoride per pound of aluminum produced.

This would indicate a fluoride consumption of 4300 pounds per day. Our experience is that the amount of electrolyte material that will be absorbed by the new pot linings that must periodically be installed in the pots will have a fluoride constituent accounting for the consumption of about 1120 pounds of fluoride per day. Butt screenings and pot skimmings would account for approximately 160 pounds per day that are removed and processed through a cryolite plant. Subtracting the pot absorption and other losses would leave 3020 pounds per day evolved from the pot.

Pot hooding systems in use in the industry today vary appreciably on capture efficiency. Evaluation of the hooding system to be installed in this expansion indicates that we will achieve an average collection efficiency of 95%. With 3020 pounds per day of fluoride being evolved from the pot, this would be a loss to the pot line room atmosphere of 151 pounds per day. The minimum air flow through the pot room roof monitors is 4,250,000 cfm of air giving a concentration of about 0.32 ppm. The captured fumes would contain 2869 pounds per day of fluoride which would be collected in a duct system of approximately 500,000 cfm (3,500 cfm per pot), and removed in a scrubber which would maintain a scrubbing efficiency of 92 percent resulting in 229 pounds per day being discharged from our stack, which is about 4.1 parts per million. While the discharge from the roof monitor would probably be equally divided between particulate and gaseous matter, the stack discharge would be principally particulate matter.

Evaluation of Other Systems:

Other systems of fume capture and removals were evaluated. The possibility of using the pot room building as a hood was considered, but as this requires the pot operational people to work in the atmosphere and because fume capture is at such a low concentration and, consequently, effective treatment so difficult, it was rejected.

Evaluation was made of other systems of gas and particulate removal from the collection stream. Studies of various practical systems and combinations of such systems, including detailed in-plant test of pre-coated bag filters, resulted in rejection of such systems as none indicated any higher degree of efficiency than that of our well-proven wet scrubber system.

1968 TROUTDALE FLUORIDE DATA

0 to 1 Mile Radius				1968 Average	1968 Max.	1968 Min.
Test Station #19	0.5 Mi.	S.W.	(C)	26	52	11
#20	0.5 Mi.	W.N.W.	(C)	99	355	21
#20A	1.0 Mi.	W.	(C)	63	209	18
#20C	0.5 Mi.	W.	(C)	131	328	21
#20D	1.0 Mi.	W.S.W.	(C)	27	68	9.4
#20E	1.0 Mi.	S.W.	(C)	17	36	7.5
#21	0.5 Mi.	S.	(C)	20	34	9.0
#22	0.3 Mi.	W.S.W.	(C)	198	639	40
#23	0.3 Mi.	N.N.E.	(C)	195	382	83
#24	0.4 Mi.	E.	(C)	86	286	33
#24A	0.4 Mi.	S.E.	(C)	52	99	23
#36C	0.6 Mi.	N.N.E.	(C)	30	45	16

(C) = Company Property

Note: All vegetation results are expressed in parts per million fluoride ion on a dry weight basis.

1968 TROUTDALE FLUORIDE DATA

			1968		
1 to 2 Mile Radius			Average	Max.	Min.
Test Station #4A	1.5 Mi. S.E.	(C)	31	91	9.3
#5	0.8 Mi. S.E.		28	49	11
#6	1.0 Mi. S.		18	27	6.1
#7	1.8 Mi. S.S.W.		18	38	7.8
#16	2.0 Mi. W.		22	45	3.8
#18	1.3 Mi. S.S.W.		20	45	1.3
#20B	1.5 Mi. W.	(C)	41	85	8.9
2 to 3 Mile Radius					
Test Station #3	3.0 Mi. S.E.		25	53	6.0
#4	2.1 Mi. E.S.E.	(C)	29	60	9.8
#4B	2.6 Mi. E.S.E.	(C)	34	137	10

(C) = Company Property

Note: All vegetation results are expressed in parts per million fluoride ion on a dry weight basis.

1968 TROUTDALE FLUORIDE DATA

		1968		
3 to 4 Mile Radius		Average	Max.	Min.
Test Station #3A	3.5 Mi. E.S.E.	21	47	3.6
#3D	3.5 Mi. E.S.E.	19	44	7.3
#3E	3.3 Mi. E.S.E.	21	47	8.5
#17	3.2 Mi. W.	27	47	15
#33	3.1 Mi. N.W.	24	36	7.3
4 to 5 Mile Radius				
Test Station #1B	4.0 Mi. E.S.E.	18	29	7.9
#1F	4.5 Mi. E.S.E.	20	35	9.9
#3B	4.1 Mi. E.S.E.	23	67	7.9
5 to 6 Mile Radius				
Test Station #1A	5.5 Mi. E.S.E.	19	36	11
#12	5.1 Mi. W.	21	45	11
6 to 10 Mile Radius				
Test Station #1G	18.0 Mi. E.	15	21	7.0
#11	6.8 Mi. W.	18	29	8.6

Note: All vegetation results are expressed in parts per million fluoride ion on a dry weight basis.

1968 TROUTDALE FLUORIDE DATA

Water Sampling Stations		1968 Average	1968 Max.	1968 Min.
Blue Lake		0.33	0.53	0.16
Fairview Lake		0.14	0.21	0.02
Company Lake	(C)	24	51	15
Salmon Creek at Graham Road	(C)	0.19	0.35	0.02
Salmon Creek at Sundial Road	(C)	0.41	0.93	0.16
Sandy River Below Wool Pullery		0.12	0.62	0.00
Sandy River Above Wool Pullery		0.07	0.14	0.00
Plant Tap Water	(C)	0.28	0.63	0.00

(C) = Company Property

Note: All water results are expressed in parts per million fluoride ion on an as is basis.

COLUMBIA RIVER QUALITY DATA - 1968
(For Water Discharge Permit)

	Temperature °C. and °F.			Fluoride p.p.m.		
	Average	Max.	Min.	Average	Max.	Min.
Columbia River 5.5 Mi. Upstream from RMC	10.8 7.6°C. 51.4 45.7°F.	21°C. 69.8°F.	3°C. 37.4°F.	0.24	0.80	0.03
Columbia River 3.3 Mi. Downstream from RMC	10.7°C. 51.3°F.	20°C. 68°F.	3°C. 37.4°F.	0.22	0.45	0.04
Company Lake Outfall to Columbia River	14.3°C. 57.7°F.	25°C. 77°F.	3°C. 37.4°F.	25	63	14

pH (Degree of Acidity or Alkalinity)
7.0 = Neutral
Below 7.0 = Acid
Above 7.0 = Alkaline

	pH			Chlorides p.p.m.		
	Average	Max.	Min.	Average	Max.	Min.
Columbia River 5.5 Mi. Upstream from RMC	7.9	8.4	7.1	3.4	6.3	1.0
Columbia River 3.3 Mi. Downstream from RMC	7.9	8.5	7.1	3.3	6.5	0.5
Company Lake Outfall to Columbia River	8.3	9.1	6.8	66.9	157.5	18.6

Note; These are the results of 52 weekly samples during the Year 1968.

CONFIDENTIAL

TOWERS

	MAX	MIN	AV.
IN TO CYCLONES	160 PPM	100 PPM	120 PPM
CYCLONES TAKE 20-25 %			
IN TO TOWERS	120 PPM	75 PPM	90 PPM
OUT OF TOWERS	15 PPM	7 PPM	8-11 PPM

ROOF SCRUBBERS

IN TO R. SCR.	7.0 PPM	1.5 PPM	3-4 PPM
OUT OF R. SCR.	2.5 PPM	0.3 PPM	0.75-1.25 PPM

CONFIDENTIAL

5-16-69
W.E. Caudle II
Trudy

I

ANALYSIS OF FLUORIDE EVOLUTION FROM TROUTDALE POTROOMS

CAPACITY	101,000 Ton Present		101,000 Ton Future		28,000 Ton Future	
CONSUMPTION	@ .030#F/#AL. 16,600		16,600		@ .028#F/#Al. 4,300	
LOSSES:						
Butt Screenings	550				146	
Pot Skimmings	110				14	
Pot Absorption	3,980				1,120	
TOTAL		4,640		4,640		1,280
EVOLVED		11,960		11,960		3,020
Collection Efficiency	@ 75%	.25	@ 92%	.08	@ 95%	.05
To Roofs		2,990		957		151
Roof Scrubbing Efficiency	@ 70%	.30	@ 60%	.40	@ 0%	0
Roof Losses		897		383		151
To Courtyard	(11,960-2,990)	8,970	(11,960-957)	11,003	(3,020-151)	2,869
Courtyard Scrubbing Eff.	@ 90%	.10	@ 90%	.1	@ 92%	.08
Courtyard Losses		897		1,100 ✓		229
TOTAL POTROOM LOSSES		1,794 ✓		1,483		380
				380		
ESTIMATED POTROOM LOSSES AFTER EXPANSION				1,863		

Expansion vs. present 21.2% increase
Mod vs. present 17.3% decrease
Mod + expan. vs. present 3.8% increase

1864 17.4
1794 19.5
69 2.1

KHS

REYNOLDS METALS COMPANY

TROUTDALE, OREGON 97060 PHONE: 503 665-9171

May 12, 1969

Oregon State Sanitary Authority
State Office Building
1400 S. W. 5th Avenue
Portland, Oregon 97201

Attn: Mr. Kenneth H. Spies, Secretary

Gentlemen:

In response to Mr. Spies' letter of May 8, 1969 regarding fume collection equipment changes in the existing plant and an additional potline, this is to advise that our present financial and power contract commitments are such that the additional potline is scheduled to be operative by January 1, 1971.

The additional effluents that might be emitted from our plant as a result of the expansion would not create forage or ambient air levels of fluoride which could cause any economic damage to vegetation or animals, discomfort to any person, or reduction in visibility. The equipment to be installed in the additional potline is to serve as a guide to what changes we would make to improve the existing facilities.

We are willing to proceed, prior to final completion of the expansion, with a schedule of improvement of the existing plant. This improvement program is to be conducted in an orderly fashion in progressive stages with only reasonable disruptions to operations. We propose to convert existing potlines at a rate of one potline per year commencing this year. Also we will begin this year experimental work to determine the most practical means of cleaning the carbon plant stack gases with the goal of having a completed installation in 1971. The carbon plant stack has some unique problems which are not easily solvable and will require a period of testing a pilot installation.

We cannot reasonably complete these changes to the existing plant by January 1, 1971, the planned completion date of the expanded facilities, without causing severe upsets to our operations which would be damaging to the company, employees and community.

In addition, such a crash program would not permit us to make at least minor improvements that became apparent during the progress of any such installation. The changes that we have planned are not fully proven installations in total at any location. They are a composite of the best engineering knowledge now available. Our statements of efficiency are based on estimates on what we expect to achieve and are as good as any that we know presently exist.

For example, during the summer of 1967 we operated one wet fume scrubber with an experimental set of sprays so as to be able to change spray nozzle sizes and arrangements to determine the best arrangement for best efficiency. We obtained scrubbing efficiencies from 81% to 93.3%. Therefore we advised you that we would design to obtain a 92% efficiency in the scrubbers in the new plant where space was not a problem and 90% where existing structures create limitations. With the knowledge of what can be achieved with increased volume of air off of the pots and the engineering knowledge that we have for the design of pot hoods, it is believed that we can achieve a collecting efficiency of 95% in the new facility and a 92% efficiency from a conversion of equipment in the existing plant.

The schedule for changing out courtyard scrubbers is a rate of four scrubbers per year. We are just commencing the installation of various spray arrangements to attain the 90% scrubbing efficiency to be expected from this installation. The testing and analysis is planned for this with the goal of letting the contract for four more scrubbers by October 1, 1969. Four additional scrubbers are planned to be installed each succeeding fall. The benefit we obtain from these new courtyard scrubbers is primarily a reduction of visible emissions which consists mostly of water vapor.

You have asked for a quantitative presentation of the resulting effect of the proposed changes. This is impossible to predict because of the vast number of variables. It is our objective to limit our visible emissions to at least a Ringleman 2 by the end of 1971. It is our intent to monitor forage and ambient air at the periphery of our property for the purpose of complying with standards that we know will not cause any economic damage to others and are suggested as reasonable standards by the Boyce Thompson Institute, University of Wisconsin, and the Aluminum Association. In the event that our monitoring indicates otherwise we will make any available changes that will accomplish that objective.

In considering approval of the proposed air quality control devices relating to the existing plant and the addition, we believe that there are several matters that you should take into consideration:

1. The bulk of the claims and litigation involving this plant since Reynolds Metals Company commenced operating it in 1946 has

1. (Continued)

   related to cattle and commercial gladiolus and lily plantings;

2. The last two cases involving claims of damage to gladiolus and lily plantings were filed approximately ten years ago;

3. The last claim of damage to cattle was asserted in a lawsuit filed almost eight years ago; and

4. There are no persons claiming injury by reason of the operations of the plant at the present time.

Very truly yours,

W. E. Campbell

:ab

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 16, 1969 for June 27, 1969 meeting

SUBJECT: COOS HEAD TIMBER COMPANY, McKENNA PLANT WIGWAM WASTE BURNER

The Oregon State Sanitary Authority, at its meeting in Coos Bay on May 23, 1969, directed that Coos Head Timber Company submit a time schedule to eliminate operation of the McKenna plant wigwam waste burner. It was directed that this schedule be presented to the Authority at its meeting in Portland on June 27, 1969.

Attached is a copy of the letter sent to Coos Head Timber Company confirming this action.

As of the date of this report, no response has been received from Coos Head Timber Company.

ADDENDUM

DATE : June 25, 1969 for the June 27, 1969 meeting

The letters of May 23 and June 17, 1969 received by the staff are attached.

In summary, Coos Head Timber Company requests until June 30, 1971 to complete their program which will phase out the use of the waste burner.

It is recommended that the company be directed to comply with current regulations and standards pertaining to this source by September 1, 1969.

May 28, 1969

Coos Head Timber Company
P. O. Box 750
Coos Bay, Oregon 97420

Attn: F. Willis Smith, President

Gentlemen:

This letter is to confirm the action of the Oregon State Sanitary Authority at its meeting in Coos Bay on May 23, 1969.

Your company was directed by the Authority at that meeting to submit a time schedule to eliminate the operation of your McKenna plant wigwam waste burner. This time schedule is to be presented to the Authority at its meeting in Portland on June 27, 1969.

The staff will advise you of the specific time and place for this meeting.

Very truly yours,

Kenneth H. Spies,
Secretary and Chief Engineer

KHS:h

COOS HEAD TIMBER COMPANY lumber | plywood | pulp
P. O. BOX 750 • COOS BAY, OREGON 97420 • PHONE 267-2193

June 17, 1969

Oregon State Sanitary Authority
1400 S. W. 5th Avenue
Portland, Oregon 97201

Attention: Mr. Kenneth H. Spies,
Sec. & Chief Engineer

Gentlemen:

We wish to acknowledge and reply to your letter of May 28, 1969 relative to the Sanitary Authority Meeting in Coos Bay on May 23, 1969.

At the time of the Coos Bay meeting, I had prepared a letter regarding this subject and I would like to have this letter, which we are enclosing herewith, included in our file.

We have not, at this time, completed our plan for the disposal of all wastewood developed at our McKenna operation. This operation contains a sawmill, scragg mill and plywood operation. We are working toward this solution and will most certainly work this out at our McKenna Mill as we did at the Bunker Hill operation and at the earliest possible time. We do, however, need some time to accomplish the disposal of all wastewood materials. We are currently negotiating sales of planer shavings and other usable fiber which we produce in excess of our steam requirements. Upon completion of sales contracts, we will then install the necessary equipment to replace the burner.

We wish to request two years to complete our program, or June 30, 1971.

We are enclosing for your information a recent aerial photo of the McKenna operation and the Bunker Hill operation. This photo shows prevailing summer winds, as well as the low density of population in the vicinity of our McKenna operation. The prevailing winter winds are from the opposite direction and prevail over our Bunker Hill plant.

Please advise if further information is required.

Yours very truly,

FWS/ej
Encls.

F. Willis Smith, President

COOS HEAD TIMBER COMPANY lumber | plywood | pulp
P. O. BOX 750 • COOS BAY, OREGON 97420 • PHONE 267-2193

May 23, 1969

Oregon State Sanitary Authority
P.O. Box 231
Portland, Oregon 97207

Gentlemen:

Our Company in July of last year advised the Oregon State Sanitary Authority of our plans to discontinue the use of the large refuse burner at our Bunker Hill Sawmill -- the former Coos Bay Lumber Company operation. This large burner has been in continuous operation since 1906 at this location and handled refuse from both the Georgia-Pacific and Coos Head operations.

Approximately two years of planning and installation of equipment was required to make it possible to remove the wigwam burner. This was accomplished in October 1968. We believe this to be the first burner in our country to be removed from an operating sawmill, plywood, hardboard complex.

We are, of course, proud of this accomplishment and agree with Mr. Spies' comments "We are sure that the citizens of Eastside will be most pleased to see this symbol of much of their environmental pollution dismantled and wish you early success in accomplishing a similar fate for the burner at Coos Head's McKenna Mill."

This then brings us to the subject of our McKenna wigwam burner. Our interest in phasing out this burner is similar to the Bunker Hill burner even though we do not feel that an environmental problem is created by this burner. We have in the past few years, reduced the amount of use of this burner by about 75%. We still have 25% to go. This 25% consists primarily of planer shavings and sander dust. We also burn the old plank and timbers from our dock and yard repair at the two mills in this burner. We do not today have solutions for phasing out of this burner in the near future. We will, however, continue our efforts toward a complete utilization of all the sawmill and plywood wastes at this operation. We feel this goal can and will be achieved.

Yours very truly,

F. Willis Smith, President

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 16 for June 27 Meeting

SUBJECT: WEYERHAEUSER TIMBER COMPANY, NORTH BEND

The staff met with Weyerhaeuser Timber Company representatives on June 13, 1969, to discuss the type of program required for reducing emissions from the plywood plant as directed by the Oregon State Sanitary Authority at its meeting in Coos Bay on May 23, 1969.

The Company proposed that by September 15, 1969 Weyerhaeuser Company submit their findings pertaining to the initial evaluation of the problem and specifically whether Weyerhaeuser Co. will research and resolve the problem or if an outside consultant would be employed. Information pertaining to sampling, analyses, and schedule will be submitted if available.

Note: Weyerhaeuser Timber Company will submit a letter to the Sanitary Authority outlining this proposal before June 27, 1969.

Weyerhaeuser Company

Coos Bay Area
North Bend, Oregon 97459
A/C 503 • 756-5121

June 24, 1969

Mr. Ron Householder, Associate Engineer
Air Quality Control
Oregon State Sanitary Authority
1400 S. W. 5th Avenue
Portland, Oregon 97201

Mr. Householder:

This letter will confirm our conversation in Portland and also answer the letter from Mr. Spies dated May 28, 1969. In his letter, Mr. Spies asked for a schedule on reducing the smoke emission at our plywood plant.

These emissions originate in our plywood dryer system. At the present time there is very little tested information available on eliminating this smoke. However, by September 15, 1969, we plan to retain an experienced air quality consultant to do a sampling study of our plywood emission. We will ask them to test the volume of gas, the moisture content, the total hydro-carbon content, and the amount of particulate. This is the minimum information we wish to obtain. Anything else he can tell us that will assist us in reducing the problem will, of course, be helpful. We will notify the authority by September 15 who will conduct the tests, and the date they plan to complete the sampling.

It is hoped that this information will be sufficient to add to your report at the Sanitary Authority Meeting in Portland June 27, 1969.

Sincerely,

WEYERHAEUSER COMPANY
Coos Bay Area

Don H. Dils

Don H. Dils
Community Relations Manager

DHDils:mfc

CC: Mr. H. M. Patterson
Mr. Kenneth H. Spies

M E M O R A N D U M

To: Members of the Sanitary Authority

From: Water Pollution Control Staff

Date: 6-27-69

Subject: Application for Certification of Pollution Control Facility for Tax Relief Purposes - No. T-78.

This application was received on March 26, 1969. A summary of the contents and results of the staff review are given below:

1. Applicant: Boise Bascade Corp.
   Fine Paper Division
   P.O. Box 2089
   Salem, Oregon 97308

   The applicant owns and operates a pulp and paper mill located at

   315 Commercial Street So.
   Salem, Oregon
   Marian County

2. Facility claimed in the application consists of:

   Pumping station
   150 foot diameter clarifier tank
   Sludge pumps
   Sludge de-watering belt filter and all associated equipment such as piping, pumps, electrical instrumentation, sampling devices and land.

   This facility was completed January 15, 1968, and placed in operation on January 24, 1968.

3. The cost of the facility as claimed in the application is $572,062. An accountant's certification cost is attached.

4. Staff Review:

   This facility operates to remove approximately 18,000 pounds per day of suspended solids consisting mainly of wood fibers and clay which were discharged into the river prior to installation. The solids removed are disposed of in a land fill on Minto Island.

5. Recommendation:

   It is recommended that a Pollution Control Facility Certificate bearing the actual cost figure of $572,062 be issued to Boise Cascade Corporation for the facility claimed in Application No. T-78.

BOISE CASCADE CORPORATION

STATEMENT OF ACTUAL COST

OF PRIMARY CLARIFIER SYSTEM PROJECT--1968

SALEM, OREGON

PURCHASED MATERIALS AND SERVICES, at cost:	
Preparatory sewer work	$ 51,184
Pumping station and related equipment	102,260
Clarifier tank and rake	155,034
Flume house, flume and outfall piping	28,066
Sludge and tunnel pumps and related equipment	9,293
Filter house, filter and related equipment	112,759
Bridge engineering and piping	4,087
Sludge handling	54,633
	$517,316
COMPANY LABOR, at cost	54,746
	$572,062

ARTHUR ANDERSEN & CO.

501 NORTON BUILDING
SEATTLE, WASHINGTON 98104

March 12, 1969

Boise Cascade Corporation
P. O. Box 200
Boise, Idaho 83701

Gentlemen:

We, as independent public accountants, have examined the attached Statement of Actual Cost of Primary Clarifier System Project--1968, Salem, Oregon. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the statement referred to above presents fairly the cost of $572,062 incurred by Boise Cascade Corporation in the construction of the Primary Clarifier System--1968.

Very truly yours,

Arthur Andersen & Co.

M E M O R A N D U M

To: Members of the Sanitary Authority

From: Water Pollution Control Staff

Date: 6-27-69

Subject: Application for Certification of Pollution Control Facility for Tax Relief Purposes No. T-80.

This application was received on April 1, 1969. A summary of the contents and results of the staff review are given below:

1. Applicant:

   Boise Cascade Corp.
   Paper Division
   St. Helens, Oregon 97051

   The applicant owns and operates a kraft process pulp and paper mill on Kaster Road in St. Helens, Oregon, Columbia County.

2. The facility claimed in the application consists of:

   Interceptor sewer
   Pump pit and pumping station
   Primary clarifier and centrifuge

   The facility was completed in August, 1967, and placed in operation in September, 1967.

3. The cost of the facility as claimed in the application is $966,535. An accountant's certification of the cost is attached.

4. Staff Review:

   The purpose of this facility is to remove settleable solids and wood fiber from the liquid waste streams prior to discharge to Multnomah Channel. The solids removed are de-watered for disposal either in the Hog Fuel System or in a land fill area adjacent to the plant. Data indicates that the facility, removes about 35,000 pounds of solids per day. The company has experienced settlement of the clarifier and operational outages of the centrifuge due to foundation problems. Corrective efforts have been made but it is not known at this time whether problems have been permanently resolved.

5. Recommendation:

   It is recommended that a Pollution Control Facility Certificate bearing the actual cost figure of $966,535 be issued to Boise Cascade Corporation for the facility claimed in Application No. T-80.

Boise Cascade Corporation
St. Helens Division
Primary Clarifier

Exhibit 2-B

Primary Clarifier & Centrifuge		Cost
1. Equipment		
Elmco (clarifier) PO 1313	$55,015	
Bird (centrifuge) PO 1262	48,580	$103,595
2. Equipment Installation		13,000
3. Instruments Controls		12,000
4. Structures		356,706
5. Electrical - Labor & Materials	23,457	
Motors	8,000	31,457
6. Piping - included Item 4		
7. Related sewer system	137,251	
Tile Work Distribution	3,800	141,051
Hoffmans Fee		
506.957 x 37.6%		190,616
Grasles Fee		
31457 x 10%		3,146
Central Engineering		
856,914 x 8%		68,126
Miscellaneous Mill Jobs		46,838
Total Cost		$966,535

ARTHUR ANDERSEN & CO.

501 NORTON BUILDING
SEATTLE, WASHINGTON 98104

March 12, 1969

Boise Cascade Corporation
P. O. Box 200
Boise, Idaho 83701

Gentlemen:

We, as independent public accountants, have examined the attached Statement of Actual Cost of Pollution Control Facility Project (Primary Clarifier and Centrifuge)--1967, St. Helens, Oregon. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the statement referred to above presents fairly the cost of $966,535 incurred by Boise Cascade Corporation in the construction of the Pollution Control Facility Project (Primary Clarifier and Centrifuge)--1967 at St. Helens, Oregon.

Very truly yours,

Arthur Andersen & Co.

BOISE CASCADE CORPORATION

STATEMENT OF ACTUAL COST

OF POLLUTION CONTROL FACILITY PROJECT

(PRIMARY CLARIFIER AND CENTRIFUGE)--1967

ST. HELENS, OREGON

Purchased materials and services, at cost	$898,409
Company labor, at cost (engineering)	68,126
	$966,535

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 27, 1969

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY, NO. T-81

1. Applicant - Boise Cascade Corporation
Paper Division
St. Helens, Oregon 97051

The applicant owns and operates a kraft pulp and paper mill on Kaster Road northeast of St. Helens.

2. The facility in this application is a black liquor oxidation system, consisting of two concentric tanks with an agitator, foam breakers, blowers, and pumps. Its purpose is to oxidize Na_2S to $Na_2S_2O_3$ in order to prevent evolution of H_2S, an odorous gas, at the direct contact evaporator.

3. The total certified cost is $230,021. An accountant's certification and the company's calculation of return on investment are attached.

4. Staff Review:

The function of this facility is to prevent the release of an odorous gas by preventing its formation. The recovery cycle's efficiency, in terms of retention of sulfur, is thereby increased. The economic return would then be the value of the sulfur (normally a make-up chemical) retained. The company's economic analyses (attached) shows that the annual cost of retaining the sulfur exceeds the annual value retained. Therefore, the staff concludes that the purpose of this facility is clearly for pollution control.

It should be noted that the analyses is based on design data, which indicate that the initial purpose at least was pollution control. This facility is a part of an expansion program which was completed early this year, so that operating data under the new conditions are not available. This type of oxidation system has been very successful at other mills.

5. Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the cost figure of $230,012 be issued for the facility claimed in tax application T-81.

BOISE CASCADE PAPERS
St. Helens, Oregon 97051
Telephone (503) 397-2900

May 1, 1969

ROUTING
To

File No.

OREGON STATE SANITARY AUTHORITY
Waste Discharge Permit Program
Received: MAY 5 1969
Appl. No: T-81

Oregon State Sanitary Authority
1400 S. W. 5th Avenue
Portland, Oregon 97201

Attention: Mr. C. A. Ayer
Public Health Engineer

Subject: Tax Relief Application T-81
(Black Liquor Oxidation System)

Gentlemen:

Thank you for your letter of April 22, 1969. We submit herewith our revised Exhibit 3-C which has taken into consideration depreciation, maintenance costs, and power costs.

When these annual operating costs are considered, their total exceeds the annual value of recovered product.

If additional data are required, please let us know.

Very truly yours,

BOISE CASCADE Papers

H. D. Jurgensen

Harlan D. Jurgensen
Resident Manager

HDJ/bb
Encl.

EXHIBIT 3-C

BLACK LIQUOR OXIDATION SYSTEM

Value of Material Recovered:

Average Design Throughput = 1300 Gallons per minute

Average Design oxidation rate = 0.175 g/l/minute as Na_2S

Total Na_2S recovered = $1300 \frac{gal}{Min} \times 0.175 \frac{g\text{-}Min}{liter} \times \frac{3.785\ liters}{gal.}$

= .860 grams/minute

= $\frac{860g}{min} \times \frac{16}{454g} \times \frac{1440\ min}{day} \times \frac{355\ days}{year}$

= $970{,}000 \times 1.82 \frac{\#Na_2SO_4}{\#Na_2S}$

= 1,765,000 lb. Na_2SO_4

Value of Product = 1,765,000 lb x \$.01545/lb

= \$27,300/year gross

14,380
1800
9140
\$ 1,020

Economic Life = 16 years

Depreciation = $\frac{230{,}012}{16}$ = \$14,380/year

Maintenance Costs = \$150/mo. x 12 mo. = \$1,800/year

Power Costs = 330 KW x \$.0032/KWH x 24 x 360 = \$9,140/year

Net Value of Product = 27,300 - (14,380 + 1800 + 9140) = \$-1,020/year

ARTHUR ANDERSEN & CO.

501 NORTON BUILDING
SEATTLE, WASHINGTON 98104

March 12, 1969

Boise Cascade Corporation
P. O. Box 200
Boise, Idaho 83701

Gentlemen:

We, as independent public accountants, have examined the attached Statement of Actual Cost of Pollution Control Facility Project (Black Liquor Oxidation System)--1968, St. Helens, Oregon. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the statement referred to above presents fairly the cost of $230,012 incurred by Boise Cascade Corporation in the construction of the Pollution Control Facility Project (Black Liquor Oxidation System)--1968 at St. Helens, Oregon.

Very truly yours,

Arthur Andersen & Co.

BOISE CASCADE CORPORATION

STATEMENT OF ACTUAL COST

OF POLLUTION CONTROL FACILITY PROJECT

(BLACK LIQUOR OXIDATION SYSTEM)--1968

ST. HELENS, OREGON

Purchased materials and services, at cost	$212,974
Company labor, at cost (engineering)	17,038
	$230,012

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : May 16, 1969 (For Sanitary Authority meeting June 27, 1969)

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY FOR TAX RELIEF PURPOSES, NO. T-77.

This application was received on March 20, 1969. A summary of the contents and results of the staff review are given below.

1. Applicant: Western Steel Casting Co. of Oregon
Foot of S. W. Woods Street (P.O.Box 688)
Portland, Oregon 97207
Phone: 228-2141
Mr. Robert M. Alexander, Vice-President

The applicant produces low carbon steel castings of various shapes and sizes. The process involves arc melting metal scrap, making necessary allow additions and pouring into sand molds.

2. The facility claimed in this application consists of a hood, ductwork, fan and baghouse for treating the arc furnace fume at the S. W. Woods Street plant. Installation was completed on August 2, 1968 and operation commenced on August 5, 1968.

3. The total installed cost of the facility is $38,631.11. An accountant's certification of this figure is attached.

4. Staff review:

Approximately 200 lbs. of fumes (primarily iron oxide) are collected daily. The resulting emission is estimated at 0.2 lbs. per day. The collected material is placed in plastic bags and hauled away by a local sanitary service.

A letter from the Columbia-Willamette Air Pollution Authority, dated April 10, 1969, indicating the subject facility is installed and operating properly, is attached.

This installation is considered to be in the medium size range. The staff feels it is possibly the best controlled tip-type arc-furnace in the state.

The principal purpose for installing this facility was to reduce atmospheric emissions.

5. Staff Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the actual cost figure of $38,631.11 be issued for the facility claimed in Application No. T-77.

Appl. No. T-77
ACS

COLUMBIA-WILLAMETTE AIR POLLUTION AUTHORITY

1010 N. E. COUCH STREET PORTLAND, OREGON 97232 PHONE (503) 233-7176

10 April 1969

Air Quality Control
Oregon State Sanitary Authority
1400 SW 5th Avenue
Portland, Oregon 97201

Attn: Mr. Fredric A. Skirvin
Associate Engineer

Gentlemen:

This is in response to your letter of 7 April 1969 requesting information concerning certification of a pollution control facility for tax purposes located at Western Steel Casting Company, Ft. of S.W. Woods Street, Portland, Oregon.

On 7 August 1968, we inspected the Wheelabrator baghouse and associated hoods, ducts, and controls for controlling fumes from the tip-type electric arc furnace. The baghouse appeared to be properly installed and was operating in compliance of the Columbia-Willamette Air Pollution Authority Rules. According to our records there is no information indicating that certification should be denied for reasons outlined in ORS 449.635, item (3) for this particular price of control equipment.

If we can be of any further assistance, please contact this office.

Very truly yours,

R.E. Hatchard
Program Director

Wayne Hanson

Wayne Hanson
Control Director

WH:sm

Arne S. Hansen & Company
CERTIFIED PUBLIC ACCOUNTANTS
1321 NORTHERN LIFE TOWER
SEATTLE

March 7, 1969

Western Steel Casting Company of Oregon
145 South Horton Street
Seattle, Washington 98134

Gentlemen:

We have examined the records of Western Steel Casting Company of Oregon and the purchase invoices relating to the installation of pollution control facilities at the company's plant located at the foot of S. W. Wood Street in Portland, Oregon, and certify that such records show the cost of the facility to be as follows:

Supplier	Item	Cost
Wheelabrator Corporation	Wheelabrator Dust Collector	$12,564.00
Wheelabrator Corporation	Wheelabrator Side Draft Hoof	7,574.00
Wheelabrator Corporation	Clarage Exhauster	2,449.00
Graham Electric Co.	Wiring for Dust Collector	1,912.36
American Sheet Metal, Inc.	Low Pressure System	13,186.00
American Sheet Metal, Inc.	Electrical Panel Box	484.75
John W. Burns & Son	Painting	461.00
Total,.....		$38,631.11

Yours respectfully,

Arne S. Hansen & Company

Arne S. Hansen & Company

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. C. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 16, 1969 for meeting of June 27, 1969

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY FOR TAX RELIEF PURPOSES, NO. T-41.

Final information from the applicant was received on April 25, 1969. A summary of the contents and results of the staff review are given below.

1. General Foods Corporation
Birds Eye Division
239 West Baseline Street
Hillsboro, Oregon 97123
Mr. Robert J. Dunn, Plant Manager

The applicant processes and freezes fresh fruits and vegetables from June until December at the Hillsboro plant.

2. The facility claimed in this application consists of two steam boiler conversion units. These units converted the boilers from being fired with Bunker C oil to being fired by natural gas, with oil on standby in the event of interrupted gas service. Operation of the facility began on June 10, 1968, with final installation completed on June 19, 1968.

3. The total installed cost of the facility is $21,400.23. An accountant's certification of this figure is attached.

4. Staff Review:

Information supplied by the applicant shows that there has been a small increase in operating cost of the boilers since the conversion to natural gas from Bunker C fuel oil. A staff review indicates that the installation has been properly designed and should perform satisfactorily.

Attached is a letter from the Washington County Department of Public Health stating that the conversion has been accomplished and that the boilers have operated satisfactorily.

The staff findings indicate that the principal purpose for installing this facility was to reduce atmospheric emissions.

5. Staff Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the actual cost of $21,400.23 be issued for the facility claimed in Application No. T-41.

WASHINGTON COUNTY

COURTHOUSE—SECOND & MAIN STREETS
HILLSBORO, OREGON 97123

BOARD OF COMMISSIONERS
ELDON HOUT, Chairman
JOHN C. ANICKER
LYELL GARDNER
WILLIAM MASTERS
BURTON C. WILSON JR.

DEPT. OF PUBLIC HEALTH
JAMES H. STEWART, M.D., Director
150 N. E. THIRD
(503) 648-8881

May 23, 1969

Mr. Ron Householder
Associate Engineer
State Sanitary Authority
1400 S.W. Fifth Avenue
Portland, Oregon

RE: 10-Air Quality Control
General Foods - Hillsboro

Dear Mr. Householder:

The Washington County Department of Public Health has had correspondence with General Foods concerning air quality violations. They have been concerned about the Washington County Air Quality Control Ordinance and meeting all of its requirements.

In March of 1968 work began on converting the existing boilers to natural gas. This was accomplished because of the dust and black smoke that was being emitted by the use of Bunker C oil.

The conversion to natural gas has corrected the violations that previously existed, therefore, we concur with the request for tax relief as requested by General Foods Corporation, Birds Eye Division.

If you desire further information, please do not hesitate to contact us.

Very truly yours,

WASHINGTON COUNTY DEPARTMENT OF PUBLIC HEALTH
James H. Stewart, M.D., Director

H. A. Kemp, R.S. Supervisor
Environmental Health & Sanitation

HAK:ms:ak

cc: J.M. Christensen - Birds Eye Division

PRICE WATERHOUSE & CO.

AMERICAN BANK BUILDING

PORTLAND 97205

February 7, 1969

General Foods Corporation
Birds Eye Division
Woodburn, Oregon

Dear Sirs:

We have examined the accompanying statement prepared by General Foods Corporation - Birds Eye Division and summarizing its cost of the burner conversion facility (Exhibit C) - $21,400.23 at June 19, 1968.

Our examination consisted of tests of the cost records, inquiries of officials and accounting personnel of the Division and such other auditing procedures as we considered necessary in the circumstances. The principal tests included in our examination were directed to vendors invoices and related documents.

In our opinion, the accompanying statement of burner conversion facility costs (Exhibit C) presents fairly costs which were incurred by General Foods Corporation - Birds Eye Division and are properly chargeable to this burner conversion facility project.

Yours very truly,

Price Waterhouse & Co.

EXHIBIT E

TO : MEMBERS OF THE STATE SANITARY AUTHORITY

John D. Mosser, Chairman
B. A. McPhillips, Member
Storrs Waterman, Member
E. G. Harms, Jr., Member
Herman Meierjurgen, Member

FROM : AIR QUALITY CONTROL STAFF

DATE : June 5, 1969 for June 27, 1969 Meeting

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY FOR TAX RELIEF PURPOSES, NO. T-83.

This application was received on April 3, 1969. A summary of the contents and results of the staff review are given below.

1. Applicant: Leonetti Furniture Co. Manufacturing Division
550 Western Avenue
Beaverton, Oregon

This applicant manufactures furniture.

2. The facility claimed in this application consists of a multiple-chambered incinerator complete with stainless steel gas scrubber, induced draft fan, and conveyors to move refuse from the manufacturing area to the incinerator site. Installation was completed and operation began on August 6, 1968.

3. The total installed cost of the facility is $18,187.31. An accountant's certification of this figure is attached.

4. Staff Review:

The manufacture of furniture results in wood and fabric wastes, as well as general refuse. These waste products at this operation are continuously conveyed, with some limited batch loading, into an automatically controlled multiple chambered incinerator for disposal.

Attached is a letter from the Washington County Department of Public Health indicating that the facility is installed and operating properly. The limited staff observations have indicated that the incinerator can operate with visible emissions under a Ringelmann #1 reading.

The staff findings are that the principal purpose for installing this facility was to reduce atmospheric emissions.

5. Staff Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the actual cost of $18,187.31 be issued for the facility claimed in application No. T-83.

WASHINGTON COUNTY

COURTHOUSE—SECOND & MAIN STREETS
HILLSBORO, OREGON 97123

BOARD OF COMMISSIONERS
ELDON HOUT, Chairman
JOHN C. ANICKER
LYELL GARDNER
WILLIAM MASTERS
BURTON C. WILSON JR.

DEPT. OF PUBLIC HEALTH
JAMES H. STEWART, M.D., Director
150 N. E. THIRD
(503) 648-8881

May 23, 1969

Mr. Ron Householder
Associate Engineer
State Sanitary Authority
1400 S.W. Fifth Avenue
Portland, Oregon

RE: 10-Air Quality Control
Leonetti Furniture Company

Dear Mr. Householder:

The Washington County Department of Public Health is currently working with Leonetti Furniture Company and Wasco Incinerators on a better method of feeding their newly installed incinerator. This change in operating procedure has reduced the number of complaints being received by our Department.

The installation of this incinerator has made a noticeable improvement in Air Quality, therefore, this Department concurs with the request for tax relief.

If you desire further information, please do not hesitate to contact us.

Very truly yours,

WASHINGTON COUNTY DEPARTMENT OF PUBLIC HEALTH
James H. Stewart, M.D., Director

H. A. Kemp, R.S. Supervisor
Environmental Health & Sanitation

HAK:ms:ak

cc: County Counsel
Leonetti Furniture Company

BLAUER, GEFFEN & MESHER
CERTIFIED PUBLIC ACCOUNTANTS
CORBETT BUILDING
PORTLAND, OREGON 97204

HENRY S. BLAUER, C. P. A.
STANLEY D. GEFFEN, C. P. A.
ROBERT I. MESHER, C. P. A.

COPY

April 16, 1969

Oregon State Sanitary Authority
State Office Building
1400 S. W. Fifth Avenue
Portland, Oregon 97201

Attn: Harold L. Sawyer, Supervisor
Waste Discharge Permit Program

Re: Tax Relief Application No. T-83

Gentlemen:

Your letter of April 8, 1969 to Leonetti Furniture Mfg. Co. has been referred to our office for reply.

The information you requested is as follows:

Incinerator	$10,925.00
Incinerator conveyor	5,717.19
Conveyor belts	1,545.12
	$18,187.31

The above costs represent the true and correct cost of the Waste Incinerator described in Application for Certification of Pollution Control Facility for Tax Relief Purposes Number T-83.

Very truly yours,

BLAUER, GEFFEN & MESHER

Jerome K. Caplan

Jerome K. Caplan

JKC:ds

FIELD BURNING SCHEDULE

This schedule has been developed pursuant to 1969 Legislation for application in the Willamette Valley counties of Multnomah, Clackamas, Washington, Linn, Yamhill, Marion, Polk, Benton and Lane during the summer agricultural burning season, July through October. Other schedules will be developed for this and other areas as necessary.

As the statute directs, certain types of atmospheric conditions have been classified "marginal" conditions and the specified type and extent of burning allowed on each type of "marginal" day has been established.

SCHEDULE OF MARGINAL DAYS AND CORRESPONDING BURNING RESTRICTIONS

	CLASS	METEOROLOGICAL CONDITIONS	ALLOWED** BURNING	BURNING HOURS* Begin	End
Unrestricted	1	Forecast Maximum Mixing Depth 5500 feet or greater	No restrictions on type of burning	Time Mixing depth is forecast to reach 3500'	Sunset
Marginal	2	Forecast Maximum Mixing Depth 5000-5400 feet	Annual and perennial grass seed fields used for grass seed production; cereal grain fields	Time Mixing depth is forecast to reach 3000'	Sunset
	3	Forecast Maximum Mixing Depth 4500-4900 feet	Annual and perennial grass seed fields used for grass seed production	"	"
	4	Forecast Maximum Mixing Depth 4000-4400 feet	Perennial grass seed fields used for grass seed production	"	"
	5	Forecast Maximum Mixing Depth 3500-3900	Perennial grass seed fields used for grass seed production	1 P.M.	6 P.M.
Prohibition	6	Forecast Maximum Mixing Depth less than 3500 feet OR When visibility at Salem or Eugene is reduced to 6 miles or less by smoke or haze for two consecutive hours, or to 3 miles or less at any time under prevailing relative humidities of less than 70%	Burning prohibited, except propane flaming, where combustion is nearly complete Burning prohibited, except propane flaming where combustion is nearly complete, from time of occurrence through the next day		

* Burning is to be initiated and completed between these hours.

** Allowed Burning - Note that "other burning", which includes pastures, fencerows and ditch banks (including those around grass and grain fields), agricultural land clearing debris, brush, etc. is not allowed under marginal conditions.

ADDITIONAL GUIDELINES FOR FIELD BURNING PERMIT AGENTS

The implication of the recent legislation on field burning, in which priorities for various kinds of burning were established, is that during the field and slash burning season, the atmosphere should be reserved to the maximum possible extent for reception of the pollutants generated by these activities. This means that other open burning must be minimized during the time of year that field and slash burning take place, which is essentially the period August through November. It is therefore requested that you minimize to the full extent legally possible open burning sources in your district other than agricultural field burning and propane flaming, and logging slash disposal in those areas where you may be providing protection to lands classified as forest lands.

For those fire districts which have adopted local fire codes which allow control of open burning by permit (i.e. backyard burning or small quantities of debris) and have been cooperating with the regions in control of open burning the following information is supplied:

During the field burning season all regional advisories will, if issued at all, be consistent with the Sanitary Authority schedule in that burning under regional jurisdiction will be permitted only on the "unrestricted" days.

Data on acreages of various grass and grain crop types and the amount of debris left for burning by each of the agricultural types show that the most concentrated "source area" encompasses Linn County and Southern Benton County, in which over 50% of the field burning emissions are generated in approximately 5% of the area of the valley. Since source strength is an integral and important part of the source-meteorology-effect relationship, it is concluded that for certain areas in Linn and Benton Counties, there must be an upper limit on the acreage burned on any day.

The following is a list of those areas and the maximum recommended acreage to be allowed to be burned on any one marginal day. These figures represent 5% of the total grass and grain acreage in each of the districts.

Albany RFPD	920A
Tangent RFPD	805A
Halsey-Shedd RFPD	1590A
Harrisburg RFPD	1602A
Brownsville RFPD	882A
Lebanon RFPD	1227A
Benton County Court Jurisdictions	750A
Total of the districts	7776A

A COMPARISON OF MARGINAL DAYS UNDER THE 1969 SCHEDULE WITH THE YEARS 1967 AND 1968

The listings below show how the burning days would have been apportioned in 1967 and 1968, if the presently proposed schedule had been applied during those seasons. Interestingly, although the two seasons were widely different in general weather types, 1967 was a dry year and 1968 was a wet year, the types and numbers of restrictions were quite similar. The seasons were both about 60 days in length, and on that basis, perennial grasses would have been allowed to burn on about 85% of the days, annual grasses on about 75% of the days, grain on 35%, and other burning would have been allowed on about 20% of the days during both seasons.

TABLE I

1967 SEASON - RECORD HEAT, DROUGHT

Field Type	Unrestricted Days	Marginal	Days	Prohibition Days	Total Allowed Days
Perennial Grass	12	41		8	53
			8 class 2		
			13 class 3		
			15 class 4		
			5 class 5		
Annual Rye	12	21		28	33
			8 class 2		
			13 class 3		
Grain	12	8	class 2	41	20
Other Burning	12			49	12

TABLE II

1968 SEASON - RECORD RAINFALL

Perennial Grass	10	41		10	51
			11 class 2		
			15 class 3		
			5 class 4		
			10 class 5		
Annual Rye	10	26		25	36
			11 class 2		
			15 class 3		
Grain	10	11	class 2	40	21
Other Burning	10			51	10

For comparison with the above tables, the following listing shows the breakdown of day types resulting from the air quality criteria actually applied during the 1967 and 1968 seasons:

	Unrestricted	Marginal	Prohibition
1967	43	13	5
1968	43	13	4

To : State Sanitary Authority Members
through Kenneth H. Spies, Secretary & Chief Engineer

From : H.E. Milliken, Assistant Chief Engineer

Date : June 27, 1969

Subject: Construction Grants

We have received 61 applications for construction grants for sewage treatment, interceptor, and pumping projects for fiscal year 1970.

Total construction cost for these projects is estimated to be $50,171,748, the total eligible cost is estimated to be $44,425,171 and the total grants requested is $14,323,570.

The amount of the grant is estimated at 30% of the eligible cost but those projects which will probably meet the federal requirements for area-wide planning and thus receive an extra 10% federal grant are calculated at 33%. These amounts will have to be adjusted when making grant offers in individual cases.

It is expected that Oregon will receive at least $2,400,000 from FWPCA for federal grants. In addition, $1,500,000 has been appropriated by the state legislature for state grants making a total of at least $3,900,000 available.

It will be necessary to develop new forms for making agreements for state grants and to work out details of procedures before proceeding with grant offers for state grants.

The applicants' names, project numbers and amounts have been arranged in order of priority in the attached table.

Recommendations:

1. That the list of priorities be approved.
2. That a policy be adopted to guide the staff in designating which projects should receive federal grants and which should receive state grants.
3. That the staff be authorized to proceed with processing federal grants as soon as authorized by the FWPCA.
4. That the staff be authorized to proceed with processing state grants as soon as legal procedures and necessary forms can be developed.

PROJECTS ARRANGED BY PRIORITY POINTS

WPC-Ore No. and Name		Points	Grant	Cumulative Total	Remarks
256	Halsey	70	36,760	36,760	Under Construction
216	Oakland	67	56,900	93,660	*
219	Odell	67	37,920	131,580	Project Completed
258	Ontario	67	130,300	261,880	Under Construction
241	Warrenton	67	75,440	337,320	Under Construction
263	Moro	64	20,100	357,420	
221	Nehalem	64	82,050	439,470	*
282	Troutdale	64	36,430	475,900	
271	Oak Lodge	62	10,820	486,720	Project Completed
259	Wallowa	62	36,000	522,720	
283	N. Roseburg	61	24,420	547,140	
287	Paisley	61	12,230	559,370	
288	Parkdale	61	39,000	598,370	Scheduled May 1970
246	Bay City	60	78,600	676,970	
214	Brookings	60	9,180	686,150	Project Completed
262	Merrill	60	32,400	718,550	Bond Bids Open 6/24/69
252	White City	60	5,580	724,130	Project Completed
250	Tillamook	60	30,450	754,580	Under Construction
220	Lebanon	59	62,440	817,020	Project Completed
265	N. Powder	59	25,500	842,520	*
273	Rockaway	59	32,100	874,620	*
243	Wheeler	59	50,730	925,350	
202	Dundee	58	69,870	995,220	*
221	Lake Oswego	58	22,440	1,017,660	Project Completed
233	Reedsport	58	176,100	1,193,760	
276	Veneta	58	24,200	1,217,960	*

* Local financing based on 75% grant

6/27/69

PROJECTS ARRANGED BY PRIORITY POINTS

WPC-Ore No. and Name		Points	Grant	Cumulative Total	Remarks
268	Gresham	57	222,750	1,440,710	
275	Medford	57	1,551,000	2,991,710	
232	(West) Salem	56	230,340	3,222,050	Under Construction
280	Cannon Beach	53	100,920	3,322,970	Bond Election 7/1/69
286	McMinnville	53	388,410	3,711,380	
223	Bandon	52	134,250	3,845,630	Bond Election 7/8/69
261	Bend	52	141,300	3,986,930	
234	Clack. Co. S.D. 6	52	2,206,000	6,192,930	*
254	Eugene	52	422,730	6,615,660	
281	Troutdale (B. Cr.)	52	31,010	6,646,670	
249	Portland R.G.	51	85,160	6,731,830	Under Construction
267	Klamath Falls	50	337,860	7,069,690	
257	Creswell	49	5,580	7,075,270	
278	Aumsville	48	23,580	7,098,850	
251	Newberg	48	232,920	7,331,770	*
255	W. Linn	48	102,560	7,434,330	
279	Bear Crk. V.S.A.	46	2,557,830	9,992,160	
253	Cloverdale	46	38,010	10,030,170	Bond Election 7/18/69
269	Hines	46	5,910	10,036,080	*
244	Portland Front	46	92,800	10,128,880	
285	Clack. Co. Comm. Col.	44	18,480	10,147,360	
238	Pendleton	43	288,000	10,435,360	
224	Philomath	43	151,980	10,587,340	
284	Uplands	43	80,850	10,668,190	

PROJECTS ARRANGED BY PRIORITY POINTS

WPC-Ore No. and Name	Points	Grant	Cumulative Total	Remarks
264 Toledo	42	66,430	10,734,620	
274 Lexington	41	28,080	10,762,700	
245 Portland J. Cr.	41	337,140	11,099,840	
228 Sublimity	41	39,020	11,138,860	
242 Hammond	40	67,370	11,206,230	
260 Madras	40	57,000	11,263,230	
277 La Grande	38	13,380	11,276,610	
222 Prineville	38	24,210	11,300,820	
272 Portland STP	36	2,733,550	14,034,370	
218 Sheridan	35	16,200	14,050,570	
270 The Dalles	35	273,000	14,323,570	

STATE OF OREGON

CRITERIA FOR DETERMINING PRIORITY OF ELIGIBLE PROJECTS

FOR FEDERAL CONSTRUCTION GRANTS UNDER PL 84-660

Adopted May 23, 1969

In determining priority of eligible projects, the Oregon State Sanitary Authority will use the point system described below. No project will be considered eligible unless (a) it conforms with the state plan for control of water pollution, (b) it is in accordance with a coordinated, officially adopted area wide plan if there is one, (c) its design conforms fully with the minimum requirements of the Authority, (d) the applicant gives adequate assurance that following the construction the sewage treatment works will be properly operated and maintained, and (e) the applicant is ready to start construction within the time required for encumbering the federal funds.

I. Points based on financial needs (35 points maximum)

A. Per capita assessed value (100% basis)

$	1000-1799	10	5000-5799	5
	1800-2599	9	5800-6599	4
	2600-3399	8	6600-7399	3
	3400-4199	7	7400-8199	2
	4200-4999	6	8200 and above	1

B. Total project costs per capita

$	0 - 24	1	$125 - 174	6
	25 - 49	2	174 - 224	7
	50 - 74	3	225 - 274	8
	75 - 99	4	275 - 324	9
	100 - 124	5	325 - and above	10

C. Outstanding Sewer Bonds per capita

$	0 - 24	1	$125 - 174	6
	25 - 49	2	174 - 224	7
	50 - 74	3	225 - 274	8
	75 - 99	4	275 - 324	9
	100 - 124	5	325 - and above	10

D. If applicant did not receive grant of $100,000 or more within the last five (5) years - five (5) points.

II. Points based on water pollution control needs (20 points maximum)

A. Degree of treatment required

(1)	Secondary treatment (85% of BOD removal)	5
(2)	Secondary treatment plus polishing or summer holding	8
(3)	Tertiary treatment including nutrient reduction	10

B. Pollution abatement needs

(1) Abatement of existing water pollution which constitutes a hazard to the safety of a public water supply, shellfish growing area or waters used for irrigation garden crops 10

(2) Abatement of existing health hazard on land due to inadequate sewage collection or disposal 9

(3) Protection of recreation (swimming, boating) 8

(4) Protection of animal, plant, fish and other aquatic life 7

(5) Sewage treatment needed for serving future or proposed residential and other developments 6

(6) Protection of agricultural and industrial waters 5

(7) Abatement of local nuisance conditions 4

III. Points based on readiness to construct (30 points maximum)

A. Fiscal program

(1) Bonds voted and sold or cash on hand 13

(2) Bonds voted but not sold 10

B. Engineering plans

(1) Final engineering plans and specifications completed 12

(2) Final engineering plans being prepared and scheduled to be completed within 30 days of receiving grant offer. 8

(3) Final engineering plans being prepared and scheduled to be completed within 90 days of receiving grant offer. 6

(4) Preliminary engineering (only) completed 2

C. Project under construction or completed 5

IV. Points based on efficient use of grant funds

A. In accordance with a comprehensive or coordinated area-wide plan 5

B. Permanent facility where no area-wide plan is feasible 5

C. Interim or temporary facility 1

TABLE
A-1

CONSTRUCTION GRANTS APPLICATIONS

WPC Ore. No.	Name of Applicant	Date Received	Proposed Project	Total Proj. Cost	Eligible Cost	Grant	Percent of Eligible Cost
278	Aumsville	6-13-69	STP, Pump Stn.	293,100	78,620	23,580	30
223	Bandon	6-13-69	STP, Int., Pump Stn.	451,800	447,500	134,250	30
246	Bay City	6-15-67	STP & Int.	601,000	262,000	78,600	30
279	Bear Crk. Valley S.A.	6-12-69	Int.	8,000,000	7,751,000	2,557,830	33
261	Bend	6-24-68	STP	510,500	471,000	141,300	30
214	Brookings	3-24-67	Int. & Pump Stn.	30,620	30,620	9,180	30
280	Cannon Beach	6-13-69	STP Exp., Int., Pump Stns.	674,800	336,400	100,920	30
234	Clackamas Co. S.D. #1	6-13-68	STP, Int. & Pump Stn.	7,497,500	6,685,000	2,206,000	33
285	Clack. Co. Comm. College	6-16-69	Pump Stn. & Force Main	80,000	56,000	18,480	33
253	Cloverdale S.D.	6-10-68	STP, Int.	167,700	126,700	38,010	30
257	Creswell	6-13-68	Chlorination Facilities	18,600	18,600	5,580	30
202	Dundee	6-13-68	STP, Int., Outfall	467,400	232,900	69,870	30
254	Eugene	6-11-68	P.S. Renovation STP Add'ns	1,281,000	1,281,000	422,730	33
268	Gresham	11-19-68	Int. & Pump Stn.	800,000	675,000	222,750	33
256	Halsey	3-18-69	STP, Int., Pump Stn.	397,700	111,400	36,760	33
242	Hammond	6-15-67	STP, Int., Pump Stn.	409,960	224,570	67,370	30
269	Hines	1-21-69	Chlorination Facilities	19,700	19,700	5,910	30

TABLE
A-2

CONSTRUCTION GRANTS APPLICATIONS

WPC Ore. No.	Name of Applicant	Date Received	Proposed Project	Total Proj. Cost	Eligible Cost	Grant	Percent of Eligible Cost
267	Klamath Falls	10-15-68	STP & Int.	1,182,500	1,126,200	337,860	30
277	La Grande	5-28-69	Stab. Ponds	44,625	44,625	13,380	30
221	Lake Oswego	4-27-68	Springbrook Interceptor	88,400	68,000	22,440	33
220	Lebanon	5-29-67	Westside Interceptor Ph.II	208,141	208,141	62,440	30
274	Lexington	4-25-69	Interceptor & STP	181,225	93,600	28,080	30
260	Madras	6-20-68	Sewer System & STP	925,000	190,000	57,000	30
275	Medford	5-7-69	STP	4,700,000	4,700,000	1,551,000	33
262	Merrill	2-14-69	STP	108,000	108,000	32,400	30
263	Moro	8-18-68	STP & Interceptor	70,006	67,006	20,100	30
286	McMinnville	6-16-69	STP Exp., Int., P.S.	1,181,000	1,177,000	388,410	33
226	Nehalem	6-11-69	Int. & STP	335,225	273,500	82,050	30
251	Newberg	5-16-68	Int., P.S., STP Mod.	781,400	776,400	232,920	30
265	North Powder	6-10-69	Int. & STP	384,000	85,000	25,500	30
283	North Roseburg S.D.	6-13-69	Int.	75,000	74,000	24,420	33
271	Oak Lodge S.D.	3-6-69	Cl_2 Contact Chamber	32,800	32,800	10,820	33
216	Oakland	11-10-67	Sewerage System	445,900	172,450	56,900	33

TABLE
A-3

CONSTRUCTION GRANTS APPLICATIONS

WPC Ore. No.	Name of Applicant	Date Received	Proposed Project	Total Proj. Cost	Eligible Cost	Grant	Percent of Eligible Cost
219	Odell S.D.	5-26-67	Sewerage System	375,004	126,404	37,920	30
258	Ontario	6-14-68	Int., Outfall, Pol. Ponds & Cl_2	681,599	394,862	130,300	33
287	Paisley	6-16-69	STP & Sewers	177,600	40,760	12,230	30
288	Parkdale	5-20-69	STP & Sewers	273,600	130,000	39,000	30
238	Pendleton	6-15-67	STP Expansion	962,800	960,000	288,000	30
224	Philomath	6-8-67	STP Add. & Int.	531,600	506,600	151,980	30
244	Portland (Front)	6-15-67	Front St. Int.	281,210	281,210	92,800	33
245	Portland (Johnson Crk.)	6-15-67	Johnson Crk. Int.	1,038,960	1,021,640	337,140	33
249	Portland (Rivergate)	4-29-68	Phase I Int.	258,060	258,060	85,160	33
272	Portland (Treatment)	3-10-69	Add. of Secondary Fac.	8,435,000	8,435,000	2,733,550	33
222	Prineville	4-25-67	Int. & P.S. Mod.	80,720	80,720	24,210	30
273	Rockaway	3-19-69	Secondary plus hold. pond	107,000	107,000	32,100	30
233	Reedsport	6-11-69	Sewer System & STP	593,000	587,000	176,100	30
232	Salem (West)	6-13-67	Int., P.S. & STP	734,000	698,000	230,340	33
218	Sheridan	5-17-67	Secondary Clarifier	54,000	54,000	16,200	30

TABLE
A-4

CONSTRUCTION GRANTS APPLICATIONS

WPC Ore. No.	Name of Applicant	Date Received	Proposed Project	Total Proj. Cost	Eligible Cost	Grant	Percent of Eligible Cost
228	Sublimity	6-12-67	Int., P.S. & Ponds	$ 145,070	$ 130,070	$ 39,020	30
250	Tillamook	5-6-68	STP Improvements	101,500	101,500	30,450	30
270	The Dalles	8-16-68	Sec. Treat. & Int.	910,000	910,000	273,000	30
264	Toledo	10-24-68	Secondary Facilities	205,000	201,300	66,430	33
282	Troutdale (Edgefield)	6-13-69	Int., P.S. & F.M.	111,400	110,400	36,430	33
281	Troutdale (B.Cr. Int.)	6-13-69	Int., P.S. & F.M.	97,000	97,000	31,010	33
284	Uplands S.D.	6-16-69	Int. & P.S.	250,000	245,000	80,850	33
276	Veneta	5-9-69	Int., P.S. & Lagoon	177,670	96,800	24,200	33
259	Wallowa	6-14-68	Int., P.S. & Lagoon	120,000	120,000	36,000	30
241	Warrenton	6-15-67	P.S., Press. Sewers & Lagoon	519,040	228,600	75,440	33
243	Wheeler	6-15-67	Int., P.S. & Lagoon	172,700	169,100	50,730	30
255	West Linn	6-11-68	Robinwood Int.	315,000	310,800	102,560	33
252	White City	5-27-68	Chlorination Facilities	18,613	18,613	5,580	30
				$50,171,748	$44,425,171	$14,323,570	

Table B-1

WPC Ore No.	Name of Applicant	Popu-lation	I A Per Cap T.C.V.	I B Proj. Cost Per Cap	Outstanding Sewer Bonds	I C OSB Per Cap	I D Grants in 5 years	II A (1)(2)(3) Treatment Required	II B Pollution Abatement
278	Aumsville	495	3,234	$592	None	- -	None	(1)x	(2)x
223	Bandon	1,650	5,025	274	78,000	47	None	(1)	(1)
246	Bay City	950	2,516	632	None	- -	None	(1)	(1)
279	Bear Creek Valley SA	78,000	5,900	102	None	- -	None	(1)	(1)
261	Bend	13,200	6,077	39	None	- -	None	(1)	(1)
214	Brookings	2,800	7,359	11	112,147	40	None	(1)	(2)
280	Cannon Beach	680	14,248	995	307,698	453	None	(1)	(2)
234	Clack. Co. San.Dist.#1	18,500	4,630	405	None	- -	None	(1)	(2)
285	Clack. Co. Comm. Coll.	158,990	6,200	84	None	- -	None	(1)	(5)
253	Cloverdale	158	4,330	1,060	None	- -	None	(1)	(2)
257	Creswell	950	3,676	20	113,000	119	None	(1)	(2)
202	Dundee	510	7,483	915	None	- -	None	(1)	(2)
254	Eugene	76,200	7,284	17	14,903,000	195	Yes	(1)	(1)
268	Gresham	5,940	6,816	135	313,000	53	None	(1)	(2)
256	Halsey	450	4,782	883	None	- -	None	(1)	(2)
242	Hammond	530	6,352	775	None	- -	None	(1)	(2)
269	Hines	1,440	3,833	14	60,000	42	None	(1)	(2)

Heading numbers refer to Priority Criteria adopted May 23, 1969

xNumber in () refers to item in Priority Criteria

Table B-2

WPC Ore No.	Name of Applicant	Popu-lation	I A Per Cap T.C.V.	I B Proj. Cost Per Cap	Outstanding Sewer Bonds	I C OSB Per Cap	I D Grants in 5 years	II A (1)(2)(3) Treatment Required	II B Pollution Abatement
267	Klamath Falls	18,200	5,871	65	518,770	29	None	(1)	(1)
277	LaGrande	10,100	4,380	4.40	350,000	35	None	(1)	(3)
221	Lake Oswego	13,500	10,461	.77	812,000	60	None	(1)	(3)
220	Lebanon	6,500	5,911	9.60	147,000	22	None	(1)	(3)
274	Lexington	200	5,759	907	None	- -	None	(1)	(2)
260	Madras	1,800	6,989	515	None	- -	None	(1)	(2)
275	Medford	30,600	7,040	153	25,000	0.82	None	(1)	(1)
262	Merrill	850	3,756	127	None	None	None	(1)	(1)
263	Moro	330	5,501	212	None	None	None	(2)	(1)
286	McMinnville	9,350	5,496	126	60,000	6.40	None	(1)	(3)
226	Nehalem	228	3,525	1,470	None	None	None	(1)	(1)
251	Newberg	4,790	5,435	163	196,000	40.9	None	(1)	(3)
265	North Powder	400	2,525	960	None	None	None	(1)	(2)
283	North Roseburg San.D.	25,000	1,180	3	273,000	10.9	None	(1)	(2)
271	Oak Lodge San.Dist.	14,000	6,170	2.34	1,117,000	80	None	(1)	(3)
216	Oakland	850	2,693	525	None	None	None	(1)	(2)

Table B-3

WPC Ore No.	Name of Applicant	Popu-lation	I A Per Cap T.C.V.	I B Proj. Cost Per Cap	Outstanding Sewer Bonds	I C OSB Per Cap	I D Grants in 5 years	II A (1)(2)(3) Treatment Required	II B Pollution Abatement
219	Odell San. Dist.	875	6,640	428	None	None	None	(1)	(2)
258	Ontario	6,090	7,024	112	165,000	27	None	(2)	(2)
287	Paisley	315	2,492	564	None	- -	None	(1)	(2)
288	Parkdale	520	5,400	526	None	- -	None	(1)	(2)
238	Pendleton	14,600	5,531	65.90	None	- -	None	(1)	(3)
224	Philomath	1,600	4,443	333	65,612	41	None	(1)	(3)
244	Portland (Front)	377,800	8,027	.75	None	- -	Yes	(1)	(3)
245	Portland (Johnson)	377,800	8,027	2.75	None	- -	Yes	(1)	(2)
249	Portland (Rivergate)	377,800	8,027	0.68	None	- -	Yes	(1)	(3)
272	Portland (Treatment)	377,800	8,027	22.33	None	- -	Yes	(1)	(3)
222	Prineville	4,200	5,379	19.20	116,000	27.60	None	(1)	(2)
273	Rockaway	670	5,803	160	158,130	236	None	(2)	(3)
233	Reedsport	4,300	5,657	138	None	- -	None	(1)	(1)
232	Salem (West)	68,300	6,949	10.70	5,256,000	77	Yes	(1)	(3)
218	Sheridan	1,850	3,372	29.20	None	- -	None	(1)	(3)

Table B-4

WPC Ore No.	Name of Applicant	Popu-lation	I A Per Cap T.C.V.	I B Proj. Cost Per Cap	Outstanding Sewer Bonds	I C OSB Per Cap	I D Grants in 5 years	II A (1)(2)(3) Treatment Required	II B Pollution Abatement
228	Sublimity	565	3,455	257	None	- -	None	(1)	(2)
270	The Dalles	11,780	5,754	77	None	- -	None	(1)	(2)
250	Tillamook	4,300	5,831	23.60	None	- -	None	(1)	(1)
264	Toledo	2,950	19,573	69.50	69,065	23.40	None	(1)	(1)
282	Troutdale (Edgefield)	643	5,194	173	325,000	505	Yes	(1)	(2)
281	Troutdale (B.Cr. Intr.)	643	5,194	151	325,000	505	Yes	(1)	(3)
284	Uplands S.D.	900	5,824	278	None	- -	None	(1)	(2)
276	Veneta	1,240	3,518	143	None	- -	None	(1)	(2)
259	Wallowa	840	3,194	143	None	- -	None	(1)	(3)
241	Warrenton	2,000	5,563	260	None	- -	None	(1)	(2)
243	Wheeler	280	4,409	617	None	- -	None	(1)	(1)
255	West Linn	6,650	8,571	47	None	- -	None	(1)	(2)
252	White City	2,000	12,943	9	113,000	56	None	(1)	(1)

TABLE C-1

WPC ORE No.	Name of Applicant	III A Bonds Voted	Cash or Bonds Sold	III B Eng. Plans Days	III C Project Under Const.	IV A AWP	B Perm. Fac.	C Int. Fac.
278	Aumsville	No	No	90	No		X	
223	Bandon	No	$81,200	Comp.	Site prep. comp.		X	
246	Bay City	$300,000	No	90	No		X	
279	Bear Creek Valley SA	Yes	No	Pre. Comp.	No	X		
261	Bend	$540,000	Sold	30	No		X	
214	Brookings	Completed		Comp.	Comp.		X	
280	Cannon Beach	No	No	30	No		X	
234	Clackamas Co. SD #1	Yes	No	Comp.	No	X		
285	Clack. Co. Comm. Coll.	Cash	$63,200	Pre. Comp.	No	X		
253	Cloverdale S.D.	No	No	90	No		X	
257	Creswell	No	No	Comp.	No		X	
202	Dundee	$135,000	No	Comp.	No		X	
254	Eugene	Yes	Yes	30	No	X		
268	Gresham	Yes	Yes	30	No	X		
256	Halsey	Yes	Yes	Comp.	Yes	X		
242	Hammond	No	No	Pre. Comp.	No		X	
269	Hines	No	No	Comp.			X	

TABLE C-2

WPC ORE No.	Name of Applicant	III A Bonds Voted	III A Cash or Bonds Sold	III B Eng. Plans Days	III C Project Under Const.	IV A AWP	IV B Perm. Fac.	IV C Int. Fac.
267	Klamath Falls	Yes	Not Sold	90			X	
277	LaGrande	No	$11,156	60	-		X	
221	Lake Oswego	Not Req.	$68,000	Comp.	Comp.	X		
220	Lebanon	$210,000	$210,000	Comp.	Comp.		X	
274	Lexington	No	-0-	120	-		X	
260	Madras	No	-0-	300			X	
275	Medford	$4,500,000	$200,000	Comp.		X		
262	Merrill	$100,000	-0-	Comp.	-		X	
263	Moro	Not. Req.	$51,750	Comp.	-		X	
286	McMinnville	$1,300,000	-0-	60	-	X		
226	Nehalem	$220,000	-0-	14	-		X	
251	Newberg	$345,000	-0-	-			X	
265	North Powder	$229,500	-0-	90	-		X	
283	North Roseburg SD	Not Req.	$50,580	Comp.		X		
271	Oak Lodge S.D.	Not Req.	$33,000	Comp.	Comp.	X		
216	Oakland	$165,000	$273,950#	Comp.		X		

Includes $133,000 from sale of bonds

TABLE C-3

WPC ORE No.	Name of Applicant	III A Bonds Voted	III A Cash or Bonds Sold	III B Eng. Plans Days	III C Project Under Const.	IV A AWP	IV B Perm. Fac.	IV C Int. Fac.
219	Odell S.D.	$342,000	$342,000	Comp.	Comp.		X	
258	Ontario	$329,580	$329,580	Comp.	Yes	X		
287	Paisley	$100,000	Bonds 8/1/69	30	No		X	
288	Parkdale	$86,400	No	Comp.	No		X	
238	Pendleton	$1,400,000	$100,000	270	No		X	
224	Philomath	None	None	120	No		X	
244	Portland (Front)	None	70,310	7	No	X		
245	Portland (Johnson)	None	$272,730	120	No	X		
249	Portland (Rivergate)	None	$51,620	10	Dec. 1968	X		
272	Portland (Treatment)	None	$1,687,000	1/1/1970	No	X		
222	Prineville	None	$28,000	90	No		X	
273	Rockaway	None	$26,750	120	No		X	
233	Reedsport	$500,000	$163,000	Comp.	No		X	
232	Salem (West)	None	$769,657	-	Aug. 1968	X		
218	Sheridan	None	$4,300	120	No		X	

TABLE C-4

WPC ORE No.	Name of Applicant	III A Bonds Voted	III A Cash or Bonds Sold	III B Eng. Plans Days	III C Project Under Const.	IV A AWP	IV B Perm. Fac.	IV C Int. Fac.
228	Sublimity	None	None	200	No		X	
250	Tillamook	$76,000	$96,000	Yes			X	
270	The Dalles	None	None	No	No		X	
264	Toledo	$372,000	None	360	No	X		
282	Troutdale (Edgfield)	No	$120,000	90	No	X		
281	Troutdale (B. Cr. Intr)	No	$40,000	30	-	No CRAG App.		
284	Uplands S.D.	No	None	90	-	No CRAG App.		
276	Veneta	Yes	$65,000	30	-	Rec. by CLPC		
259	Wallowa	None	$30,000	Rec'd	-		X	
241	Warrenton	Yes	$400,000	Approved	Yes	X		
243	Wheeler	Yes	$10,000	Rec'd	-		X	
255	West Linn	Yes	$600,000	Soon	-	No CRAG App.		
252	White City	Yes	$18,613	Approved	Comp.		X	

TABLE
D-1

POINTS

WPC Ore No.	Name of Applicant	IA TC V	IB C per C	IC O.S.B.	ID Pr. G.	IIA Tr. Req.	IIB P.A.	IIIA Fis. Pr.	IIIB Eng. Pl.	IIIC Const.	IV Eff. Use	
278	Aumsville	8	10	-	5	5	9	0	6	-	5	48
223	Bandon	5	8	2	5	5	10	0	12	-	5	52
246	Bay City	9	10	-	5	5	10	10	6	-	5	60
279	Bear Crk. Valley SA	4	5	-	5	5	10	10	2	-	5	46
261	Bend	4	2	-	5	5	10	13	8	-	5	52
214	Brookings	3	1	2	5	5	9	13	12	5	5	60
280	Cannon Beach	1	10	10	5	5	9	0	8	-	5	53
234	Clackamas Co. SD #1	6	10	-	5	5	9	-	12	-	5	52
285	Clack. Co. Comm. Coll.	4	4	-	5	5	6	13	2	-	5	44
253	Cloverdale S.D.	6	10	-	5	5	9	0	6	-	5	46
257	Creswell	7	1	5	5	5	9	-	12	-	5	49
202	Dundee	2	10	-	5	5	9	10	12	-	5	58
254	Eugene	3	1	7	-	5	10	13	8	-	5	52
268	Gresham	3	6	3	5	5	9	13	8	-	5	57
256	Halsey	6	10	-	5	5	9	13	12	5	5	70
242	Hammond	4	10	-	5	5	9	-	2	-	5	40
269	Hines	7	1	2	5	5	9	-	12	-	5	46

TABLE
D-2

WPC Ore No.	Name of Applicant	POINTS IA TC V	IB C per C	IC O.S.B.	ID Pr. G.	IIA Tr. Req.	IIB P.A.	IIIA Fis. Pr.	IIIB Eng. Pl.	IIIC Const.	IV Eff. Use	
267	Klamath Falls	4	3	2	5	5	10	10	6	-	5	50
277	La Grande	6	1	2	5	5	8	0	6	0	5	38
221	Lake Oswego	1	1	3	5	5	8	13	12	5	5	58
220	Lebanon	4	1	1	5	5	8	13	12	5	5	59
274	Lexington	5	10	0	5	5	9	0	2	0	5	41
260	Madras	3	10	0	5	5	10	0	2	0	5	40
275	Medford	3	6	1	5	5	10	10	12	0	5	57
262	Merrill	7	6	0	5	5	10	10	12	0	5	60
263	Moro	5	7	0	5	8	9	13	12	0	5	64
286	McMinnville	5	6	1	5	5	8	10	8	0	5	53
226	Nehalem	7	10	0	5	5	10	10	12	0	5	64
251	Newberg	5	6	2	5	5	8	10	2	0	5	48
265	North Powder	9	10	0	5	5	9	10	6	0	5	59
283	North Roseburg SD	10	1	1	5	5	9	13	12	0	5	61
271	Oak Lodge S.D.	4	1	4	5	5	8	13	12	5	5	62
216	Oakland	8	10	0	5	5	9	13	12	0	5	67

TABLE
D-3

POINTS

WPC Ore No.	Name of Applicant	IA TC V	IB C per C	IC O.S.B.	ID Pr. G.	IIA Tr. Req.	IIB P.A.	IIIA Fis. Pr.	IIIB Eng. Pl.	IIIC Const.	IV Eff. Use	
219	Odell S.D.	3	10	0	5	5	9	13	12	5	5	67
258	Ontario	3	5	2	5	8	9	13	12	5	5	67
287	Paisley	9	10	0	5	5	9	10	8	-	5	61
288	Parkdale	5	10	0	5	5	9	10	12	-	5	61
238	Pendleton	5	3	0	5	5	8	10	2	-	5	43
224	Philomath	6	10	2	5	5	8	-	2	-	5	43
244	Portland (Front)	2	1	0	-	5	8	13	12	-	5	46
245	Portland (Johnson)	2	1	0	-	5	9	13	6	-	5	41
249	Portland (Rivergate)	2	1	0	-	5	8	13	12	5	5	51
272	Portland (Treatment)	2	1	0	-	5	8	13	2	-	5	36
222	Prineville	5	1	2	5	5	9	-	6	-	5	38
273	Rockaway	4	6	8	5	8	8	13	2	-	5	59
233	Reedsport	5	6	0	5	5	10	10	12	-	5	58
232	Salem (West)	3	1	4	-	5	8	13	12	5	5	56
218	Sheridan	8	2	0	5	5	8	-	2	-	5	35

TABLE
D-4

Ore No.	Name of Applicant	POINTS IA TC V	IB C per C	IC O.S.B.	ID Pr. G.	IIA Tr. Req.	IIB P.A.	IIIA Fis. Pr.	IIIB Eng. Pl.	IIIC Const.	IV Eff. Use	
228	Sublimity	7	8	0	5	5	9	-	2	-	5	41
250	Tillamook	4	1	0	5	5	10	13	12	5	5	60
270	The Dalles	5	4	0	5	5	9	-	2	-	5	35
264	Toledo	1	3	1	5	5	10	10	2	-	5	42
282	Troutdale (Edgefield)	5	6	10	5	5	9	13	6	-	5	64
281	Troutdale (B.Cr. Intr)	5	6	10	5	5	8	-	8	-	5	52
284	Uplands S.D.	4	9	0	5	5	9	-	6	-	5	43
276	Veneta	7	6	0	5	5	9	13	8	-	5	58
259	Wallowa	8	6	0	5	5	8	13	12	-	5	62
241	Warrenton	5	8	0	5	5	9	13	12	5	5	67
243	Wheeler	6	10	0	5	5	10	10	8	-	5	59
255	West Linn	1	2	0	5	5	9	13	8	-	5	48
252	White City	1	1	3	5	5	10	13	12	5	5	60