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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., May 23, 1969

Civic Center Library
Corner of 5th & Anderson Sts.
Coos Bay, Oregon

A. Minutes of the 139th meeting (April 25, 1969)

B. Project plans for April 1969

C. Status of Air and Water Pollution Control in the Coos Bay area

D. Coos Head Timber, Pulp Division - staff report

E. Menasha - staff report

F. Erdman Packing Company

G. Coos Head Timber Co., Coos Bay - wigwam waste burner

H. Weyerhaeuser Co., North Bend - wigwam waste burner

I. Mt. Pit Lumber Co., Medford - wigwam waste burner

J. Waste Discharge Permits - Domestic

1. Brookings
2. Bunker Hill Sanitary District
3. Coos Bay (No. 1) (Renewal)
4. Coos Bay (No. 2-Empire) (Renewal)
5. Coquille
6. Eastside (Renewal)
7. Florence
8. Myrtle Point
9. North Bend (Renewal)
10. Wedderburn Sanitary District

K. Reedsport Waste Discharge Permit modification

L. Waste Discharge Permits - Industrial

1. Benham Concrete, Coquille (Renewal)
2. Coos Head Timber Co. (Plywood), Coos Bay
3. Georgia Pacific Corp., Coos Bay
4. Georgia Pacific Corp., (Pulp Mill), Toledo (Renewal)
5. International Paper Co., Plywood Division, Gardiner
6. Weyerhaeuser Company, North Bend

M. Waste Discharge Permits - Action delayed from previous meetings

1. Grants Pass (Renewal or extension)
2. Mountain States Investment Builders, Portland
3. Willow Creek Mobile Villa, Washington County

N. Tax Relief Applications

1. T-70 The Dalles Cherry Growers
2. T-54 Georgia Pacific, Rogue River
3. T-72 Georgia Pacific, Rogue River
4. T-65 Willamette Industries, Albany

O. Metzger Sanitary District proposal

P. Reynolds Aluminum Co., Troutdale

Q. Federal Grant Program, priority point system

MINUTES OF THE 140th MEETING

of the

Oregon State Sanitary Authority

May 23, 1969

The 140th meeting of the Oregon State Sanitary Authority was called to order by the Vice-Chairman at 10:00 a.m., May 23, 1969, in the Civic Center Library, Corner of 5th and Anderson Streets, Coos Bay, Oregon. Members present were B.A. McPhillips, Vice-Chairman, Edward C. Harms, Jr. and Storrs S. Waterman.

Mr. John D. Mosser, Chairman and Mr. Herman P. Meierjurgen were 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 and Joseph A. Jensen, 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, District Engineer; and Harold W. McKenzie, F.G. Odell, F.A. Skirvin and Ronald C. Householder, Associate Engineers.

MINUTES

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the minutes of the 139th meeting of the Sanitary Authority held in Room 36 of the Portland State Office Building on April 25, 1969, be approved as prepared by the Secretary.

PROJECT PLANS

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the actions taken by the staff on the following 16 project plans for water pollution control and 2 air quality control projects during the month of April 1969 be approved:

Water Pollution Control

Date	Location	Project	Action
4/3	Portland	S.E. 45th & Johnson Creek Blvd. sewer	Prov. app.
4/17	Tigard	Bellwood Subd. sewers	Prov. app.
4/17	Beaverton	New Horizons II Subd. sewers	Prov. app.
4/17	Springfield	Sewer #SP-50-69	Prov. app.

Date	Location	Project	Action
4/17	Eugene	Emerald St. & Railroad Blvd. sewers	Prov. app
4/17	Beaverton	Hyland Hills sewers	Prov. app.
4/18	Tigard	Hampton Street sewer	Prov. app.
4/18	Aloha San. Dist.	Four Seasons #3 Subd. sewers	Prov. app.
4/21	Medford	Storm sewers	Prov. app.
4/22	Klamath Falls	Buena Vista sewers	Prov. app.
4/23	Multnomah County	Bridgeview Moorage sewers	Prov. app.
4/28	Milwaukie	Lamplighter Street sewer	Prov. app.
4/29	Oak Lodge San. Dist.	Kimber Lane, single family development, 4 homes, sewers	Prov. app.
4/29	Canby	Canby Middle School sewer	Prov. app.
4/29	Woodburn	Nazrene Dist. Center Sta.	Prov. app.
4/30	Ashland	Kensington Subd. sewers	Prov. app.

Air Quality Control

Date	Location	Project	Action
4/29	Milton-Freewater	Price's Grocery Incin.	Cond. app.
4/29	Albany	Albany High School Incin.	Referred to MWVAPA

STATUS OF AIR AND WATER POLLUTION CONTROL IN THE COOS BAY AREA

Mr. Householder presented a staff report on the status of air pollution and sources in Coos County. A copy of the report dated May 13, 1969 has been made a part of the Authority's permanent files in this matter. Mr. Householder reported that particulate fallout, visibility reduction and odors are the major air pollution problems in Coos County at the present time, that the primary source of these problems is the forest products industry, and that the elimination or the proper modification and operation of wigwam waste burners would result in a significant improvement in the area's air quality.

Mr. Carter presented a staff report on the status of water quality in Coos Bay. The report was illustrated by colored slides. He stated that in the main portion of the bay the water quality is generally good but in certain localized areas, particularly in the upper tributary sloughs, the water quality is degraded principally by leachate and by floating and sunken debris resulting from intensive log dumping, handling and storage. In the lower bay localized pollution is caused by wastes from two pulp mills.

Mr. Carter's report contained a proposed program for abatement and control of water pollution sources in Coos Bay.

Mr. Harold A. Leedom, City Manager, presented a statement in behalf of the city of Coos Bay. He pointed out that the cities of Coos Bay, Eastside and North Bend, together with the Port of Coos Bay and Coos County, have applied for a federal grant to finance a study of the water pollution control problems of the bay and of the feasibility of installing an area-wide sewage and waste collection and disposal system.

Because this study is not yet under way, he asked that the cities and industries be given an additional year in which to plan and provide required improvements to their existing sewage and waste treatment facilities. He said the cost of the area-wide study has been estimated at $75,000 and they hope to get a federal grant for at least three-fourths of that amount. In response to a question from one of the Sanitary Authority members, he stated that as yet no specific request had been made of the local industries to contribute toward the survey cost.

Mr. Jack Isadore, City Manager for North Bend, then reported that the city of North Bend supports the area-wide study and will contribute toward its financing but at the same time is proceeding to solve its own problems within the time schedule set by the waste discharge permit issued by the Sanitary Authority. He said they expect to complete the installation of a sewer connection for the Simpson Heights area this summer which will eliminate the raw sewage discharge to the bay from that portion of the city. He commented that under the provisions of the city's waste discharge permit they are required to develop their financial plans 6 months in advance of the engineering plans whereas they consider it more advantageous to develop both plans at the same time. He said further that the major industries in the area have all indicated that they support the master area-wide study mentioned by Mr. Leedom.

Mrs. Dwight Burch presented a statement in behalf of the League of Women Voters of Coos Bay. She said they support long range planning, they oppose degradation of air and water quality, they are in favor of water quality standards that are high enough to permit full body contact recreation and commercial and sport fishing, they urge adoption of specific individual water quality standards for each bay and estuary, and they advocate assignment of responsibilities to agencies with sufficient power and willingness to take appropriate enforcement action.

Mr. Murl Storm discussed the recreational plans of the Bureau of Land Management for the north spit (sand dune) area. He said his agency owns some 3,151 acres with 6½ miles of ocean frontage and 3½ miles of bay frontage. He predicted a record high growth in recreational use of this part of the Oregon coast and said there will be a $2½ million investment for camp sites and related facilities. He said a large portion of the area is suitable for development now.

Mr. Henry Stewart read a letter dated May 23, 1969 and signed by Colonel Robert L. Bangert which set forth the interests of the U.S. Corps of Engineers in the water and land resources of the Coos Bay area. In response to a question by Mr. Waterman, he said that the dredging operations which are conducted by the Corps for maintenance of navigation are coordinated with the fishery agencies so that they cause the least possible injury to the fishery resources.

He referred to the fact that some of the federal land withdrawn by the Corps had been leased to the Menasha Corporation as a lagoon site for disposal of industrial wastes. Mr. McPhillips mentioned that during an inspection trip on the day preceding the meeting the Authority members had observed several old car bodies placed along the lagoon dike. He asked if the Corps approved of such use and Mr. Stewart replied that such a use was not the policy of the Army Engineers.

Mr. Kelly Conover read a statement of the Oregon Fish Commission concerning water pollution in Coos Bay. He described the forms of fish life in the bay that are of sport and commercial value. He expressed concern about the pollution caused by quarry operations in Kentuck Creek, the waste discharges from the Coos Head Timber Company sulfite mill and Menasha Corporation waste lagoon, and the log dumping, handling and storage in the upper sloughs.

Mr. Edward H. Schwartz, District Fisheries Biologist, presented a similar statement for the Oregon Game Commission.

Mr. Paul Rudy of the University of Oregon Institute of Marine Biology discussed the unique characteristics of the estuary, the importance of marine animals and organisms, and the interdependence of the various forms of estuarine life. He mentioned that some destruction of estuarine areas

has already taken place as a result of the developments made by man but that thus far Oregon is quite lucky because our estuaries have not yet been lost.

He stated that some forms of marine life have already been lost or greatly reduced. Native oysters are no longer present in the bay. Gaper clams no longer exist adjacent to the city of Coos Bay. Other forms, if lost, could have a detrimental effect on the ecology of the bay even though they might not be directly beneficial to man.

Mr. William Schroeder, member of the Coos Bay Port Commission, discussed the state laws pertaining to port authorities. He was not sure regarding their powers relating to pollution control or construction of pollution control works. Mr. Harms suggested that Mr. Silver review the statutes and advise the Port Commission regarding that point.

Mr. McPhillips then asked if anyone else in the audience wished to make a statement regarding the matter of air and water pollution in Coos Bay. There being none, the Vice-Chairman announced that the next item on the agenda would be discussed.

COOS HEAD TIMBER, PULP DIVISION

Mr. Weathersbee presented a staff report dated May 23, 1969, regarding the problem of waste disposal at the Coos Head Timber Company pulp mill located at Empire on Coos Bay. A copy of this report has been made a part of the Authority's permanent files in this matter.

The company's present waste discharge permit expires June 30, 1969 and requires primary treatment and extension of the mill outfall sewer by July 31, 1969. The company will not be able to meet this deadline because construction has not even been started on the primary treatment works and after they are installed a detailed study is required to determine if extension of the outfall will provide adequate mixing and dilution sufficient to prevent injury to marine life.

Mr. C. Wylie Smith, Vice-President, then presented a statement for the company. He claimed that facilities installed since operation of the pulp mill was resumed after purchase from the Scott Paper Company in March 1963, have reduced the discharge of knots, pulp screenings and other fiber

in the white water by 95%, and the waste wood solids in the hydraulic barker effluent by 90%. He admitted that nothing has been done yet to reduce the load of spent sulfite liquor that is discharged directly to the bay and that as yet no consultants have been retained to study the feasibility and adequacy of extending the outfall sewer to mid-channel.

He spent considerable time trying to convince the Authority members that the mill's present waste disposal practices are not causing serious pollution in the bay. He objected to certain claims made by the Fish Commission concerning the effects of the mill effluent.

Mr. McPhillips asked Mr. Smith to submit a letter confirming his statements made at the meeting which he agreed to do.

COOS HEAD TIMBER COMPANY (McKenna Plant), Coos Bay

Mr. Householder presented the staff report dated May 14, 1969, concerning the air pollution caused by operations of the Coos Head Timber Company McKenna plant located about one-half mile from the Eastside city limits. A copy of said report has been made a part of the Authority's permanent files in this matter. The report contained a staff recommendation that the company be directed to submit a schedule for elimination of its wigwam waste burner for the purpose of reducing air pollution.

Mr. Willis Smith, representative of the company, said their burner was only one of 15 in the area and therefore contended that they should not be required to do anything unless the same requirements were followed by the other companies. He said he would not admit that the McKenna plant burner is an air pollution problem, but did say the company plans eventually to abandon it. He claimed that they have already reduced the quantity of wood waste by 75% and so are now burning only 25% as much as they formerly did, and that in 6 months all planer shavings will be removed leaving only sander dust.

In response to a question from the Authority, he said he could not say definitely when the burner might be abandoned - maybe by 1970. It is now used 24 hours per day and generally 7 days per week.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the company be directed to submit before the June 27 meeting of the Authority a satisfactory schedule for elimination of its wigwam waste burner.

The meeting was adjourned at 12:10 p.m. and reconvened at 1:30 p.m.

MENASHA CORPORATION WASTE DISPOSAL

Mr. Weathersbee read a staff report dated May 6, 1969, relating to the disposal of wastes from the Menasha Corporation pulp mill located across the bay from North Bend. A copy of said report has been made a part of the Authority's permanent files in this matter. Mr. Weathersbee pointed out that the seepage from the waste lagoons into the bay as observed by the Authority members during their inspection trip, is in violation of the Corporation's waste discharge permit issued in December 1968 and which expires December 31, 1969.

Mr. E.C. Manders, General Manager, presented a statement for the company. He contended that the seepage from the lagoon is not causing any detrimental effects other than discoloration in the bay water. He said they have ordered 80 tons of bentonite which they will use in an attempt to seal the lagoon bottom and dikes so as to stop further seepage into the bay. He stated further that they have had a preliminary study made of the feasibility of installing an ocean outfall and that the report will be submitted to the Authority's staff in about 2 weeks.

He expressed the opinion that $800,000, the estimated cost of an ocean outfall, is too much for a mill the size of theirs to spend for waste disposal. He stated that Menasha supports the area-wide study mentioned earlier by Mr. Leedom and Mr. Isadore.

Their alternate proposal is to build another lagoon. Mr. Harms said he was reluctant to approve anything that would continue the present problem or cause it to reoccur. Mr. McPhillips also expressed opposition to the construction of another lagoon. Mr. Manders then claimed that a very high degree of treatment is being accomplished by the present system with the BOD of the raw waste being reduced from 4,000 ppm to 575 ppm in the lagoon and to 10 to 14 ppm after seeping through the dikes.

Mr. Weathersbee said the sealing of the lagoon by use of bentonite might be successful but he was concerned about what they would do with the lagoon overflow that would result.

Mr. Waterman pointed out that the company is utilizing some reclaimed waste paper in its finished product.

Mr. Harms warned the company not to use any more car bodies for stabilization of the sand dikes. Mr. Manders commented that he wondered how they could get the car bodies placed there for only $7.50 each until he learned that the owner was paid $5.00 to get rid of them.

Mr. Cal W. Heckard of the Coos Bay-North Bend Water Board requested that the Authority permit Menasha to continue operating its present waste disposal system so that it could participate in the proposed area-wide study. He is opposed to Menasha's proposal to install another lagoon on the basis that it might pollute the adjacent ground water supply. He asked that the Authority give its full support to the area-wide study proposal.

Mr. McPhillips said he did not see how the Authority could wait until a master system study had been completed before anything else is done to alleviate the present conditions.

Mr. Manders said the sealing operations would be started in a week. Mr. Harms asked the Authority staff to keep track of the progress made in sealing the lagoon and told Mr. Manders the company must start immediately on a long range solution to its waste disposal problem. Mr. Waterman said he did not think pumping the waste across the beach was satisfactory and expressed the hope the master plan study would be far enough by November to give some indication of a possible solution before expiration of the company's present waste discharge permit.

ERDMAN PACKING COMPANY

Mr. Baton reported on the status of Mr. Erdman's efforts to provide adequate waste disposal for his meat packing plant and cattle feeding lot located near Bandon. Mr. Baton recommended the company be given until October 1, 1969 to complete its proposed project.

Mr. Jim Olson of the Jimpat Cranberries, Inc. registered a complaint about the pollution being caused on his property by the manure and other wastes which drain from the Erdman operations. He claimed that the manure has been as much as 6" to 18" deep on his property, that it is not just a nuisance but a serious economic loss to him, and that he requested Mr. Erdman two years ago to abate the pollution, but he failed to do it.

He asked what would happen if the facilities which Mr. Erdman is now installing are not adequate. Mr. McPhillips replied that action would be taken to stop the operation.

Mr. Myron Spady, Attorney and owner of property downstream which he proposes to use for residential development, also complained about the pollution caused by the Erdman Company. He substantiated the testimony given by Mr. Olson. He expressed the opinion that the cattle feeding lot is the major source of the problem. There are 500 head of cattle being fed on less than 12 acres of land. He said the ground is completely saturated and the feed lot is right over the stream. He reported that he has filed legal action against Mr. Erdman and will be taking his deposition next week.

In reply to a question by Mr. Harms if the problem was worse this past winter Mr. Spady said it has been real bad for the past 2 years.

Mr. Baton was asked by the Authority members to present a progress report at the June 27 meeting and to direct Mr. Erdman to have detailed plans submitted by that time.

GRANTS PASS WASTE DISCHARGE PERMIT

A staff memorandum report regarding the status of the Grants Pass sewerage works project had been submitted to the city and Authority members in advance of the meeting.

Mr. Archie Twitchell, City Manager, was present to represent the city. He said the report of their consulting engineers, Brown and Caldwell, had been received only 2 weeks ago, that the study covered a 20 square mile area of which only 5 square miles are within the city limits and some 3 to 4 square miles are in the downstream Redswood District for which a separate lagoon system is being proposed, that the city will apply for federal and state grants to help finance construction, and that they will also apply for federal funds for a study of how best to solve the city's infiltration problem. He claimed that it would cost $2.8 million to provide treatment for the extra infiltration.

He requested (1) approval of the proposed plan for sewage disposal for the Redwood District which would be complete storage by lagoons in the summer and 80-85% treatment with overflow to the Rogue in the winter,

(2) extension of the present waste discharge permit to July 1, 1971 and (3) an indication of whether the design criteria in the engineer's report are acceptable. He claimed that the city's raw loading is only 3,000 lbs./day and with 80% treatment only 600 lbs./day to the river. He said they wanted to start negotiations with the Redwood District next week.

Mr. Twitchell also pointed out that the Fruitdale-Harbeck sewers are not yet under construction, but he expressed hope that the contract would be awarded at the next meeting of the City Council. (Note: It had been understood at the March meeting that this project was then under construction.)

Mr. Weathersbee stated that the Authority staff had not had time enough to analyze the engineers' proposals although they appeared to be fairly good approaches to the problem.

Mr. Norris of Brown and Caldwell was also present and reviewed briefly for the members their recommendations to the city.

In response to a question by Mr. Lynd, Mr. Norris stated that the city's main plant after improvement would provide 90% treatment.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the waste discharge permit for the city of Grants Pass be extended until the June 27, 1969 Authority meeting.

WEYERHAEUSER COMPANY - North Bend

Mr. Householder presented the staff report dated May 14, 1969 regarding the air pollution caused by the Weyerhaeuser Company sawmill, particle board plant and plywood plant complex located in North Bend. He referred also to a news release by the company dated May 13 which indicated the company would abandon its wigwam waste burner on or before December 15, 1969. The staff report recommended that the company be directed to abandon the wigwam waste burner and to submit a program to reduce the atmospheric emissions from the plywood plant to an acceptable level.

Mr. Oscar S. Weed was present to represent the company. He said they had been studying the plywood plant problem ever since the plant first started operating some 5 years ago, but that more emphasis had been given to it the last 2 years.

Mr. Harms asked if they could submit a schedule by the next Authority meeting and Mr. Weed said they would try.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the staff recommendations be adopted and the Weyerhaeuser Company be asked to submit the required schedule by the June 27, 1969 Authority meeting.

WEYERHAEUSER COMPANY WASTE DISCHARGE PERMIT

Mr. Weed said the company had not had sufficient time to review thoroughly the proposed waste discharge permit provisions for their North Bend complex because the proposed permit had reached them only a few days before the meeting.

It was therefore MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the company's temporary permit be continued until the next meeting of the Authority.

REYNOLDS METALS COMPANY - Troutdale

Mr. Skirvin reviewed the staff report covering the proposal of the Reynolds Metals Company to expand aluminum production and to improve the controls for atmospheric emissions at its Troutdale plant. The staff report, a copy of which has been made a part of the Authority's permanent files in this matter, recommended that the company's proposed expansion and modernization program be approved subject to certain limitations, conditions and requirements.

Mr. Harms asked if after the expansion in 1970 there would be any significant effect on public health, visibility, etc. Mr. Skirvin replied there would definitely be no such effect on public health but may be some on visibility.

Mr. Waterman raised questions about how the roof monitors could be sampled and monitored and about the description of plant property boundary lines.

Mr. William Campbell, Plant Manager, was present to represent the company. He said they are prepared to spend $3,000,000 for improvements to control more effectively the atmospheric emissions from the Troutdale aluminum reduction plant, that 1 pot line per year will be revised until all 4 existing lines are improved, that they have fully evaluated all forage fluoride data and are convinced that the expansion will cause no harm and will not violate proposed standards.

He then commented as follows on the conditions contained in the recommendation of the Authority staff report presented by Mr. Skirvin:

(1) Under condition B they would not want to be prohibited from selling part of their property if it met all Authority standards. He asked for a better description of the plant boundary.

(2) Under condition C he questioned the exact meaning of the word "immediately" because he said it would take a certain amount of time to make such an installation after it had been determined that it was necessary.

(3) Under condition D he thought the words "all available" were too encompassing and would require the submission of some data that would not be pertinent or necessary.

(4) Under condition A he asked what was expected regarding the extent of data to be submitted for the roof monitors.

(5) He objected to condition G which would delay installation of an additional stack for the anode plant and explained why the company should be permitted to install it as planned.

After further discussion, it was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the staff recommendations be tentatively approved with the exception that condition G be eliminated and with the provision that appropriate changes be made in the wording of conditions A, B, C and D to cover the points raised by Mr. Campbell.

The meeting was recessed at 4:10 and reconvened at 4:15 p.m.

TAX CREDIT FOR WILLAMETTE INDUSTRIES, Albany

The memorandum prepared by the staff and submitted to the members in advance of the meeting for a tax credit for air pollution control facilities installed at the Duraflake plant of Willamette Industries, Inc. at Albany was reviewed by Mr. Skirvin.

It was MOVED by Mr. McPhillips, seconded by Mr. Harms and carried that a tax credit certificate be issued the Willamette Industries Inc. for air pollution control facilities installed at its Albany plant at a cost of $21,654.93 as covered by application T-65.

WILLOW CREEK MOBILE VILLA

Mr. Weathersbee reviewed the staff report for this proposed project in Washington County. He pointed out that the staff had concluded that connection to the Aloha Sanitary District sewage treatment plant is technically feasible and is desirable if found to be economically practicable. The alternative would be to install the separate disposal system proposed at the previous meeting. A proposed waste discharge permit based on the latter alternative had been prepared by the staff.

Mr. R.W. Nahstoll was present to represent the developer. He said they had had considerable difficulty trying to negotiate or deal with the Aloha Sanitary District. He said the district was asking a connection charge of $475 per trailer space which for 560 units amounted to a total connection charge for their development of $266,000. To this amount would be added the cost of constructing the sewer connection which their engineer estimated at $120,000. He said they could build their own plant and system for not more than $160,000 which would be considerably less than the $386,000 for connection to the Aloha system. He requested that they be permitted to build their own plant with the understanding that it would be temporary until connection could be made to an area-wide master sewer system.

Mr. Richard Milbrodt, Washington County Administrative Officer, was present and said he agreed with the staff report but he wants a county service district formed in the area and he also wants the county to have the right to review all plans.

Mr. Gordon Tupling, representative of Aloha, Metzger and West Slope Sanitary Districts, spoke in favor of connection to the Aloha District system.

After further discussion by the Authority members, it was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the waste discharge permit as proposed by the staff for construction and operation of a separate sewerage system and treatment plant for the Willow Creek Mobile Villa in Washington County be approved with the exception that line (b) in the first paragraph on page 1 be modified by adding the words "until connection to an area-wide sewer system can be made."

MOUNTAIN STATES INVESTMENT BUILDERS, Portland

A proposed waste discharge permit for the Mountain States Investment Builders project in Multnomah County had been prepared by the staff and further investigation and report concerning the receiving stream had been made since the April meeting of the Authority.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the waste discharge permit as proposed by the staff for the Mountain States Investment Builders project at N.E. 82nd Avenue and Alderwood Road in Multnomah County be approved with the exception that line (b) in the first paragraph on page 1 be modified by adding the words "until connection to an area-wide sewer system can be made."

MT. PITT LUMBER COMPANY, Medford

Mr. McKenzie reviewed briefly the staff report dated May 14, 1969 regarding the air pollution problem caused by the Mt. Pitt Lumber Company wigwam burner at Central Point.

The Secretary then read a letter dated May 22, 1969 which had been sent by mail to the meeting from Mr. Edward H. Collins, President of the company. In this letter Mr. Collins stated that a contract had been signed with Timber Products Company for installation of wood residue disposal system with completion scheduled for the week of July 7, 1969.

In view of this action by the company, it was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the staff be directed to confirm and evaluate the proposal of the company and to submit progress reports for June and July meetings of the Authority.

METZGER SANITARY DISTRICT PROPOSAL

Mr. Donald W. Prairie, Manager, was present to represent the Metzger Sanitary District. He reported that the present treatment works operated by the district are functioning well within their waste discharge permit requirements of 20/20 mg/liter for BOD and suspended solids. In April he said the BOD/suspended solids content of their effluent was 12/8 mg/liter and the overall efficiency was 95%. The plant is currently operating at approximately 78% of its design capacity.

To handle twice the present design flow they would propose to duplicate the existing treatment units and then to dispose of 1,000,000 gpd for irrigating two golf courses in the area so that the load on Fanno Creek in the summer would not be any greater than it is at present. Mr. Prairie said financing would be no problem as they have $200,000 earmarked for the project. He indicated they would consider it as a permanent installation.

After further discussion, it was MOVED by Mr. McPhillips, seconded by Mr. Harms and carried that the matter be set over until the June 27 meeting with instructions for the staff to make a report and recommendations at that time including the public health aspects of the proposal.

WASTE DISCHARGE PERMITS - Domestic

Mr. Lynd reviewed briefly the proposed waste discharge permits which had been prepared by the staff and submitted prior to the meeting to the Authority members and applicants for 10 domestic sewerage systems. He recommended that the proposed permit for the Bunker Hill Sanitary District be modified by adding in provision No. 4 on page 2 after the minimum frequency for the first three parameters the words ", after July 1, 1969."

There was further discussion by the Authority members regarding the proposed area-wide sewer study for Coos Bay. It was pointed out that planning for the individual projects should proceed on schedule and not be delayed pending the completion of a master system study, but they could be conducted concurrently and then if it were later determined that a master system would be the best solution, revisions to the time schedules could be considered.

It was MOVED by Mr. McPhillips, seconded by Mr. Waterman and carried that regular waste discharge permits be issued for Brookings, Bunker Hill Sanitary District, Coquille, Florence, Myrtle Point, and Wedderburn Sanitary District and be renewed for Coos Bay (No. 1), Coos Bay (No. 2 at Empire), Eastside and North Bend, all as proposed by the staff but with the modification to the Bunker Hill Sanitary District permit as recommended by Mr. Lynd.

WASTE DISCHARGE PERMITS - Industrial

Proposed waste discharge permits had been prepared by the staff and copies submitted in advance of the meeting to the Authority members and applicants for 6 industrial plants. Representatives of the Georgia-Pacific Corporation mill at Coos Bay were present and asked for more time to consider the proposed provisions of their permit because they had just received their copy a few days before the meeting. No objections were received from the other applicants.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the issuance of a regular waste discharge permit for the Georgia-Pacific Corporation mill at Coos Bay be deferred until the June 27 Authority meeting.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that regular waste discharge permits be issued for Coos Head Timber Company (Plywood) at Coos Bay and International Paper Company, Plywood Division, at Gardiner and be renewed for Benham Concrete at Coquille and Georgia-Pacific Corporation pulp mill at Toledo, all as proposed by the staff. (Note: Action on the Weyerhaeuser permit, the 6th applicant, had been taken earlier in the meeting.)

TAX CREDIT APPLICATIONS

Mr. Sawyer reviewed application T-70 submitted by The Dalles Cherry Growers for a tax credit for water pollution control facilities installed at a cost of $6,429.24, for their fruit processing plant located in The Dalles.

It was MOVED by Mr. Waterman, seconded by Mr. Harms and carried that the tax credit certificate as recommended by the staff be issued to The Dalles Cherry Growers pursuant to application T-70 for water pollution control facilities installed at a cost of $6,429.24.

Mr. McKenzie reviewed applications T-54 and T-72 submitted by Georgia-Pacific Corporation for tax credits for repairs and improvements made to the wigwam burner at the company's Rogue River veneer mill.

In the discussion which followed it was concluded that the approval of these requested tax credits might discourage other companies from phasing out of operation their wigwam waste burners. It was concluded further that the installation made by the Georgia-Pacific Corporation in this particular case did not satisfy all of the statutory requirements set forth in ORS 449.635.

It was therefore MOVED by Mr. Harms, seconded by Mr. Waterman and carried that tax credit applications T-54 and T-72 submitted by the Georgia Pacific Corporation for the Rogue River veneer mill be denied.

REEDSPORT WASTE DISCHARGE PERMIT MODIFICATION

Mr. Lynd reviewed the revised planning, financing and construction schedule that had been submitted by the city of Reedsport and contained in the staff memorandum dated May 15, 1969. A copy of the latter has been made a part of the Authority's permanent files in this matter.

He recommended that the city's schedule be revised as follows and that the waste discharge permit be extended until December 31, 1970:

Advertise for bids - - - - - - - - - - - - - June 30, 1969
Open bids - - - - - - - - - - - - - - - - - July 22, 1969
Award contract - - - - - - - - - - - - - - - August 11, 1969
Complete site preload by October 1, 1969
Complete construction by October 1, 1970

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that the waste discharge permit for the city of Reedsport be modified as recommended by Mr. Lynd and that it expire December 31, 1970.

FEDERAL GRANT PROGRAM - PRIORITY POINT SYSTEM

Proposed revisions to the priority point system used for determining which applicants should receive priorities for receipt of federal grants had been prepared by the staff and submitted to the Authority members in advance of the meeting.

It was MOVED by Mr. Harms, seconded by Mr. Waterman and carried that Proposal B dated May 14, 1969 plus paragraph IV be adopted as follows:

State of Oregon
CRITERIA FOR DETERMINING PRIORITY OF ELIGIBLE PROJECTS
FOR FEDERAL CONSTRUCTION GRANTS UNDER PL 84-660

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	7400-8799	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 (35 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. Efficient Use of Grant Funds

A.	In accordance with comprehensive or coordinated area-wide plan	5
B.	Permanent facility where no area-wide plan is feasible	5
C.	Interim or temporary facility	1

Before adjourning the meeting the Vice-Chairman called on Mr. H.E. Timeus who had indicated earlier he wanted to discuss pollution in the lower Rogue River, but he had already left.

There being no further business, the meeting was adjourned at 5:45 p.m. The next meeting is scheduled for Friday, June 27, 1969, beginning at 10:00 a.m. in the Portland City Council Chambers, City Hall, Portland, Oregon.

Respectfully submitted,

Kenneth H. Spies

Kenneth H. Spies, Secretary

Project Plans

During the month of April, 1969, the following 16 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
4/3	Portland	S.E. 45th & Johnson Creek Blvd. sewer	Prov. app.
4/17	Tigard	Bellwood Subd. sewers	Prov. app.
4/17	Beaverton	New Horizons II Subd. sewers	Prov. app.
4/17	Springfield	Sewer #SP-50-69	Prov. app.
4/17	Eugene	Emerald St. & Railroad Blvd. sewers	Prov. app
4/17	Beaverton	Hyland Hills sewers	Prov. app.
4/18	Tigard	Hampton Street sewer	Prov. app.
4/18	Aloha San. Dist.	Four Seasons #3 Subd. sewers	Prov. app.
4/21	Medford	Storm sewers	Prov. app.
4/22	Klamath Falls	Buena Vista sewers	Prov. app.
4/23	Multnomah County	Bridgeview Moorage sewers	Prov. app.
4/28	Milwaukie	Lamplighter Street sewer	Prov. app.
4/29	Oak Lodge San. Dist.	Kimber Lane, single family development, 4 homes, sewers	Prov. app.
4/29	Canby	Canby Middle School sewer	Prov. app.
4/29	Woodburn	Nazrene Dist. Center Sta.	Prov. app.
4/30	Ashland	Kensington Subd. sewers	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 April 1969.

Date	Location	Project	Action
29	Milton-Freewater	Price's Grocery Incinerator	Cond. Approval
	Albany	Albany High School Incinerator	Referred to Mid-Willamette Valley Air Pollution Authority

AIR POLLUTION AND SOURCES IN COOS COUNTY

A Staff Status Report

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

May 13, 1969

AIR POLLUTION AND SOURCES IN COOS COUNTY

BACKGROUND

COOS COUNTY AREA: Coos County, one of seven coastal counties in Oregon, has an area of 1627 square miles and a population of 55,320. With twenty billion board feet of saw timber, Coos County industries are dominated by lumber manufacturing, which employs 58% of the working force. Of 20,460 employed, lumber and wood products manufacturing directly account for 5,830 and pulp and paper 230. Shipping, commercial and sport fishing, agricultural specialty crops, and recreation are other prominent and growing economic activities.

METEOROLOGICAL FACTORS IN THE COOS BAY POLLUTION REGIME: The Coos Bay area exhibits a climate typical of the northwest coast: mild temperatures, rainy winters, fogginess in late summer and fall, and well-defined seasonal wind patterns. Average precipitation for the summer is 2.43 inches, and for the winter, 25.44 inches. The average temperature in the summer is 59°F and in the winter, 48.6 degrees.

Many of the climatic factors of the area also play an important role in its air pollution climate. For example, the prevailing winds, which are northerly in summer and southeasterly in winter are strong enough to carry coarser particulates (which are usually only a problem in the vicinity of a source) considerable distances downwind. When the land-sea breeze cycle and the effects of the hills surrounding the bay are superimposed on this seasonal flow pattern, the potential for area-wide transport of these particulates is significant.

Another factor of importance is the area's year-round high relative humidity, which through condensation on particulate matter, maximizes the visibility reduction effect of suspended particulates.

Finally, the late summer and fall months have a relatively high percentage (25%) of very light winds and calms, which allow for the prolonged accumulation of suspended particulates in the immediate bay area. Such an accumulation occurs on a short-term basis on most nights, unless there is an active storm moving through the area. For comparison purposes, it can be stated that the smoke and haze frequencies of the Coos Bay area and those of the Portland area in late summer and fall are quite similar.

BACKGROUND ON AIR POLLUTION PROBLEMS: The air pollution staff has conducted sampling and has worked with the major sources of air pollution in Coos County, particularly in the Coos Bay area, for many years. The activity of the staff has been restricted in the past for various reasons and further, accomplishments have often

been obliterated by new sources or by eventual deterioration of the controls on sources which had once been improved. The increasing demand for a better environment has also made unacceptable a situation which in past years might have been tolerated.

It cannot be overemphasized that the disposal of excess wood residues by the timber products industry, upon which the economy of the area is based, is the overwhelming cause of air pollution in Coos County.

The standard method of disposal has been to burn the material in boilers or in wigwam burners. In past years, this excess represented a larger portion of the logs than it does currently. Increasing utilization of wood residues does offer much hope that many wigwam burners can be eliminated in the very near future. Those wigwam waste burners which cannot be reasonably phased out in the very near future will have to be extensively modified and carefully operated if air quality goals are to be achieved.

The effect of the contaminants discharged into public air from these sources upon the welfare of the people in the area and their enjoyment of the environment, as well as the effect upon tourism in the area, cannot be accurately measured, but must be significant.

AIR POLLUTION MONITORING: Fallout sampling has been conducted intermittently in Coos County for many years. Most of this sampling has been conducted as a result of complaints regarding excessive fallout from specific sources, and essentially all of the samplings have been recorded as excessive fallout either periodically or regularly.

Fallout sampling was conducted in Coquille through the period of 1952 to 1955, in Coos Bay between 1952 and 1959, in North Bend from the end of 1952 through 1961, in Empire from 1954 through 1959, in Myrtle Point between 1954 and 1958, and continuously in Eastside since 1954. Eastside has the distinction of having one of the heaviest fallout rates measured in the state. Odor and corrosion studies have also been conducted in the Eastside area.

In April of 1969, the first of 22 state-wide monitoring network stations was established in Coos Bay. This station measures the concentrations of suspended particulate matter, the particle fallout rate, and the presence of pollutants in air which can cause sulfation reactions. This station will not only aid in evaluating the air quality of the Coos Bay area, but will also, in conjunction with the remainder of the stations in the network, assist in evaluating the air quality in Oregon.

SOURCES OF AIR POLLUTION

GENERAL: Air Pollution is unique in that climate, terrain, industry, population, and manner of living all combine to determine the nature and extent of the air pollution problem. In order to obtain a better understanding of how the various sources of air pollution emissions in Coos County contribute to the overall problem, an emission inventory has been conducted. Such an inventory is a very useful input to an air pollution control program, but is only one of several inputs that must be properly evaluated in order to obtain a correct perspective of the actual or potential effect of the various air pollution sources. The essential emission data obtained from the inventory is presented in Table I, which lists the percentage contribution of major source types (mobile sources, combustion of fuels, refuse, and the timber products industry) to the total emissions of three basic contaminant classes (particulates, oxides of nitrogen, and organic gases).

It is the evaluation of the staff that particulate fallout, visibility reduction, and odors are the present air pollution problems in Coos County. Carbon monoxide, sulfur oxides, and oxides of nitrogen are not considered to be significant as air contaminants in Coos County. While it is true that oxides of nitrogen affect visibility, the concentrations required to do so are much higher than those expected in Coos County or in the Coos Bay area. Organic gases, which include aldehydes and hydrocarbons, appear to be significant in Coos County only to the extent that malodorous compounds are included in this class. Such compounds would include those responsible for diesel exhaust odor or the acrolein compound characteristic of the hardboard tempering process.

Working under the premise that (1) the odor problems in the Coos region can best be approached on an individual-source basis, and (2) that nitrogen oxides and general hydrocarbon concentrations are too low to have an observable effect, it is justifiable to limit discussion of airshed pollution sources to emissions of particulate matter. The particulate emission sources are depicted graphically in Figure I.

On this basis, the emission inventory confirms the hypothesis that the primary source of the air pollution problem in Coos County is the forest products industry.

The total annual particulate emission determined by this inventory is significant by comparison with other areas of the state. Using data obtained from the Columbia-Willamette Air Pollution Authority, the particulate emissions for the three county region (Clackamas, Columbia, Multnomah) are equivalent to approximately 8000 lb/sq. mile/year. The corresponding figure for Coos County is 5500 lb/sq. mile/year. The emission density for heavily populated Multnomah County is 26,000 lbs/sq. mile/year, while that for an assumed 100 square mile Coos Bay

TABLE I

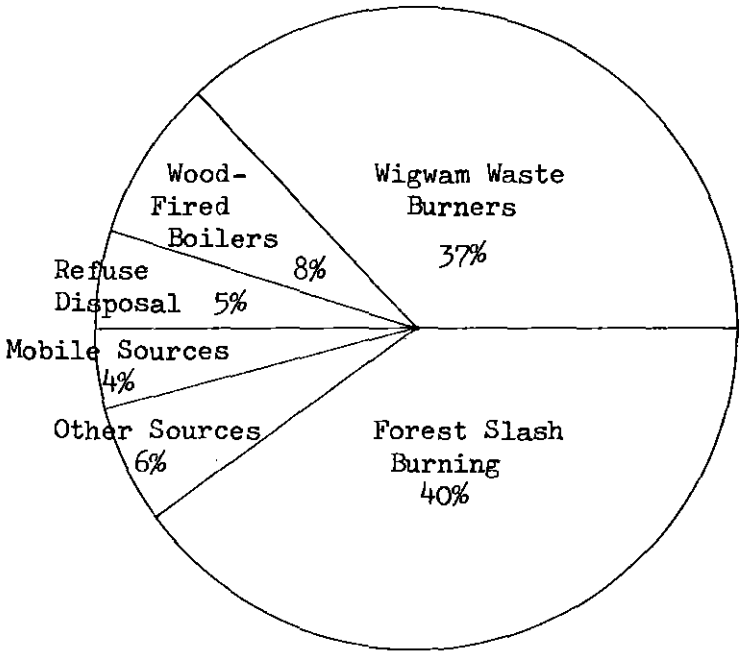
EMISSION OF
PARTICULATES, NITROGEN OXIDES, AND ORGANIC GASES
For
COOS COUNTY and COOS BAY AREA

SOURCE CATEGORY	EMISSIONS AS % OF ANNUAL TOTAL FOR POLLUTANT CLASS					
	COOS COUNTY			BAY AREA		
	PARTIC-ULATES	NITROGEN OXIDES	ORGANIC GASES	PARTIC-ULATES	NITROGEN OXIDES	ORGANIC GASES
Mobile Sources						
Motor Vehicles	3.3	34	50.0	5.0	30	54
Ships	0.8	1	0.3	2.5		0.6
Aircraft			0.2			0.4
Sub-Total	4.1	35	50.5	7.5	30	55
Combustion of Fuels						
Oil	2.1	7.0	0.2	3.2	6.0	0.3
Wood (non-industrial)	1.2	0.1	0.1	1.8	0.1	0.1
Propane		0.4			0.4	
Sub-Total	3.3	7.5	0.3	5.0	6.5	0.4
Refuse Disposal (general)	5.4	3.7	2.3	7.5	3.0	2.4
Timber Products Industry						
Wigwam Burners	37	13	15	57	13	17
Wood-fired boilers	8	36	5	18	49	8
Veneer Dryers	2		15	3		17
Forest Slash burning	40	4	12			
Sub-Total	87	53	47	78	62	42
Miscellaneous			1	0.7		0.9
TOTAL AMOUNT LB/YEAR	9,000,000	9,000,000	26,000,000	2,800,000	4,700,000	11,000,000

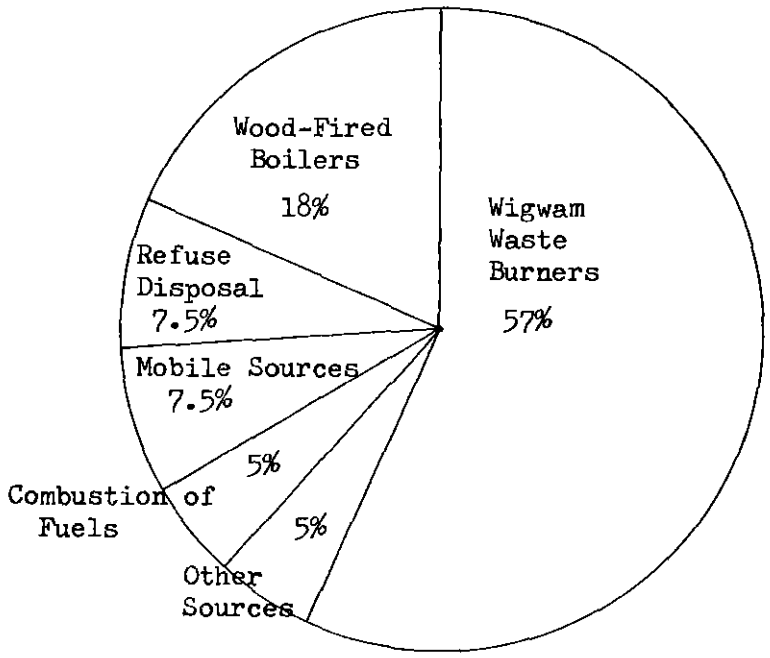
FIGURE I

PARTICULATE EMISSION SOURCES

IN COOS COUNTY AND COOS BAY AREA



A. Coos County: Total Emissions 9,000,000 lbs/yr.



B. Coos Bay Area: Total Emissions 2,800,000 lbs/yr.

area is 28,000 lb/sq. mile/year. On this basis, the rate of particulate emissions in the Coos Bay area is quite comparable with the large Portland metropolitan area. However, due to the far smaller number of emitting sources in the Coos Bay area as compared to the Portland area, the localized effects of these emissions can be significantly greater than that occurring in the Portland area.

The following is a brief discussion of some of the sources of air pollution in Coos County.

MOBILE SOURCES: Coos County is unique in that ships account for 20% of the particulate matter from mobile sources. In the Coos Bay area, ships account for one-third of the particulate matter from mobile sources, with automobiles and trucks accounting for the remaining two-thirds. However, since mobile sources contribute less than 5% of the amount of particulate contributed by the timber products industry in Coos County, and less than 10% in the Coos Bay area, it would appear that mobile sources have little effect on the air quality of the Coos County airshed. The discharge of smoke from ships may cause aesthetic, nuisance and soiling problems and as such should be restricted.

The staff has concluded that the emissions of carbon monoxide, hydrocarbons, and nitrogen oxides from mobile sources have no apparent effect on the Coos County airshed. From a staff study on automotive emissions it has been conservatively projected that by 1980 emissions from automotive sources will have been reduced from current values to approximately three-fourths of the carbon monoxide and one-half of the hydrocarbons.

Coos County is also unique in that automotive sources are not the largest source of carbon monoxide. The emission inventory shows the timber products industry to be the largest source of carbon monoxide in Coos County.

REFUSE DISPOSAL: The burning of refuse, other than in wigwam burners, is not a major source of particulate matter in relation to industrial sources, but becomes significant in some local situations. These include the use of burning barrels, poorly operated commercial incinerators creating smoke or fly ash nuisance situations, and the burning of automobile bodies. A county ordinance currently restricts open burning sites to remote, authorized locations and prohibits the open burning of collected refuse after January 1, 1970.

The staff has observed poorly operating incinerators in several Coos County cities, and local health authorities have reported receipt of complaints regarding the burning of automobile bodies. A Coos County refuse disposal report was made in 1962 by the State Board of Health and the Coos County Department of Health, which included recommendations that open burning be discontinued. The staff has visited refuse disposal areas where open burning has ceased.

COMBUSTION OF FUELS: In Coos County the combustion of fuels includes the combustion of oil, propane gas, and wood by private, commercial and industrial users. There appears to be little potential here for an air pollution problem to arise, except perhaps for isolated incidents. In fact, the use of wood for heating, which could potentially present more of a problem than the other two fuels, is declining dramatically.

MISCELLANEOUS SOURCES: Several miscellaneous sources of smoke, dust, and objectionable odors have been encountered in Coos County. These include smoke from building demolition, dust from site clearance and soil tilling, air-borne pollens, odors from septic tank overflows and certain industrial operations, and dust from hot mix asphalt plant operations. The staff has surveyed the asphalt plant operations in Coos County and does not foresee a need for any immediate enforcement action. There does not appear to be an air quality problem related to pulp mill processes in Coos County.

TIMBER PRODUCTS INDUSTRY: The timber products industry is the predominant man-made source of air pollution in Coos County. A full 75% of the particulate matter emitted in the Coos Bay area and 85% of the particulate matter emitted in Coos County can be attributed to the timber products industry. This industry also makes Coos County unique in that its processes emit more carbon monoxide, approximately 57% of the total, than do automobiles in the county. On a nationwide basis, it is reported that automobiles account for 95% of the carbon monoxide emitted. As previously stated, the staff has concluded that carbon monoxide is not a contaminant of significance in Coos County.

For the county as a whole, the largest source of particulates is forest slash burning. According to the local Health Department personnel, however, there is no noticeable effect on populated areas from this highly seasonal activity. This is presumably due to the remoteness of the burning sites, and to climatic conditions prevalent during the slash burning season. Apparently it is common fire control practice in the coastal region to do slash burning only in the presence of westerly winds which would generally prevent smoke or fallout from being carried over the population centers on the coast. If the emissions from slash burning are discounted, the relative importance of each source in Coos County becomes essentially identical to that of the Coos Bay area.

It should be noted here that the emission inventory does not include one possibly significant industrial source of particulate, and that is the emission of sanderdust and other fine wood particles from cyclones in wood processing industries. Economical methods for estimating these emissions are not well established at this time; it is also difficult to establish what portion of cyclone emissions become genuine aerosols and are carried significant distances from their source of emission. In any event, their inclusion in the emission inventory would not alter the basic conclusion that the major source of significant air pollution emissions in Coos County is the forest products industry.

Since the wigwam burner and the wood-fired boiler can be identified as specific air pollution sources and since the magnitude of the problem caused by them can depend upon their location, operation, and general condition, these sources can be discussed on both a total and a specific basis. On a total basis, the wigwam burners in the Coos Bay area contribute more than one-half of the total particulate loading in the Coos Bay airshed. This is also true on a total county basis when the effect of seasonal slash burning is omitted.

On a specific basis, the following is a briefing on the air pollution aspects of the individual timber products companies in Coos County.

Arago Cedar Products, Myrtle Point

Arago Cedar Products is reported to operate one wigwam burner in Myrtle Point. The staff has not surveyed or evaluated this reported source.

Al Peirce Lumber Company, Myrtle Point and Coos Bay

The only staff record of air pollution complaints regarding Al Peirce Lumber Company are from the operation of their wigwam waste burner in Myrtle Point. These complaints were in 1956 and 1957, and the staff has no later record of complaints.

Recently the staff surveyed their wigwam burner in the Coos Bay area and concluded that the problem of fallout from this operation is minor. However, since the smoke and fine particulate matter emitted from the burner does contribute significantly to the airshed of the Coos Bay area, the staff has requested that the operation of the burner be improved or its use eliminated. No time schedules have yet been established.

Acme Wood Products, Myrtle Point

Acme Wood Products is an arrow manufacturing firm located in Myrtle Point. They manufacture arrows from Port Orford cedar and burn the excess material including sawdust, trimmings, etc., in a wigwam burner approximately 30 feet high.

The staff has been advised by local health authorities that they have received complaints regarding the smoke emissions from this operation. The staff has no other record of complaints against this company. A survey and evaluation of the air pollution aspects of this company has not been made.

Cape Arago Lumber Company, Coos Bay (Empire)

A particulate fallout study was initiated in Empire in March 1954 and conducted through 1959 to quantitize the fallout resulting from the Cape Arago Lumber Company boiler stacks and wigwam burners. Cape Arago Lumber Company was cited for a public hearing by the Air Pollution Authority on June 22, 1956. By the end of October 1957, both boiler stacks at the plant were equipped with cinder collections and certain modifications had been made to the wigwam waste burner.

The fallout data does not indicate that a significant decrease in the fallout rate occurred as a result of this work. The last fallout sample recorded in Empire was from June 23, 1956 to September 27, 1959, and the value reported was 160 tons/mi^2/month.

In 1965, the staff surveyed the wigwam burner and recommended several changes to improve combustion. The staff later received a letter from the company advising of work progress on the burner.

Recently the staff again surveyed the operation at Cape Arago Lumber Company and concluded that while the emissions from the boiler stacks may be satisfactory, the emission of smoke and fallout from operation of the wigwam burner is not satisfactory. In view of the proximity of homes and business buildings to the burner and because of the extensive rebuilding which would be required to make the burner perform at a minimum satisfactory level, the staff recommends that operation of the burner cease. The staff has been advised by plant management that alternative methods of disposal are being considered. The staff has requested that satisfactory plans and time schedules for the improvement or elimination of this burner be submitted by the end of June, 1969.

Collier Lumber Company, Myrtle Point

Collier Lumber Company operates one wigwam burner outside of Myrtle Point. This burner is located in a lightly populated area and fallout would not appear to be a major problem. Smoke discharge from the burner has been observed in sizeable quantities and could contribute significantly to visibility reduction in the Myrtle Point area.

The staff has no record of complaints regarding this operation. A plant survey and evaluation has yet to be completed.

Coos Head Timber Company, Coos Bay

A staff office memorandum dated May 26, 1964 reported that the Bunker Hill site wigwam burner and sawmill had been sold to Coos Head Timber Company, with the land being leased from Georgia Pacific Corporation. It also noted that the condition of the burner was essentially the same as described in a staff survey of June 26, 1959, in need of work. This burner already had a long history as a significant air pollution source for Eastside and the surrounding area.

Between 1959 and 1968 the staff had worked diligently with the management to obtain satisfactory operation and maintenance of the burner. The only satisfactory solution seemed to be the elimination of the burner. The staff received a letter dated October 25, 1968, from Coos Head Timber Company which stated that this burner had been completely dismantled. An application for tax relief has since been received which in part covers the cost of dismantling this burner.

Coos Head Timber Company also operates a wigwam burner at its McKenna site, quite near to the Bunker Hill site. A staff memorandum of June 11, 1964 noted that the burner, as it was then operating, probably did not contribute significant smoke to the Eastside pollution problem. However, staff memorandum of October 9, 1964 noted that both the Bunker Hill and the McKenna burners continued to produce excessive smoke and probably excessive fallout.

The staff has attempted to have this burner improved for satisfactory operation, but only limited repairs and maintenance have been carried out by the company. The present condition and operation of this burner is extremely poor, and quantities of smoke produced are evidence of the poor structural and operating condition. The shell permits excessive air leakage. The large doors are often open and this further disturbs any chance for satisfactory operation of the burner.

During a recent survey of this burner, the staff learned that the company management is considering alternative means of disposal of the residue currently being burned. It is the staff's conclusion that the only satisfactory solution for this burner is for its elimination. The staff has requested specific procedures and time schedules for the elimination or improvement to currently acceptable standards of this wigwam burner.

Douglas Fir Plywood Corporation, Coquille

Douglas Fir Plywood Corporation operates two wigwam burners in Coquille. Following a complaint in 1962 regarding fallout and sander dust emissions, the staff surveyed the operation. The staff reported from this survey that the steam plant boiler was in excellent condition and that the source of emissions was apparently the wigwam burner. It was reported that a considerable improvement in the operation of the wigwam burner should be undertaken. There is no mention of a second burner in this report.

The staff has no later record of complaints against this operation. A current survey and evaluation of this plant has yet to be made. The staff has been advised that one burner is used to burn excess and unsuitable material from the boiler plant operation, and it is also thought to be necessary in the event of equipment breakdown. The second burner may be phased out by chipping the material currently being burned and using it in a production process. The plant management has stated that it expects most of the material to be utilized, not burned, in about one year.

Elkside Lumber Company, Lakeside

Elkside Lumber Company operates one large wigwam burner near Lakeside. The staff has been advised that management is considering the purchase of a hog which may eliminate use of the burner. The staff has no record of complaints and has not yet surveyed or evaluated this operation.

Georgia Pacific - Bunker Hill Site, Coos Bay

The air pollution files on the plant at Bunker Hill date back to 1953. In 1959 the staff received a letter from Georgia Pacific which stated that they were engaged in a program which would practically eliminate use of the wigwam burner except for cleanup trash. This burner was reported to be sold to Coos Head Timber Company in 1964 and was dismantled in 1968 (See Coos Head Timber Co.).

At the December 19, 1963 meeting of the Sanitary Authority, the mayor and the city attorney of the city of Eastside outlined the lengthy period of time the fallout problem and the fiber carry-over from the hardboard process had been plaguing the city. They also reported that odors had recently become a problem and were apparently released from kiln drying of tempered hardboard panels.

The Georgia Pacific representative outlined the company's efforts at this meeting. He noted that steam plant controls had been installed during 1958-59, efforts were being made to reduce the load on the wigwam burner, a study was being made to control the fiber discharge, and that a control program for the odor problem was expected shortly.

In 1964 numerous letters of complaint were received from citizens of Eastside regarding their air pollution problem. Georgia Pacific reported that the hardboard plant odors may be controlled by water scrubbing and that appropriate control systems would be installed soon. The plywood sander dust problem had been worked on but still was not satisfactory. The hardboard fiber was scheduled to be burned in the boilers rather than the wigwam burner.

In 1967, after much effort, Georgia Pacific was able to put into operation a waste fiber incinerator so that this material no longer would be burned in the wigwam burner. This made possible its dismantling. Recently, a fume incinerator was installed to eliminate the odor problem from the hardboard tempering operation. This fume incinerator replaced a water scrubber system which had been used in an attempt to control these odors.

A recent survey of this plant by the staff indicates that the fiber incinerator and the fume incinerator are operating satisfactorily.

Georgia Pacific Corporation, Coquille

In 1964 the staff received three letters of complaint about the fallout from the Georgia Pacific operation from the city of Coquille. The staff was at that time advised by Georgia Pacific that a new chipper and storage bin had been installed so that less material would be burned in the wigwam burner. Further, a new boiler with a cinder burner was then on order. A staff survey in 1964 noted that fly ash and sawdust emissions were being discharged from the wigwam burner.

The staff has no later record of complaints regarding this plant and no recent surveys or evaluations have been made, however, one wigwam burner was phased out sometime ago and the staff has been informed that the second burner is scheduled for phase out in June 1969.

Georgia Pacific Corporation, Norway and Powers

Georgia Pacific Corporation operates one wigwam burner each at Norway and at Powers. The staff has no record of complaints regarding either of these operations and has yet to survey or evaluate them.

Leep Lumber Company, Myrtle Point

Leep Lumber Company has a wigwam burner in Myrtle Point. The plant management has advised the staff that the burner has not been in use for two or three months and that they are seeking other means of disposal. The staff has no record of complaints and has not yet surveyed or evaluated this operation.

Menasha Corporation, Norway

Menasha Corporation operates one wigwam burner in Norway. Bark is the primary fuel for the burner. The staff has been advised by the management they have considered hogging the bark and using it as hogged fuel, but this approach did not appear economical. The staff has no record of complaints and has yet to survey and evaluate this operation.

Moore Mill and Lumber Company, Bandon

Moore Mill and Lumber Company operates one wigwam burner in Bandon. The staff has no record of complaints and has yet to survey and evaluate the operation.

Perry Brothers Veneer Company, Bandon

Perry Brothers Veneer Company is reported to operate one wigwam burner in Bandon. The staff has no record of complaints and has yet to survey and evaluate this operation.

Rogge Lumber Sales, Bandon

Rogge Lumber Sales operates two wigwam burners in Bandon. The staff has no record of complaints and has yet to survey and evaluate this operation.

Weyerhaeuser Timber Company, North Bend

In 1953 an Air Pollution Authority interim report on cinder and fly ash problems in North Bend listed the major sources of cinders in North Bend as four industrial plants along the waterfront. These companies were Menasha Plywood Corporation, Irwin-Lyons Lumber Company, Mountain States Power Company, and Weyerhaeuser Timber Company. Of these plants only the Weyerhaeuser Timber Company is still operating.

In 1954 Weyerhaeuser put a cinder collection system into operation on the boilers. In January 1955 the Air Pollution Authority sent a letter to Weyerhaeuser advising that measured fallout at one station had declined to 38 tons/mi^2/month following installation of the cinder collection system. This was compared to a measured value of 1430 tons/mi^2/month for the same sampling period of the previous year.

In 1956 Weyerhaeuser supplied cost figures for this installation and operation which showed capitalized cost in 1954 for the collection system as $112,461.72, and expense costs, including maintenance and repair, for 1955 and 1956 as $41,250.

In 1958 the staff learned that the Pacific Power and Light steam generating plant (formerly the Mountain States Power Company plant) which used excess hog fuel from the Weyerhaeuser operation was to be shut down. This required Weyerhaeuser to find an alternative means of disposal for this excess fuel. Professor Popovich of Oregon State was employed as a consultant by Weyerhaeuser on this fuel disposal problem. In November 1958 the Air Pollution Authority gave tentative approval for the use of a wigwam burner at this site. Plans and specifications for the burner, which stated that the burner use would be discontinued when new uses could be found for the residues, had been reviewed by the Air Pollution Authority. A November 1958 news article quoted Mr. Karlen, the Coos Bay branch manager at that time, as saying "As soon as some other means of utilizing these left-overs is found, the operation of the burner will be discontinued at the North Bend mill." In 1968 the Company submitted Part I of a Tax Relief Application which called for elimination of the burner by January, 1969.

Currently the sources of air pollution from this Weyerhaeuser plant include the wood residue storage and transfer area, the cyclones on the plant, possibly the boiler stack, the plywood plant, and the wigwam burner. The staff has recently surveyed the plant and area and concluded that the fallout and smoke from the wigwam burner and the visibility reducing emissions from the plywood plant are current and substantial air pollution sources. The company has been requested to submit plans and schedules for the correction of their air pollution problems.

SUMMARY

The elimination of, or the proper modification and operation of wigwam waste burners would result in a significant improvement in the air quality in Coos County. It is the conclusion of the staff that the wigwam burners in the Coos Bay area could be phased out of operation in the near future if company management placed emphasis upon such elimination. The result of phasing out the operation of wigwam burners in the Coos Bay area would be to reduce the particulate loading to the airshed by more than one-half. Since the fallout from these burners affects some areas far more than others, the result may be to eliminate fallout problems in total in certain affected areas.

Other sources contribute sizeably to the air pollution problems of Coos County, and the Coos Bay area in particular, even though on a weight discharge basis they may not appear so significant. These contaminants and sources include the visibility reducing emissions from plywood and veneer plant operations, fine particulate matter discharged from cyclones common at forest product industry plants, and particulate matter from wood residue storage and conveying areas.

The effect of automotive emissions on the Coos County and Coos Bay area airshed appears to be minor. Further, a separate study by the staff projected that carbon monoxide and hydrocarbon emissions from automobiles in Coos County will be significantly lower in 10 years because of the emission control systems currently being installed on new automobiles.

Although other sources may cause localized problems of fallout, soiling, visibility reduction, or odor, the major effective contributor to the air pollution of Coos County is the forest products industry. It is also significant that many of these companies recognize this problem and are actively seeking solutions to reduce their effect upon the air quality of the area.

APPENDIX

EMISSION INVENTORY COMPILATION METHODS

A. Coos County

The emission figures appearing in the tables in this report are based on many different kinds of data of varying reliability. Typically, the computation of annual emissions of a given pollutant from a given type of source is the multiplication of some process quantity times an "emission factor" which relates emissions to the process quantity. For example, the 3.3 million pounds per year of particulate attributed to Coos County's wigwam waste burners is the product of 300,000 tons/year of wood waste burned, times an emission factor of 11 lbs./ton.

Sources of information for process quantities and emission factors are as follows:

Motor Vehicles

Process: A staff report of the Oregon State Sanitary Authority, "Emission Inventory of Automotive Sources of Air Pollution in Oregon for the Years 1966 and 1980", May 1968,[1] gives estimated daily emissions of major pollutants for Coos County. 1966 data was used.

Factors: Above report is based on vehicle miles; in addition, present report estimates aldehydes from factor given in Duprey, "Compilation of Air Pollutant Emission Factors", NAPCA 1968.[2]

Ships

Process: The Port of Coos Bay Harbormaster provided data sufficient to calculate fuel consumption; diesel 380,000 gal./yr.; Bunker C oil 760,000 lb/yr.

Factors: (San Francisco) Bay Area Air Pollution Control District, 1967 Emission Inventory.[3]

Aircraft

Process: FAA Controller at North Bend Airport provided annual aircraft activity information: Turboprop 1700 flight/yr; general aviation 17,300 flight/yr.

Factors: Nature and Control of Aircraft Engine Exhaust Emissions" U.S.DHEW. December 1968.[4]

Oil Combustion

Process: Western Oil & Gas Association provided fuel oil sales data.

Factors: Duprey

Wood Combustion

Process: Estimated wood consumption of 550 tons/yr. based primarily on data received from Empire Fuel & Transfer Co., major distributor in Coos County.

Factors: Stanford Research Institute Report on Air Pollution in Portland, Oregon;[5] carbon monoxide was assumed to be same as for wigwam burner.

Propane Gas Combustion

Process: All three distributors in the area provided sales information. Totals were 1.6 million gallons for industrial usage, 2.8 million gallons for commercial and domestic usage.

Factors: Factors given by Duprey for natural gas were converted on a weight-for-weight basis and used for propane.

Refuse Disposal

Process: The national average of 5.3 lbs/day/capita ("The National Solid Wastes Survey--an Interim Report"[6]) of solid waste generation was used as a base, and combined with information on collected wastes in Coos County as supplied by the Environmental Sanitation Division of the State Board of Health. It was assumed that 5.3 lb/day/capita of refuse was generated, and that 75% of wastes not going into landfill-type disposal sites was being burned. Total refuse burned was thus estimated at 30,000 ton/yr.

Factor : Duprey

Wigwam Waste Burners

Process: Oregon State University, Forest Research Laboratory, 1967 survey of wood waste disposal. Estimated incinerated amount was 163,000 ton/yr of oven-dry waste. This was multiplied by 1.85 to get equivalent as-used weight.

Factors: Various sources were used:

Aldehydes: 2 lb/ton, from SRI Report on Portland, 1963.

CO 130 lb/ton:) Droege and Lee, "The Use of Gas
Hydrocarbons, 11 lb/ton) Sampling and Analysis for the Evaluation of Teepee Burners, 1965"[7]

NO_x 4 lb/ton - based on P. F. Woolrich, "Methods for estimating Oxides of Nitrogen from Combustion Processes"[8]

Particulate, 11 lb/ton - R. W. Boubel, "Particulate Emissions from Sawmill Waste Burners"[9]

Wood-fired Boilers

Process: O.S.U. Survey: 318,000 oven dry tons/year.

Factor : SRI Report on Portland, 1963; NO_x factor of 5.5 lb/ton was derived from Woolrich paper referenced above.

Veneer Dryers

Process: O.S.U. Survey - total production in county, 610 million sq. ft./year, 3/8" basis.

Factor : R. T. Shigehara, "Particulate and Total Gaseous Hydrocarbon Emissions from a Gas Heated Veneer Dryers".[10]

Forest Slash Burning

Process: Slash tonnage or acreage figures obtained from State Forester, Siskiyou National Forest, Bureau of Land Management. Total estimate 210,000 ton/yr.

Factors: Slash burn ratio of 75 ton/acre for old growth Douglas fir, supplied on personal communication from State Forestry Department; emission factors are from Duprey, for open burning of "landscape material".

Asphalt Plants

Process: Surveys of three plants in Coos County. Total production 70,000 tons/yr.

Factor : 0.4 lb/ton of particulate, based on experience in Portland area stack samples.

Pulping Processes

Emissions were directly estimated by staff members of two pulp mills.

Dry Cleaning

Process: Population of Coos County, 55,300.

Factor : Duprey, per capita solvent emissions

B. Coos Bay Area

1. Emissions for the following source categories were estimated from Coos County results by population ratios (Bay Area = 45% of county population)

   Motor vehicles

   Oil, wood and Propane combustion

   Refuse disposal

2. Industrial emissions were estimated by surveying each individual plant.

3. Ships and aircraft emissions were considered to be the same as for County.

REFERENCES - Emission Inventory

1. "Emission Inventory of Automotive Sources of Air Pollution in Oregon for the Years 1966 and 1980", Oregon State Sanitary Authority, May 1968.

2. Duprey, R. L. "Compilation of Air Pollutant Emission Factors", U. S. Department of Health, Education, and Welfare, 1968 (Public Health Service Publication No. 999-AP-42).

3. "Emission Inventory - Revised 1967", Bay Area Air Pollution Control District, January 1967.

4. "Nature and Control of Aircraft Engine Exhaust", U. S. Department of Health, Education and Welfare, December, 1968.

5. Lunde, K. E. "Investigation of Air Pollution in the Vicinity of Portland, Oregon" Stanford Research Institute, 1956.

6. "1968 National Survey of Community Solid Waste Practices - An Interim Report, U. S. DHEW, 1968.

7. Droege, Henry and Lee, George, "The Use of Gas Sampling and Analysis For the Evaluation of Teepee Burners", paper presented at the Seventh Conference on Methods in Air Pollution Studies, Los Angeles, California, January, 1965.

8. Woolrich, P. F. "Methods for Estimating Oxides of Nitrogen Emissions From Combustion Processes," Industrial Hygiene Journal, December 1961, pp. 481-484.

9. Boubel, R. W. "Particulate Emissions from Sawmill Waste Burners", APCA Paper 68-164, 61st Annual Meeting of Air Pollution Control Association, June, 1968.

10. Shigehara, R. T. "Particulate and Total Gaseous Hydrocarbon Emissions From a Gas Heated Veneer Dryer", Oregon State University thesis, June, 1969.

TABLE A

SUMMARY OF AIR POLLUTANT EMISSIONS

COOS COUNTY, 1968

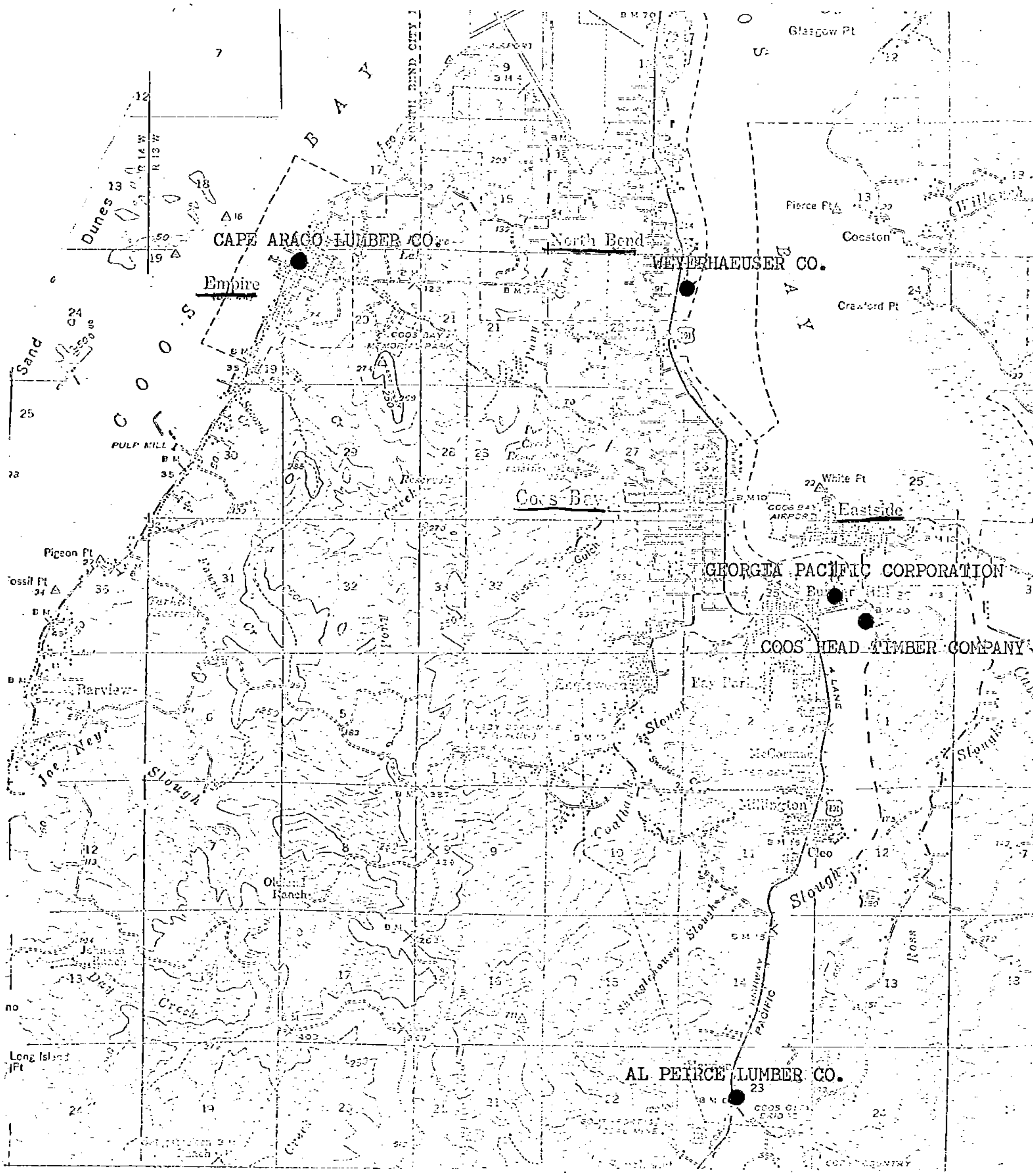
SOURCE CATEGORY	EMISSIONS, MILLIONS OF POUNDS ANNUALLY						
	ORGANIC GASES			PARTIC-ULATE	INORGANIC GASES		
	Alde-hydes	Hydro-carbon	Other organics		Nitrogen oxides	Sulfur oxides	Carbon monoxide
Mobile Sources							
Motor Vehicles	0.10	13.0		0.30	3.1	0.23	48.6
Ships	0.02	0.05		0.07	0.05	0.04	0.03
Aircraft		0.04					0.3
Sub-Total	0.12	13.1		0.37	3.2	0.27	48.9
Combustion of Fuels							
Oil	0.030	0.036		0.19	0.63	1.41	0.03
Wood (non-industrial)	0.011	0.008		0.11	0.011	0.011	0.71
Propane				0.005	0.044		
Sub-Total	0.043	0.044		0.30	0.68	1.42	0.74
Refuse disposal, general	0.003	0.15	0.46	0.49	0.33		0.27
Timber Products Industry							
Wigwam Waste Burners	0.60	3.3		3.3	1.2		39.0
Wood-fired boilers	1.2	unk.		0.7	3.2		0.3
Veneer dryers		3.9		0.2			
Forest Slash Burning		0.4	2.7	3.6	0.4		13.0
Sub-Total	1.8	7.6	2.7	7.8	4.8		66.0
Miscellaneous							
Asphalt plants				0.03			
Pulping processes						.15	
Dry Cleaning		0.2					
Sub-Total		0.2		0.03		.15	
TOTAL	1.9	21.1	3.1	9.0	9.0	1.84	116

TABLE B

SUMMARY OF AIR POLLUTANT EMISSIONS

COOS BAY AREA, 1968

SOURCE CATEGORY	EMISSIONS, MILLIONS OF POUNDS ANNUALLY						
	ORGANIC GASES			PARTIC-ULATE	INORGANIC GASES		
	Alde-hydes	Hydro-carbon	Other organics		Nitrogen oxides	Sulfur oxides	Carbon monoxide
Mobile Sources							
Motor Vehicles	.05	5.85		.14	1.4	.10	21.9
Ships	.02	.05		.07	.05	.04	
Aircraft		.04					.3
Sub-Total	.07	5.9		.21	1.4	.14	22.2
Combustion of Fuels							
Oil	.014	.016		.09	.28	.64	.01
Wood (non-industrial)	.005	.004		.05	.005	.005	0.32
Propane					.02		
Sub-Total	.020	.020		.14	.30	.64	.33
Refuse, disposal, general	.001	.065	.20	.21	.14		0.12
Timber Products Industry							
Wigwam Waste Burners	.30	1.6		1.6	.59		19
Wood-fired Boilers	.83			0.5	2.3		.2
Veneer Dryers		1.8		0.1			
Sub-Total	1.13	3.4		2.2	2.9		19
Miscellaneous							
Asphalt Plants				.02			
Dry Cleaning		.10					
Pulp Processes						.15	
Sub-Total		.1		.02		.15	
TOTAL	1.22	9.5	.2	2.8	4.7	.93	42


CAPE ARAGO LUMBER CO.
Empire
North Bend
WEYERHAEUSER CO.
Coos Bay
Eastside
GEORGIA PACIFIC CORPORATION
COOS HEAD TIMBER COMPANY
AL PEIRCE LUMBER CO.
COOS BAY
Glasgow Pt
Pierce Pt
Coaston
Crawford Pt
White Pt
Pigeon Pt
Fossil Pt
PULP MILL
Barview
Joe Ney Slough
Millington
Cleo
Day Creek
Long Island Pt
Dunes
Sand
COOS BAY MEMORIAL PARK
COOS BAY AIRPORT
Coalbank Slough
Shinglehouse Slough
Isthmus Slough
HIGHWAY PACIFIC
Ross
NORTH BEND CITY LIMIT
R 14 W
R 13 W

TO : MEMBERS OF 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 14, 1969 (for Sanitary Authority Meeting May 23, 1969)

SUBJECT: COOS HEAD TIMBER COMPANY (McKenna Plant), COOS BAY, OREGON

BACKGROUND:

The McKenna plant of Coos Head Timber Company is located alongside of Olive Barber Road and south of Coos River Highway. The plant is almost due south of Eastside and to the southeast of Coos Bay. It is located approximately 1/2 mile from the Eastside city limits.

The major source of air pollution from the McKenna plant is the wigwam waste burner.

It should be noted that Coos Head Timber Company did operate a wigwam burner in the Georgia Pacific complex at Bunker Hill, just north of the McKenna plant. This burner, which had a long history of air pollution complaints, was dismantled by Coos Head Timber Company in October, 1968.

The staff has worked diligently with the management of Coos Head Timber Company since 1964 to obtain satisfactory operation and maintenance of the McKenna plant wigwam burner. A summary of staff records concerning air pollution generated by the burner is attached. The company has made only limited modifications and repairs to this burner over the years, but has apparently substantially reduced the amount of residue being burned.

It would appear though, that these efforts have had little effect on the quantity and density of smoke discharged from the burner. A staff memorandum of June 11, 1964, reports that copious quantities of low temperature smoke were being discharged from the burner, and recent staff observations indicate that this situation is unchanged. A staff observation on May 8, 1969, recorded smoke discharge from this burner in violation of the visible emission standard.

A recent survey of this burner found it to be in need of major repair and modification, and in need of improved operation procedures. The present condition and operation of the burner is extremely poor.

The staff was advised by company management during this recent survey that alternative means of disposal are being considered. This could result in the burner no longer being required to burn production process wood wastes.

SUMMARY

It is the conclusion of the staff that the McKenna plant wigwam burner is a significant factor in the pollution of the Coos Bay airshed. The burner also contributes fallout and smoke to the local area.

The elimination of the waste burner, or at a minumum the major physical modification and improvement in operation, will be necessary to meet acceptable air quality standards and to result in an improvement in the air quality of the area. The company has been asked to be present to give a status report on their program.

RECOMMENDATION

The staff recommends that Coos Head Timber Co. be directed to submit a schedule for the elimination of this burner.

Mar. 1, 1965 — Staff letter to Coos Head relating fallout rates measured at the Eastside station and stating that the staff believed that their burners contribute to these fallout values as well as to the smoky conditions which exist at times in the area.

Mar. 8, 1965 — Staff letter to Coos Head noting the major points for control of emissions from wigwam burners.

Nov.23,24 '65 — Short term fallout sampling. A fallout rate of 3,507 tons/mi^2/month obtained at a site 200 yards from the burner and on Coos Head property.

Dec. 7, 1965 — Staff letter to Coos Head Timber Company noting that the prime sources of particulate fallout in the Eastside area were found to be the Bunker Hill and the McKenna plant burners. The McKenna plant burner is reported to contribute burned and partially burned wood particles to the fallout.

Dec. 20, 1965 — Letter from Coos Head stating that Coast Metal Works of North Bend has been engaged to repair and close all openings around the base of the burner and in the burner shell. All the overfire air ports will be controlled and a thermal recording unit has been ordered and should be operating in January. The letter also states that it is apparent that the volume of waste to the burner will be greatly reduced in 1966, and that a study on the burner by Medford Steel and Blowpipe Co. is being evaluated.

Mar. 30, 1966 — Letter from Coos Head reporting that Medford Steel and Blowpipe Co. had worked on the burner the previous week. Tangential overfire air ports were installed, the area under the sliding doors enclosed, and a temperature recording unit installed.

Mar. 11, 1968 — Staff letter to Coos Head requesting a brief report on the status of their two burners and enclosing a copy of the staff wigwam burner manual.

Mar. 22, 1968 — Letter from Coos Head noting their continuing efforts toward complete utilization of the sawmill and plywood waste. A hammer hog was expected to be installed that week which will allow utilization of 15-20 tons per day of former waste material. Also working to utilize more of the sawdust. The letter notes that they feel that fallout from the McKenna burner over any area of homes, such as Eastside is small, but that they will continue their efforts to utilize the small remaining volume of waste being burned at this operation.

July 16, 1968 Staff letter to Mr. Carl C. Allen, a complainant, telling of efforts for the design and procurement of a sanderdust storage facility at the McKenna plant. The letter states that if these plans are successful, then this burner should be phased out approximately Sept. 15, 1968, along with the Bunker Hill burner.

Apr. 29, 1969 Staff letter to Coos Head reporting plant survey and discussions with them on April 22, 1969. The letter states that this burner is considered to be a current source of air pollution in the Coos Bay area; and requests plans for the improvement or elimination of this burner as soon as possible. The letter also notes that this burner is to be discussed at the Oregon State Sanitary Authority meeting in Coos Bay, May 23rd, and that a company representative should be present to answer any questions the Authority may have.

May 13, 1969 Staff memo reports that emissions from burner observed in violation of visible emission standard on May 8, 1969.

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 14, 1969 (for Sanitary Authority Meeting May 23, 1969)

SUBJECT: WEYERHAEUSER TIMBER COMPANY, NORTH BEND

BACKGROUND

The Weyerhaeuser Timber Company plant in North Bend is located on the waterfront in the southeast section of the city. The plant complex includes a sawmill, particle board plant and a plywood plant. There is an open wood residue storage area on the north section of the complex.

Currently the sources of air pollution from this plant include the wood residue storage and transfer areas, the cyclones on the plant, possibly the boiler stack, the plywood plant, and the wigwam burner. The staff has recently surveyed the plant and area and concluded that the fallout and smoke from the wigwam burner and the visibility reducing emissions from the plywood plant are a current and substantial air pollution source.

The staff records regarding this wigwam waste burner date back to 1958 when it was first learned that Weyerhaeuser Company was considering building a wigwam burner at this plant. The need for this burner arose when the Pacific Power and Light steam generating plant (formerly the Mountain States Power Company plant), which used excess hog fuel from the Weyerhaeuser operation, was to be shut down. Professor Popovich of Oregon State College was employed as a consultant by Weyerhaeuser Company on this disposal problem. In November 1958, the Air Pollution Authority gave tentative approval for the use of a wigwam burner at this site. Plans and specifications for the burner, and a statement that the burner use would be discontinued when new uses could be found for the residues, were reviewed by the Air Pollution Authority. The burner is 80 feet high and was designed to burn approximately 500,000 lb/day of residues. Currently the company estimates that less than 20,000 lb/day of residues are being burned.

In July 1959, the staff informed the Company that excessive fallout had been measured during sampling periods in 1959, and that it was believed that the material originated from the steam plant stack or the wigwam waste burner. In September, 1963, the company management informed the staff that continued operation of the wigwam waste burner may be completely eliminated. In February 1968, the company submitted Part I of a Tax Relief Application which called for elimination of the burner by January 1969.

SUMMARY

It is the conclusion of the staff that fallout and smoke from the wigwam burner and visibility reducing emissions from the plywood plant are current and substantial air pollution sources. The staff further concludes that the use of the burner could be eliminated in the very near future, but that an active study and development program may be necessary to reduce the emissions from the plywood plant to an acceptable level.

RECOMMENDATIONS

The staff recommends that Weyerhaeuser Company be directed to eliminate the wigwam burner, and to submit a program to reduce the emissions from the plywood plant to an acceptable level.

News Release

Weyerhaeuser
Don H. Dils
P. O. Box 389
North Bend, Oregon

May 13, 1969

Weyerhaeuser Company today announced environmental protection plans for their manufacturing facilities located in North Bend. According to Charles E. Goll, wood products manager, and Oscar Weed, area manager, the plans call for reducing smoke and noise emissions from the company's Coos Bay Area operations.

The largest project in the $225,000 environmental protection program will be the shutdown of the wigwam burner located between the sawmill and plywood plant. Ceasing operation of the burner will take longer than any of the other projects, however, the company stated, but will be completed by the end of 1969.

The first item scheduled is an inlet silencer to be installed on a blower in the chip screen room by July 15. Adding insulation to chip pipes and blowers will also reduce the nose level of this equipment, the company said.

Weyerhaeuser employs 1,800 people at the Coos Bay Area. Their operations include the 210,000 acre Millicoma Tree Farm, a sawmill, plywood plant, particle board plant, planing mill and export shipping facility.

The company commenced operation of the plant located on the water-front in North Bend in 1951. Since that time, they have spent $1,250,000 in environmental protection equipment according to Goll and Weed. Projects included the installation of precipitators in the exhaust system of the smoke stack, and a revision of the air flow in the burner.

The company stated that studies are also underway at the present time to reduce the amount of fine particles that are blowing from the export chip pile.

# # #

Weyerhaeuser Company

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

May 19, 1969

Mr. Ron Householder
Assoc. Engineer, Air Quality Control
Oregon State Sanitary Authority
1400 Southwest 5th Avenue
Portland, Oregon 97201

Dear Mr. Householder:

This letter will answer your letter written April 30, 1969. You asked specific questions about special pieces of equipment you felt might be contributing to an air pollution problem in the Coos Bay Area. This letter will give you our schedule for eliminating some of these problems.

We applied for tax relief, Form T-23, on February 26, 1968, and indicated at that time that an attempt would be made to cease operation of the burner by January, 1969. There were two reasons this deadline could not be met. 1) There were two other projects underway at the plantsite that were closely interrelated to the burner shutdown. These were not completed in time to meet the deadline. 2) We just recently received approval from our corporate office for the funds necessary to shut down the wigwam burner. We intend to cease operation of the burner as quickly as possible. Our plans are to complete this project by December 15, 1969.

I advised you that our corporate engineering department in Tacoma was studying ways of controlling the smoke from our plywood and veneer dryers. These studies are still underway and we have no immediate progress to report to you on this. You have our assurance, however, that we will keep you informed about our intentions for the control of these emissions.

Another area of prime concern to us at the present time is the fines that blow from the export chip pile, particularly during a northerly wind. We are researching this at the present time with the intention of reducing this problem before this fall.

We appreciate the interest of the Oregon State Sanitary Authority in maintaining a high standard for the Coos Bay air shed. We hope you understand that we are also concerned about this, and hope to do everything we can to help maintain air quality in this area. I plan to attend the Oregon State Sanitary Authority meeting May 23rd in Coos Bay, to see what other air quality concerns the community has.

Yours very truly,

WEYERHAEUSER COMPANY
Coos Bay Area

Charles E. Goll
Wood Products Manager

CEG:mfc
CC: Kenneth Spies

TO : MEMBERS OF 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 14, 1969 for May 23 Authority Meeting

SUBJECT : STATUS REPORT, MT. PITT LUMBER CO., CENTRAL POINT

1.0 BACKGROUND

At the August 23, 1968 meeting of the Sanitary Authority in Medford, the staff presented a report covering the history of Mt. Pitt Lumber Company as a source of air pollution (copy attached). In general, the report reflected a continuing problem and the receipt of repeated complaints regarding excessive fallout and smoke from the company's wigwam burner.

The staff considered that the quantity and type of materials delivered to the burner were inadequate for efficient combustion, and on May 13, 1968 recommended to the company that the materials be hogged and delivered to a bin for sale, or for subsequent delivery to the burner at its optimum incineration rate on a reduced number of calendar days.

At the August 23 Sanitary Authority meeting (copy of minutes attached) Mr. Edward Collins, President, Mt. Pitt Lumber Company, reported that he was hopeful that a customer could be found for the wastes. During the discussion, Mr. Collins interrupted to inform the Sanitary Authority that he had just received a message that a firm contract for purchase of the material had been sent shortly before the start of the meeting. This terminated the discussion.

2.0 RECENT ACTIVITY

Since the August 1968 Sanitary Authority meeting, the staff has contacted the company on numerous occasions regarding the company's progress in finalizing contracts for sale of the material and for the installation of the required hog, conveyors and bin.

On March 28, 1969, the staff was advised that a contract for the installation of the necessary equipment would be awarded the following week.

On May 7, 1969, Mr. Collins advised that no construction contract had been awarded, but that a contract agreement covering sale of the material was on his desk. He stated that he had not yet had time to study it.

3.0 STAFF RECOMMENDATION

The staff recommends that a public hearing be authorized as early as Sanitary Authority schedules permit at which Mt. Pitt Lumber Company be required to show cause why an order should not be entered to cease operation of its wigwam waste burner.

(3) Mt.Pitt Lumber Co. - Central Point

Mr. McKenzie presented a status report, dated August 23, 1968, for this mill. He said fallout from this mill has also been in excess of Sanitary Authority standards. Complaints have recently been received from adjacent residential areas. The quantity of fuel being delivered to the burner is, in the opinion of Mr. McKenzie, considerably less than the amount needed for efficient combustion. The Company is considering the installation of a hog to reduce the waste to a marketable consistency so that it can be used as hog fuel.

Mr. Edward Collins, representative of the Company, said he was hopeful that a customer would be found for the wastes. He explained that the operation is a re-manufacturing plant, not a sawmill, that the wastes are not uniform, that they vary greatly from day to day, and that in the past it has not been able to obtain a high enough temperature in the wigwam burner to produce efficient combustion.

In reply to a question from Mr. Meierjurgen he said that it would be very costly to install storage facilities so as to burn at a uniform rate. He said the hog had not been set up yet. Mr. Meierjurgen commented that they would need storage for either selling or efficient burning.

Mr. Waterman inquired regarding the relative cost of a multiple chamber incinerator and storage with uniform burning. No answer was given.

Chairman Mosser asked if the contract for sale of the wastes would be on a continuous and permanent basis and Mr. Collins said it would.

It was then learned from the representative of another company that a firm offer for purchase of the wastes had been sent just shortly before the start of the meeting.

(4) Boise Cascade Corporation - Central Point

Mr. McKenzie presented a staff report dated August 23, 1968, regarding this Company's mill operations at Central Point. A copy of the report has been made a part of the Authority's permanent files in this matter. No satisfactory progress toward abatement of this mill's air pollution was reported.

STAFF REPORT

TO : MEMBERS OF THE STATE SANITARY AUTHORITY Dated: August 23, 1968

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

FROM : AIR QUALITY CONTROL STAFF

SUBJECT: STATUS REPORT, MT. PITT LUMBER CO., CENTRAL POINT

1.0 BACKGROUND

Mt. Pitt Lumber Co. operates a timber products plant adjacent to the residential and commercial areas of Central Point. The subject of their refuse disposal first came to the attention of the Authority on March 30, 1955, when we were contacted by the Central Point City Recorder for advice concerning a construction permit for a 20' x 20' wood waste burner at the Mt. Pitt plant. On April 5, 1955, the Authority staff forwarded a letter to the Mt. Pitt Co. advising that the 20' x 20' wigwam type burner proposed would cause nuisance conditions to the residences in the vicinity, the closest of which would be within 50 feet of the proposed burner location. It was recommended that a multiple chamber incinerator be used in lieu of a wigwam burner. Contrary to these recommendations, a wigwam burner was installed.

On November 3, 1958, a letter was received from Karl Clinkinbeard, attorney for the Rogue River Valley Creamery in Central Point, stating that his clients operation had been repeatedly contaminated by fallout from Mr. Pitt's wigwam waste burner and requesting an inspection of the problem. Following a staff investigation on December 23, Mt. Pitt Lumber Co. was forwarded a copy of Oregon State College Engineering Experiment Station Bulletin, "Wood Waste Disposal and Utilization", and requested to operate their burner in accordance with the recommendations presented therein. Mr. Clinkinbeard was advised of this action.

On September 8, 1959, Rogue River Valley Creamery petitioned the Authority for a hearing alleging that Mt. Pitt Lumber Co. was the source of "partially burned sawdust and other lumber manufacturing waste products" deposited upon their premises. A survey of the area was then conducted during the week of September 21. Short term sampling revealed a particle fallout rate of 111 tons per square mile per month of fine cinders and light sawdust. Mt. Pitt Lumber Co. was advised of the findings and provided with a list of eight recommendations to reduce the fallout deposition. In the subsequent period, long term sampling showed a fallout rate of 35 to 66 tons per square mile per month.

On April 6, 1960, a letter was received from Karl Clinkinbeard, attorney for Rogue River Valley Creamery, stating that no satisfactory solution to the problem had yet resulted, that the Mt. Pitt Co. activity constituted a nuisance and trespass, and stating that the Mt. Pitt Co. should be enjoined and restrained from maintaining the nuisance and trespass. The subject was considered at the April 7, 1960 meeting of the Sanitary Authority, following

which Mt. Pitt Lumber Co. was advised that they must take appropriate action by May 15, or that the Authority would proceed with formal enforcement action.

Subsequent fallout data reflected a downward trend and the files contain no further correspondence from the attorneys for Rogue River Valley Creamery.

2.0 RECENT ACTIVITY

In February of 1966, the staff contacted Mt. Pitt Lumber Co. concerning compliance with the original wigwam burner regulation. The following month, it was reported that the required modifications had been completed. Fallout values in the area have continued to indicate excessive levels, however, and more recently complaints have been received from the adjacent residential areas.

In the conduct of the current concentrated program in the Medford area, the staff has been in frequent contact with Mr. Edward Collins, President, Mt. Pitt Lumber Co. Mr. Collins has been advised that smoke and fallout are in excess of regulations, and that the practice of batch loading also constitutes a violation. The staff considers that the quantity of materials delivered to the burner is considerably less than that needed for efficient combustion. It has therefore been our recommendation, confirmed by letter of May 13, 1968, that a hog which the mill has at hand be used to reduce the materials to a marketable consistency, and that the residues then be stored in a bin suitable for either truck loading or for delivery to the wigwam burner at its optimum incineration rate on a reduced number of calendar days. Mr. Collins is currently endeavoring to find a customer and is investigation purchase of a storage bin. As of August 20, it appeared that his efforts might soon meet with success.

OREGON STATE
SANITARY AUTHORITY

DIVISION OF OREGON STATE BOARD OF HEALTH

State Office Bldg. ° 1400 S.W. 5th Ave. ° Portland, Ore. ° 97201 ° Ph. 226-2161 AC 503

TOM McCALL
GOVERNOR

MEMBERS OF THE AUTHORITY
JOHN D. MOSSER
Chairman, Portland
STORRS S. WATERMAN
Portland
B. A. McPHILLIPS
McMinnville
HERMAN P. MEIERJURGEN
Beaverton
EDWARD C. HARMS, JR.
Springfield
KENNETH H. SPIES
Secretary, Portland

May 14, 1969

Mr. Edward Collins, President
Mt. Pitt Lumber Company
P. O. Box 1309
Medford, Oregon 97501

Dear Mr. Collins:

This is to advise you that the subject of Mt. Pitt Lumber Company, as a source of air pollution, has been placed on the agenda for consideration by the State Sanitary Authority at its May meeting. The meeting will convene at 10:00 A.M., May 23, in the Civic Center Library, located at 5th and Anderson Streets in Coos Bay.

We request that an authorized representative of your company be present at the meeting to report on the progress of your company's program to terminate use of its wigwam waste burner.

A copy of the staff report regarding the problem is enclosed for your reference.

Very truly yours,

Kenneth H. Spies,
Secretary and Chief Engineer

KHS:h

Memorandum to Members of Sanitary Authority

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

From: Water Pollution Control Staff

Date: May 23, 1969

Subject: Application for Certification of Pollution Control Facility for Tax Relief Purposes, No. T-70

This application was received on February 19, 1969. A summary of the contents and results of the staff review are given below.

1. Applicant:

The Dalles Cherry Growers, Inc.
P.O. Box 439
The Dalles, Oregon 97058

The applicant owns and operates a fruit marketing cooperative located at 1st and Madison Street in The Dalles, Oregon, Wasco County.

2. The facility claimed in the application consists of:

Waste Collection piping (PVC pipe with fittings)
2 waste collection sumps with lift pumps and screens
1 waste collection and mixing tank
1 chemical feed metering pump with piping

The installation was completed and placed in operation on September 30, 1968.

3. The cost of the facility as claimed in the application is $6,429.24. Invoices were submitted to document the costs.

4. Staff Review:

This facility collects the cherry brining wastes and provides pH neutralization prior to discharge to the Columbia River. These wastes previously went to the municipal treatment plant and adversely affected the disinfection process. The installation of this facility has significantly reduced the operating problems at the municipal plant.

5. Recommendation:

It is recommended that a Pollution Control Facility Certificate bearing the actual cost figure of $6,429.24 be issued to The Dalles Cherry Growers for the facility claimed in application No. T-70.

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 14, 1969 (For Sanitary Authority Meeting May 23, 1969).

SUBJECT: Application for Certification of Pollution Control Facility for Tax Relief Purposes, No. T-54.

1. Date Received: March 15, 1968

2. Applicant: K. R. Boehme, Asst. Property Tax Manager
Georgia Pacific Corporation
P. O. Box 311
Portland, Oregon 97207 Phone: 222-5561

The facility claimed in this application is located at the company's Rogue River Veneer plant, near the town of Rogue River. The plant produces green veneer and chips.

3. Facility Claimed: the partial rebuilding of the wigwam waste burner, and the installation of new overfire and underfire air systems. Installation was completed and placed in operation 8 July 1968.

4. Total Installed Cost: $14,927.24 (Public Accountant's Certification attached.)

5. Staff Review: Plant residues incinerated in the wigwam burner consist of bark, plant clean-up material, sawdust and fines from the chipping operations.

The wigwam burner as surveyed prior to its rebuilding was in danger of collapse. It had never included an underfire air system, and periodic removal of partially burned material was necessary to its continued operation. This material then smouldered in open burning piles which were the source of several complaints, as were smoke and fallout from the wigwam burner.

The rebuilding was accomplished quite hurriedly and without prior staff review. In essence, it consisted of constructing a new burner shell outside the old one for approximately 2/3 its height, at which point it attached to the old shell and supported its top, which was still intact. (The top has since required replacement, which cost is the subject of subsequent application T-72).

With its new underfire and overfire air systems, the burner has operated with little perceptible smoke except during shutdown when charged with wet plant clean-up material.

6. Conclusion: The staff feels that the principal purpose of the installation was for air pollution control, and that recent surveys indicate a considerable reduction in smoke emissions from the burner.

7. Recommendation: The staff recommends that a pollution control facility certificate reflecting a fair cost of $14,927.24 be issued for this application (T-54).

GEORGIA-PACIFIC CORPORATION

CERTIFICATE OF ACTUAL COST OF
WASTE BURNER MODIFICATION
POLLUTION CONTROL PROJECT - APPLICATION #T-54

ROGUE RIVER, OREGON

Burner modification	$ 9,780.00
Concrete and reinforcement	966.52
Steel	708.45
Other purchased goods and services	1,028.45
Company payroll	2,443.82
	$14,927.24

I hereby certify that the actual cost of the pollution control project installed in the veneer mill of Georgia-Pacific Corporation, Rogue River, Oregon, is $14,927.24, as set forth above.

R H Watson

ARTHUR ANDERSEN & CO.

MORGAN BUILDING
PORTLAND, OREGON 97205

January 23, 1969

Georgia-Pacific Corporation
Commonwealth Building
Portland, Oregon 97204

Gentlemen:

We, as independent public accountants, have examined the attached Certificate of Actual Cost of Waste Burner Modification, Pollution Control Project--Application #T-54, Rogue River, 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 certificate referred to above presents fairly the cost of $14,927.24 incurred by Georgia-Pacific Corporation in the construction of the project.

Very truly yours,

Arthur Andersen & Co

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 14, 1969 (For Sanitary Authority Meeting May 23, 1969)

SUBJECT: Application for Certification of Pollution Control Facility for Tax Relief Purposes, No. T-72.

1. Date Received: 21 February 1969

2. Applicant: K. R. Boehme, Asst. Property Tax Manager
Georgia Pacific Corporation
P. O. Box 311
Portland, Oregon 97207 Phone: 222-5561

The facility claimed in this application is located at the company's Rogue River Veneer plant, near the town of Rogue River. The plant produces green veneer and chips.

3. Facility Claimed: Replacement of the wigwam burner top. (Replacement of lower portion covered by prior application T-54). Installation was completed and placed in operation 31 December, 1968.

4. Total Installed Cost: $10,490.58 (Public Accountant's Certification attached).

5. Staff Review: The original wigwam burner was of a type of construction which does not stand up well under the elevated temperatures necessary for efficient combustion. The lower portion of the burner was rebuilt and overfire and underfire air systems installed and placed in operation 8 July 1968 (installation covered by application T-54). Subsequently, it was found necessary to replace the burner top; hence a separate application covering this work.

The combined effect of both contracts has been to improve combustion such as to result in a very marked improvement in smoke emissions from the burner. A secondary advantage has been the apparent elimination of smouldering open fires of excess, partially burned material on the company property which was periodically removed from the burner due to its incomplete combustion.

6. Conclusion: The staff feels that the principal purpose of the installation was for air pollution control, and that the observed result has been a considerable reduction in smoke emission from the burner.

7. Recommendation: The staff recommends that a pollution control facility certificate reflecting a fair cost of $10,490.58 be issued for this application (T-72).

GEORGIA-PACIFIC CORPORATION

CERTIFICATE OF ACTUAL COST OF
WASTE BURNER TOP AND DOME
POLLUTION CONTROL PROJECT

ROGUE RIVER, OREGON

Fabrication and installation of top and dome	$ 9,800.00
Welding equipment rental	75.00
Company labor	615.58
	$10,490.58

I hereby certify that the actual cost of the pollution control project installed in the veneer mill of Georgia-Pacific Corporation, Rogue River, Oregon, is $10,490.58, as set forth above.

R H Walton

ARTHUR ANDERSEN & CO.

MORGAN BUILDING
PORTLAND, OREGON 97205
January 23, 1969

Georgia-Pacific Corporation
Commonwealth Building
Portland, Oregon 97204

Gentlemen:

We, as independent public accountants, have examined the attached Certificate of Actual Cost of Waste Burner Top and Dome, Pollution Control Project, Rogue River, 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 certificate referred to above presents fairly the cost of $10,490.58 incurred by Georgia-Pacific Corporation in the construction of the project.

Very truly yours,

Arthur Andersen & Co.

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 15, 1969 (For Sanitary Authority Meeting May 23, 1969)

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY FOR TAX RELIEF PURPOSES, NO. T-65.

This application was initially received on January 14, 1969 with amendments in the form of additional information being submitted on April 28, 1969 and May 12, 1969.

1. Applicant: Willamette Industries, Inc.
Albany Division (Duraflake)
Old Pacific Highway
P. O. Box 928
Albany, Oregon 97321

The applicant utilizes residue wood fibers from the lumber and plywood industries to produce particle board. The raw material consists of waste shavings, sawdust, and plywood trim. Atmospheric emissions from Duraflake consist primarily of wood dust from the board sanding operations and feed material drying.

2. The facility claimed in this application consists of a dust tight combination belt and screw conveying system and a high pressure (low air volume) pneumatic conveyor for transporting sanderdust. Installation was completed and operation commenced at the Albany Division site on February 8, 1967.

3. The total installed cost of this facility is $21,654.93. An accountant's certification of this figure is attached.

4. Staff Review:

The essence of the claimed facility is that it conveys sanderdust from a central collection area to the sanderdust storage bin in a more direct route than previously used equipment. By doing this, Duraflake eliminated the use of 3 cyclones which were emitting an estimated 100 lb/hr of sanderdust. The company claims that the new facility results in an effective reduction of 90 to 95% of the previous 100 lb/hr emission.

The company also claims that the installation of the subject facility has not resulted in any change in the utilization of sanderdust since it was already being sold or used for boiler fuel.

The staff concludes that the company claims are valid and the facility was installed for the principal purpose of reducing atmospheric emissions.

5. Staff Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the actual cost figure of $21,654.93 be issued for the facility claimed in Application T-65.

10, 49856

EXHIBIT E

PEAT, MARWICK, MITCHELL & CO.
CERTIFIED PUBLIC ACCOUNTANTS
1010 STANDARD PLAZA
PORTLAND, OREGON 97204

January 10, 1969

Mr. A. R. Morgans, Financial Vice President
Willamette Industries, Inc.
1002 Executive Building
Portland, Oregon 97204

Dear Mr. Morgans:

In connection with your application to the Oregon State Sanitary Authority for certification of pollution control facilities for tax relief purposes, we have examined the costs for the high pressure blower system (as detailed in the respective Exhibit C of the application). In making our examination, we have relied upon such detail as being complete itemization of labor and materials devoted to the construction of the facility described. Our examination consisted of a detailed inspection of vendors' invoices and other documentation of disbursement. We have also traced the costs shown into the plant and equipment accounts of the Company.

In our opinion, the costs for the high pressure blower system as detailed in Exhibit C of the application, amounting to $21,654.93, fairly presents the actual costs incurred by Willamette Industries, Inc., in the construction of the facility.

Very truly yours,

PEAT, MARWICK, MITCHELL & CO.

R. M. Alexander

R. M. Alexander, Partner

RMA:SS

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 15, 1969 (For Sanitary Authority Meeting May 23, 1969)

SUBJECT: APPLICATION FOR CERTIFICATION OF POLLUTION CONTROL FACILITY FOR TAX RELIEF PURPOSES, NO. T-65.

This application was initially received on January 14, 1969 with amendments in the form of additional information being submitted on April 28, 1969 and May 12, 1969.

1. Applicant: Willamette Industries, Inc.
Albany Division (Duraflake)
Old Pacific Highway
P. O. Box 928
Albany, Oregon 97321

The applicant utilizes residue wood fibers from the lumber and plywood industries to produce particle board. The raw material consists of waste shavings, sawdust, and plywood trim. Atmospheric emissions from Duraflake consist primarily of wood dust from the board sanding operations and feed material drying.

2. The facility claimed in this application consists of a dust tight combination belt and screw conveying system and a high pressure (low air volume) pneumatic conveyor for transporting sanderdust. Installation was completed and operation commenced at the Albany Division site on February 8, 1967.

3. The total installed cost of this facility is $21,654.93. An accountant's certification of this figure is attached.

4. Staff Review:

The essence of the claimed facility is that it conveys sanderdust from a central collection area to the sanderdust storage bin in a more direct route than previously used equipment. By doing this, Duraflake eliminated the use of 3 cyclones which were emitting an estimated 100 lb/hr of sanderdust. The company claims that the new facility results in an effective reduction of 90 to 95% of the previous 100 lb/hr emission.

The company also claims that the installation of the subject facility has not resulted in any change in the utilization of sanderdust since it was already being sold or used for boiler fuel.

The staff concludes that the company claims are valid and the facility was installed for the principal purpose of reducing atmospheric emissions.

5. Staff Recommendation:

The staff recommends that a "Pollution Control Facility Certificate" bearing the actual cost figure of $21,654.93 be issued for the facility claimed in Application T-65.

EXHIBIT E

PEAT, MARWICK, MITCHELL & CO.
CERTIFIED PUBLIC ACCOUNTANTS
1010 STANDARD PLAZA
PORTLAND, OREGON 97204

January 10, 1969

Mr. A. R. Morgans, Financial Vice President
Willamette Industries, Inc.
1002 Executive Building
Portland, Oregon 97204

Dear Mr. Morgans:

In connection with your application to the Oregon State Sanitary Authority for certification of pollution control facilities for tax relief purposes, we have examined the costs for the high pressure blower system (as detailed in the respective Exhibit C of the application). In making our examination, we have relied upon such detail as being complete itemization of labor and materials devoted to the construction of the facility described. Our examination consisted of a detailed inspection of vendors' invoices and other documentation of disbursement. We have also traced the costs shown into the plant and equipment accounts of the Company.

In our opinion, the costs for the high pressure blower system as detailed in Exhibit C of the application, amounting to $21,654.93, fairly presents the actual costs incurred by Willamette Industries, Inc., in the construction of the facility.

Very truly yours,

PEAT, MARWICK, MITCHELL & CO.

R. M. Alexander

R. M. Alexander, Partner

RMA:SS

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

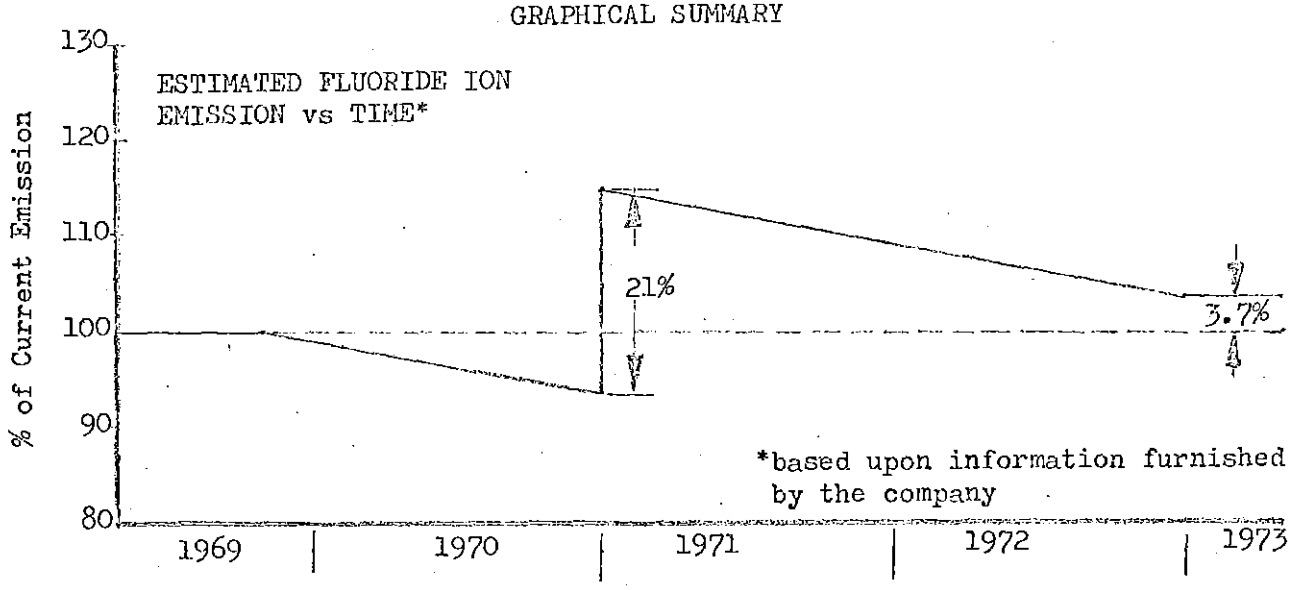
TABULAR SUMMARY

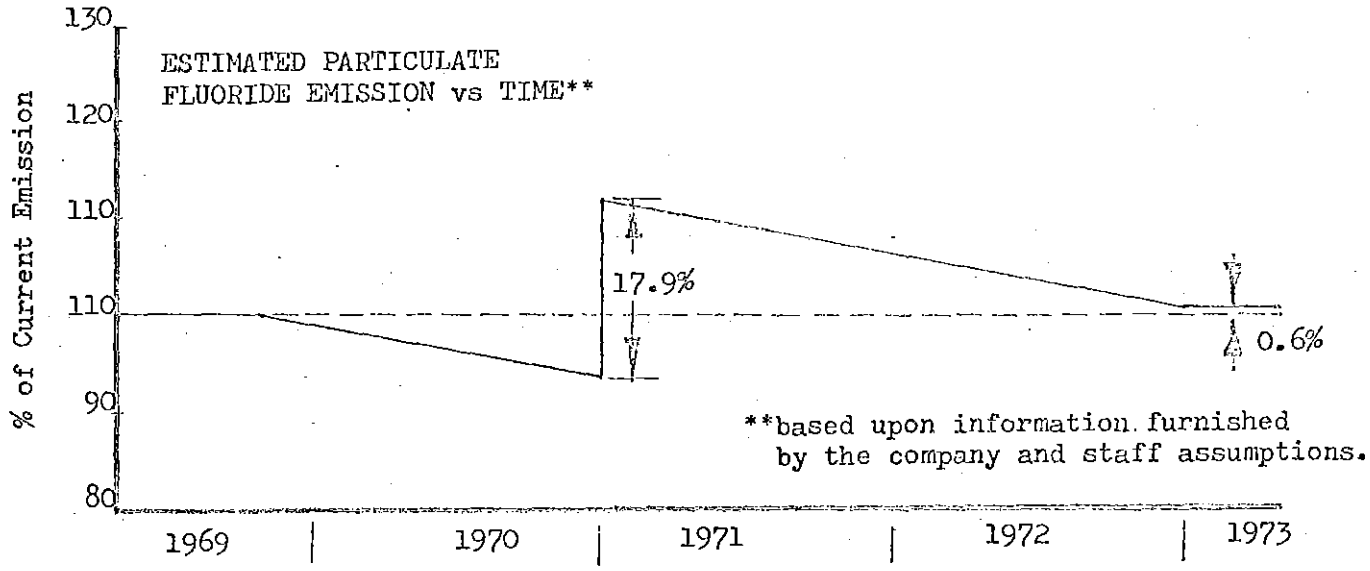
	EMISSIONS IN POUNDS/DAY		
	TOTAL FLUORIDE ION	PARTICULATE FLUORIDE	GASEOUS FLUORIDE
1. Emissions from current process, 560 pots	1812	2900	382
2. Emissions from current process, after modification and improvement	1498	2397	315
3. Emissions from new pot line	381	519	127
4. Total emissions as a result of 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%

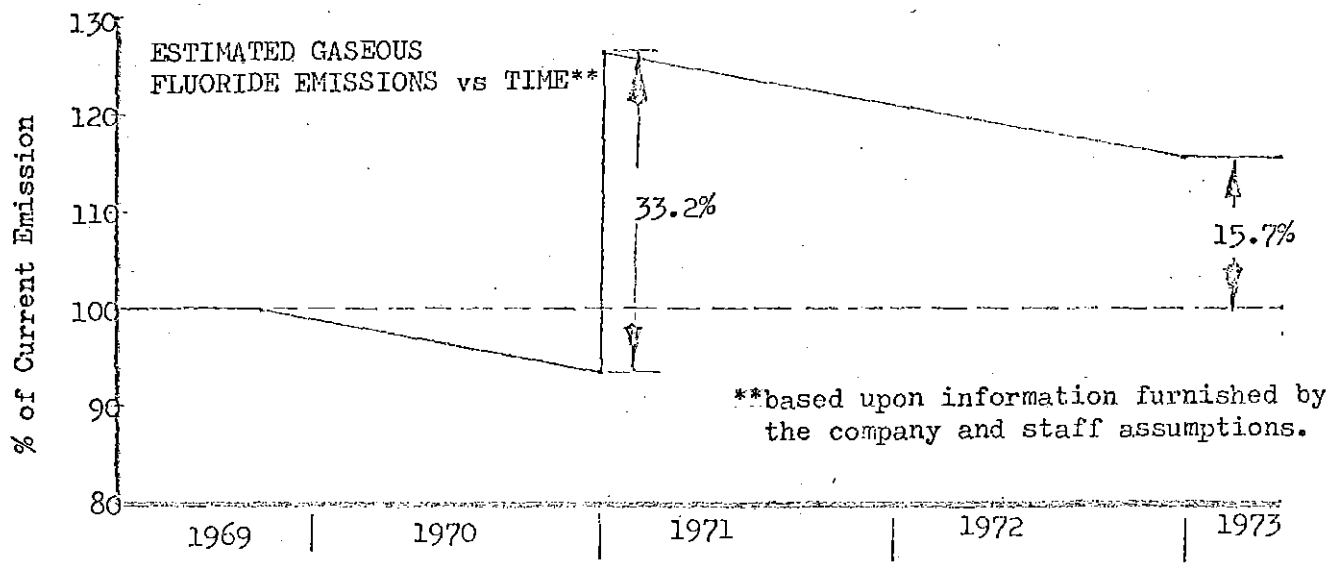
The above tabular values are based upon company submitted information and stated assumptions. The staff also compared these values by calculating emissions based upon other published information. The emissions compare favorably, but in instances similar assumptions were made. The percentage change caused 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

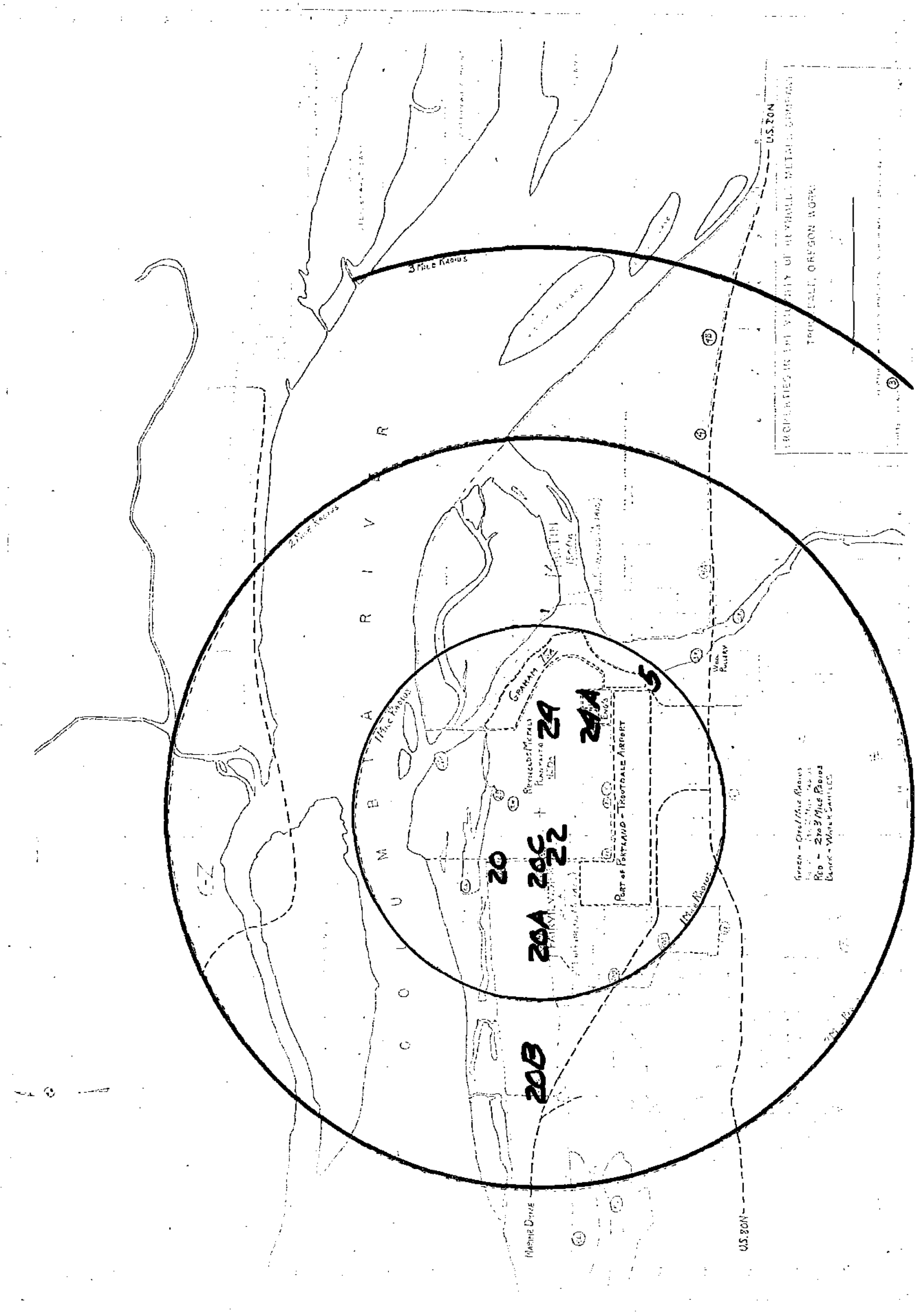
Sample type: Total air-borne fluoride expressed as hydrogen fluoride on a volume basis.

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



C O L U M B I A R I V E R
3 Mile Radius
1 Mile Radius
Graham
Port of Portland - Troutdale Airport
20
20A
20B
20C
22
24
24A
5
U.S. 30N
Marine Drive

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

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	7.6°C. 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

5-16-[illegible]
[illegible]
Fred [illegible]

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

	MAX	MIN	AV.
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

5-16-68 WEC [illegible]

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%	[illegible]	
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 + expansion vs. present 3.8% increase

1863
1794
69

1794
1483
311

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

SUMMARY OF INFORMATION

Relative to

REYNOLDS METALS COMPANY EXPANSION AND MODERNIZATION PROGRAM, Reduction Processes

Production:	Per Year	Per Day	Per Cell
Current	101,000 tons	555,000 lbs.	968 lbs/day
Expansion	28,000 "	154,000 "	1,000 "
Total (New)	129,000 "	705,000 "	

Pot Lines and Pots:

Current: 4 lines of 140 pots each = 560 pots
Expansion 1 line of 140 pots each = 140 "
Total, Post-expansion 700 "

Fluorides Evolved: The company reports under normal conditions approximately 0.028 lbs. of fluoride ion per pound of aluminum produced in the pot. The estimate appears reasonable. The following parameter relating to total fluoride ion has been computed from company data.

Total consumed $\frac{(4300 \text{ lbs})}{(140)}$ = 30.7 lbs/cell/day

Total absorbed $\frac{(1120 \text{ lbs})}{(140)}$ = 8.0 " " "

Total mechanically removed, slag $\frac{(160 \text{ lbs})}{(140)}$ = 1.14 " " "

Emission from pot $\frac{(3020 \text{ lbs})}{(140)}$ = 21.57 " " "

Summary of Current and Projected Efficiencies by the Company

Current pot collection efficiency	75%
Current pot scrubber efficiency	90%
Current roof scrubber efficiency	70%
Proposed pot collection efficiency	95%
Proposed pot scrubber efficiency	92%

NOTE: The company has provided information to analyze the emissions on a total fluoride ion basis (gas plus particulate emissions). Further assumptions are necessary to complete analysis of the emissions and are as follows:

a.	Emissions evolved from pots are:	50% gaseous (fluoride ion) 50% particulates (fluoride ion)
b.	Gaseous emissions are essentially:	100% HF (95% F-)
c.	Fluoride particulate emissions are:	50% non-fluoride ion by weight
d.	Emissions from all scrubbers are:	20% gaseous fluoride 80% particulate

e. Fluoride evolved in pots are equal in current and proposed pots. Note: 1.4% increase in production per pot is actually proposed.)

f. Total particulates cannot be estimated from current information.

From the above assumptions and company information, the emissions from the pots can be computed in terms of gaseous fluoride (95% F^-) and particulate fluoride compounds. (Note: F ion represents only 50% of the weight of the fluoride particulate compounds emitted.)

EMISSIONS CALCULATIONS

1. Emission from current reduction sources or systems:
(Note: The current collection is 75% efficient and 90% efficient in removal, or 10% less.)

		EMISSIONS IN POUNDS/DAY		
		TOTAL FLUORIDE ION	PARTICULATE FLUORIDE	GASEOUS FLUORIDE
a) Pot collection scrubbers emissions				
(21.57 lbs/pot/day(560 pots)(75%)(10%)	=	905.9		
$\frac{(906)\ (0.2)}{(0.95)}$	=			191
$\frac{(906)\ (0.8)}{(0.5)}$			1450	
Totals, lbs/day		906	1450	191
b) Roof scrubbers emissions (Note: 25% escapes the pot collection system of which 70% is removed in roof scrubbers)	=	905.9		
$\frac{(906)\ (0.2)}{(0.95)}$				191
$\frac{(906)\ (0.8)}{(0.5)}$	=		1450	
Totals		906	1450	191
TOTAL EMISSIONS, lbs/day (Current Systems)		1812	2900	382

2. Emissions from current reduction sources and systems after modification and improved collection and treatment:

		EMISSIONS IN POUNDS/DAY		
		TOTAL FLUORIDE ION	PARTICULATE FLUORIDE	GASEOUS FLUORIDE
a)	Emissions from pot line scrubbers after modification to existing pot lines increasing collection and treatment efficiency. (Note: ~~95%~~ 98% of emission is collected and the scrubbers remove ~~92%~~ 90%)			
	(21.57 lbs/pot/day(560)(~~95%~~ 98%)(~~8%~~ 10%)	= ~~918~~ 1111		
	(~~918~~ 1111) (0.2) / (0.95)	=		~~193~~ 234
	(~~918~~ 1111) (0.8) / (0.5)	=	~~1469~~ 1778	
	Totals	~~918~~ 1111	~~1469~~ 1778	~~193~~ 234
b)	Emissions from roof scrubbers after pot modification and increased scrubber efficiencies. (~~5%~~ 8%)(~~30%~~ 40%)	396.5		
	(21.57 lbs/pot/day)(560)(~~5%~~ 8%)(~~30%~~ 40%)	= ~~181~~ 387		
	(~~181~~ 387) (0.2) / (0.95)	=		~~38.1~~ 81.4
	(~~181~~ 387) (0.8) / (0.50)	=	~~290~~ 619	
	Totals, lbs/day	~~181~~ 387	~~290~~ 619	~~38.1~~ 81.4
TOTAL EMISSIONS, lbs/day (Current System after modification)		1496 ~~1099~~	2397 ~~1759~~	315 ~~231~~

Effect of modernization of current plant on emissions:

Total Fluoride Ion ~~713~~ 314 lbs/day (decrease) ~~39%~~ 17.3% change

1812 − 1498 = 314

3. Emissions from the expansion:

a) Emissions from new pot line scrubbers.			
(21.57 lbs/pot/day(140)(95%)(8%)	= 229.5		
(230) (0.2) / (0.95)			48.4
(230) (0.8) / (0.5)	=	368	
Totals lbs/day	230	368	48

		EMISSIONS IN POUNDS/DAY		
		TOTAL FLUORIDE ION	PARTICULATE FLUORIDE	GASEOUS FLUORIDE
b) Emissions from roof (Note: No scrubber provided on new pot line.)				
21.57 lbs/pot/day(140)(5%)	=	151		
$\frac{(151)\ (0.5)}{(0.95)}$	=			79.4
$\frac{(151)\ (0.5)}{(0.5)}$	=		151	
Totals, lbs/day		151	151	79
TOTAL EMISSIONS, lbs/day (New pot line)		381	519	127

Effect of expansion (without modernizing existing plant) on emissions:

Total Fluoride Ion 381 lbs/day (Increase) +21% change

State of Oregon

CRITERIA FOR DETERMINING PRIORITY OF ELIGIBLE PROJECTS FOR FEDERAL CONSTRUCTION GRANTS UNDER PL 84-660

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 90 days of receipt of a grant offer.

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	7400-8799	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 nutient 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. Project under construction or completed 5

Proposed Revisions
5-14-69
Proposal B

State of Oregon

CRITERIA FOR DETERMINING PRIORITY OF ELIGIBLE PROJECTS FOR FEDERAL CONSTRUCTION GRANTS UNDER PL 84-660

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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
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(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 (35 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. Efficient Use of Grant Funds

A.	In accordance with coordinated area-wide plan	5
B.	Permanent facility where no area-wide plan is feasible	5
C.	Interim or temporary facility	2