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7/27/1979

OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS

DEQ

State of Oregon
Department of Environmental Quality

OREGON ENVIRONMENTAL QUALITY COMMISSION MEETING

July 27, 1979

Harris Hall
Lane County Courthouse
125 East Eighth Street
Eugene, Oregon

REVISED TENTATIVE AGENDA

9:30 a.m. CONSENT ITEMS

Items on the consent agenda are considered routine and generally will be acted on without public discussion. If a particular item is of specific interest to a Commission member, or sufficient public interest for public comment is indicated, the Chairman may hold any item over for discussion.

A. Minutes of the June 8, 1979, EQC Meeting

B. Monthly Activity Report for June, 1979

C. Tax Credit Applications

9:40 a.m. PUBLIC FORUM

D. Opportunity for any citizen to give a brief oral or written presentation of any environmental topic of concern. If appropriate, the Department will respond to issues in writing or at a subsequent meeting. The Commission reserves the right to discontinue this forum after a reasonable time if an unduly large number of speakers wish to appear.

ACTION ITEMS

The Commission will hear testimony on these items at the time designated, but may reserve action until the Work Session later in the meeting.

10:15 a.m. E. Request for Quiet Area Recommendation - Willamette River between Eugene and Harrisburg

F. Field Burning - Consideration of action necessary to ensure compliance with state and federal law regarding field burning during 1979

G. Variance Request - Request by Curry County for variance from rules prohibiting open burning dumps (OAR 340-61-040(2)(c))

11:00 a.m. H. Consideration of petition from Deschutes County Commissioner and interested persons to promulgate, amend or repeal rules on subsurface sewage disposal for the LaPine area of Deschutes and Klamath Counties

OTHER INTEREST ITEMS (requiring no action)

I. City of Bend - Status of Bend sewerage facility project

J. Federal Grant Application - Review of federal grant application for air, water and solid waste programs

1:30 p.m. PUBLIC HEARING

K. River Road-Santa Clara Septic Tank Moratorium - Whether to continue, repeal or modify Oregon Administrative Rule (OAR) 340-71-020(9) as it relates to the current septic tank moratorium in effect in the River Road-Santa Clara Area of Lane County

WORK SESSION

The Commission reserves this time if needed to further consider proposed action on any item on the agenda.

Because of the uncertain time span involved, the Commission reserves the right to deal with any item at any time in the meeting except Items D, E, H, and K. Anyone wishing to be heard on an agenda item that doesn't have a designated time on the agenda should be at the meeting when it commences to be certain they don't miss the agenda item.

The Commission will breakfast (7:30 a.m.) and lunch in Conference Room A off the Harris Hall Cafeteria.

MINUTES OF THE ONE HUNDRED ELEVENTH MEETING

OF THE

OREGON ENVIRONMENTAL QUALITY COMMISSION

July 27, 1979

On Friday, July 27, 1979, the one hundred eleventh meeting of the Oregon Environmental Quality Commission convened in Harris Hall of the Lane County Courthouse, 125 East Eighth Street, Eugene, Oregon.

Present were all Commission members: Mr. Joe B. Richards, Chairman; Mr. Ronald M. Somers; Mr. Albert H. Densmore; and Mr. Fred J. Burgess. It is noted that Commissioner Jacklyn Hallock resigned from the Commission as of July 2, 1979. Present on behalf of the Department were its Director, William Young and several members of the Department staff.

Staff reports presented at this meeting, which contain Director's recommendations mentioned in these minutes, are on file in the Director's Office of the Department of Environmental Quality, 522 S. W. Fifth Avenue, Portland, Oregon.

BREAKFAST MEETING

The Commission met for breakfast at 7:30 a.m. in Conference Room A off the Harris Hall cafeteria, and discussed the following items without taking any action on them.

1. Status of Field Burning
2. River Road/Santa Clara Septic Tank Moratorium
3. Disposal Wells in Central Oregon
4. Content of EQC Minutes
5. Date and Location of September and October EQC Meetings

At lunch, the Commission discussed particulate and ozone strategy development schedules and Prevention of Significant Deterioration policy issues.

FORMAL MEETING

Consent Agenda

The following items were approved unanimously without discussion:

Agenda Item A - Minutes of the June 8, 1979, EQC Meeting

Agenda Item B - Monthly Activity Report for June 1979

Agenda Item C - Tax Credit Applications

Public Forum

Mr. William V. Pye, General Manager of the Metropolitan Wastewater Management Commission, Eugene/Springfield/Lane County, appeared and requested Commission support for House Resolution 4113 and Senate Resolution 328 now before Congress regarding additional construction grant funding for water quality projects. He said passage of this bill would provide an additional $20 million to states for water quality construction grants.

It was MOVED by Commissioner Densmore, seconded by Commissioner Somers and carried unanimously that the Commission send a Resolution to Congress in support of HR 4113 and SR 328 to provide additional funding for water quality construction grants.

Agenda Item F - Field Burning - Consideration of Action Necessary to Ensure Compliance with State and Federal Law Regarding Field Burning During 1979

Director Young informed the Commission that he was in receipt of a memorandum from Governor Atiyeh requesting that the Commission remove this item from their agenda. The Governor indicated in his memorandum that the City of Eugene and the Oregon Grass Seed Growers Association joined him in this request. Because of the sensitive nature of discussions between the Governor, the City of Eugene and the Grass Seed Growers, the Governor felt it was inappropriate for the Commission to take action at this time. The Governor assured the Commission that appropriate action would be taken prior to the time 50,000 acres were burned and requested that the Commission be available for a special meeting regarding this matter.

Chairman Richards indicated that contrary to the Notice of Violation issued by the Environmental Protection Agency to the Department, Federal law had not been violated by the Department issuing preliminary permits. These permits were not license to burn until confirmed and issued by the local fire district, and there was no intent to exceed or break Federal law by the issuance of those permits by the Department.

Agenda Item G - Request by Curry County for a Variance from Rules Prohibiting Open Burning Dumps, OAR 340-61-040(2) (c)

This item dealt with a request by Curry County to continue operation of the Brookings and Nesika Beach open burning dumps until October 1, 1979 because closure of the two sites would be impractical. A new site is proposed to open by no later than October 1, 1979 and redirecting the public and private haulers for two months would be disruptive.

Summation

1. Curry County was issued a variance to continue operation of the Brookings and Nesika Beach open burning dumps. This variance to OAR 340-61-040(2) (c) prohibiting open burning dumps is due to expire August 1, 1979.

2. Start of construction of a new regional facility was delayed because of difficulty in finding an acceptable site. Construction is well underway, and is expected to be completed by October 1, 1979.

3. Alternate disposal sites are available for the two month interim. Use of these sites is impractical, in the Department's opinion.

4. Under ORS 459.255, a variance to solid waste regulations can be granted by the Commission if the alternatives available are impractical.

Director's Recommendation

Based upon the findings in the Summation, it is recommended that a variance be granted to Curry County to continue operation of the Brookings and Nesika Beach open burning dumps until October 1, 1979.

It was MOVED by Commissioner Somers, seconded by Commissioner Burgess and carried unanimously that the Director's Recommendation be approved.

Agenda Item I - Informational Report: Status of Bend Sewerage Facility Project

At the Commission's meeting June 29, 1979, Mr. Gordon Priday and Mr. Paul Ramsey testified during Public Forum about using disposal wells for disposing treated effluent from the new Bend sewage treatment plant. As a result of that testimony, the Commission requested the Department to present a status report on the project. The Commission was presented status reports on the Bend project at the March and January 1978 meetings; and last significant action by the Commission relative to Bend occurred in November 1977 when interim use of disposal wells was approved.

Currently, about half of the sewage collection system had been completed with other portions under construction. Construction had begun on the sewage treatment plant. Preliminary engineering work had been started on evaluation of various means of interim subsurface disposal, i.e., evaporation/percolation beds, disposal wells, etc. Completion of the Environmental Impact Statement, previously scheduled for December 1978 has been delayed until December 1979. It is conceivable that the EIS will not be completed until sometime in 1980.

Mr. Richard Nichols, DEQ's Central Region Manager, proposed to come back to the Commission with a further status report in November or December 1979.

Mr. John Vlastelicia, EPA's Oregon Operations Office, indicated EPA would have a preliminary draft report by August 31 and proposed to go to public hearing in October with some minimal groundwater information.

Submitted for the record was a letter from the Deschutes Valley Water District dated July 23, 1979 regarding subsurface sewage disposal in the Bend area.

This report was for information only, no action of the Commission was necessary.

Agenda Item J - Informational Report: Review of Federal Grant Application for Air, Water and Solid Waste Programs

Each year the Department and the Environmental Protection Agency negotiate an agreement whereby EPA provides basic program grant support to the air, water and solid waste programs in return for commitments from the Department to perform planned work on environmental priorities of the state and federal government.

For Fiscal Year 1980, EPA required a formal State-EPA Agreement that included not only work plans for the three state programs, but also work plans for environmental problems that have significant cross-programmatic impact, such as sludge management. EPA also required greater public participation in the negotiation process than in previous years.

This item was on the agenda to provide opportunity for public comment and Commission input on the policy implications of the draft Agreement.

No one was present to testify on this matter.

The Commission indicated it would review the draft Agreement and submit any comments to the Director by the following week.

Agenda Item E - Quiet Area Recommendation: Willamette River between Eugene and Harrisburg

The Department received a request to recommend a section of the Willamette River be designated a quiet area under the noise control rules. The petitioners claim that motorboat noise disrupts the serenity of the river and believe the quiet area designation would control this noise. The concern about motorboat activity on this section of the river resulted from a commercial "jet boat" excursion service that operates from the Valley River Inn in Eugene to Harrisburg.

The noise control standards generally apply only to noise sources operating near residences, schools, churches and other noise sensitive property. However, the rules include a provision for Commission designation of open areas as "quiet areas". These designated quiet areas would be protected under the noise standards and special standards for motor vehicles and industrial activities could apply to sources impacting a quiet area.

Summation

1. The Department has been requested to recommmend the Willamette River between Eugene and Harrisburg be designated a "quiet area" as provided for in the noise control regulations.

2. A presently operated commercial excursion boat is likely to comply with the quiet area noise standards with neither change in operation nor equipment.

3. Preemptive federal laws for "navigable" waters would probably prevent the prohibition on any commercial boat operations on this section of the river.

4. Recreational motorboats would probably exceed the "quite area" standards of the noise control regulations.

5. The State Marine Board could prohibit recreational motorboats from this river section; however, may be reluctant to place restriction on recreational use without identical controls on commercial use.

6. Portions of the river section near Eugene are not acceptable for "quiet area" designation due to high ambient noise levels caused by motor vehicles and industrial sources.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission not designate the Willamette River between Eugene and Harrisburg a quiet area as provided by the noise control regulations. However, if the Commission elects to consider designation of this river section as a quiet area, it is recommended that the Commission authorize public

hearings to take testimony on the proposed designation in order to include any quiet area designation within the adopted administrative noise control rules.

Mr. Steve Gilbert, Sierra Club, presented slides of the area in question. He maintained that the Willamette River area in Eugene was unique and should be designated as a quiet area to preserve it as such. He said that background noise was easily tuned out but that noise from motorized craft on the river presented a real disturbance. He asked the Commission to consider the type as well as the level of noise and to designate the quiet area.

Mr. Jim Hare, Eugene, said that the area in question was not a wilderness area but was quieter than the urban area around it. He maintained it was a place of retreat and should be preserved as such. Mr. Hare was in favor of the quiet area designation.

Mr. Larry Farris, Eugene, testified against the designation of a quiet area. He said he believed the majority didn't care if the river was noisy. As an owner of a jet boat, Mr. Ferris stated he didn't want to be forced off what he considered to be the safest part of the river. He said there were other areas of the river which were more appropriate for the users of non-motorized craft.

Mr. Dan Kelso, Eugene, testified against the quiet area designation.

Mr. Mike Hume, Eugene, testified that the excursion jet boat made the river accessible to people who might not otherwise be able to view that part of the river. He was against designation of a quiet area.

Mr. Michael Piper, Greenpeace, said the petitioners were most concerned about the area between the Ferry Street and Belt Line bridges being designated as a quiet area. He also said they were concerned about all types of motorized traffic on that stretch of the river. Mr. Piper favored the quiet area designation.

Mr. Richard L. Hansen, Valley River Center, Eugene, said that the jet boat excursion service provides an opportunity for people to see the river. He was also concerned about those sources near the river being restricted as a result of the quiet area designation. Mr. Hansen was against the designation of a quiet area.

Mr. Dale Moon, Eugene, suggested that perhaps the Commission was not the proper body to help the situation. He felt that the area qualified as a quiet area and suggested that perhaps the Commission set up a criteria for on-the-water uses.

Mr. Richard LaCasse, Eugene, said that there was technology available to control noise from sources next to the river. He questioned the public service offered by the jet boat excursion service. Mr. LaCasse favored the quiet area designation.

In response to suggestions that the Commission request local jurisdictions to see what they could do about the matter, Mr. Tim Sercombe, Eugene City Attorney, replied that the City had pursued the matter and concluded that any city rule would be very difficult to enforce and deferred the matter to state agencies.

It was MOVED by Commissioner Densmore, seconded by Commissioner Burgess and carried unanimously that the Director's recommendation be approved and that the staff be instructed to look at EQC jurisdiction and possible additional changes to the noise regulations to cover this area and also instruct the staff the pursue what other jurisdictions could do. The Commission requested that the Department then report back to them.

Agenda Item H - Consideration of Petition from Deschutes County Commissioner and Interested Persons to Promulgate, Amend, or Repeal Rules on Subsurface Sewage Disposal (OAR 340-71-030(1) (c) (A&B) in the LaPine Area of Deschutes and Klamath Counties

The petition before the Commission concerned opposition to the Department's subsurface sewage disposal rules that pertain to the use of soil mottling as an indicator of the high ground-water table. Opposition primarily stems from a high amount of permit denials in the LaPine area, even though, in some instances, water levels as indicated by local well data show it much deeper to water.

Summation

1. The Department has received a petition from a Deschutes County Commissioner requesting that OAR 340-71-030(1) (c) (A&B) be repealed or amended.

2. OAR 340-71-030(1) (c) (A&B) allows the Department or its authorized representatives to use soil mottling as an indicator of high water table.

3. There has been a relatively high (60%) denial rate for subsurface sewage disposal systems in the LaPine area. Most of these denials have been due to high water table as indicated by soil mottles. Because of discrepancies between water levels observed in wells and high water levels predicted by soil mottles, use of mottles is highly disputed in LaPine.

4. Recent soil and groundwater investigations conducted by Dr. Robert Paeth have revealed that much of the soil mottling in the LaPine area can be attributed to a temporary, perched water table rather than a permanent table.

5. Allowable separation distances between the disposal trench and the water table is substantially less when the water table is temporary rather than permanent. Because of this, approval rates for subsurface systems would be significantly higher.

6. The Department believes soil mottling is a useful and necessary tool for determining high groundwater levels. While there have been discrepancies found, these have been and can continue to be resolved through soil investigations.

Director's Recommendation

It is recommended that the Environmental Quality Commission deny the petition. It is further recommended that the Commission direct the Department to continue its soil and groundwater investigations in the LaPine area to determine where soil mottling is an indication of temporary groundwater or permanent groundwater levels and report back to the Commission in September 1979.

Director Young indicated that the petitioners were satisfied with the staff report and the Director's recommendation.

There was no one present to testify on this matter.

It was MOVED by Commissioner Densmore, seconded by Commissioner Somers and carried unanimously that the Director's Recommendation be approved.

Agenda Item K - Public Hearing as to Whether to Continue, Repeal or Modify Oregon Administrative Rule (OAR) 340-71-020(9) as it Relates to the Current Septic Tank Moratorium in Effect in the River Road-Santa Clara Area of Lane County

On April 28, 1978, the Environmental Quality Commission adopted a Rule and Order which established a septic tank moratorium in the River Road-Santa Clara Area of Lane County. The reason for enacting the moratorium was that preliminary studies indicated the ground waters underlying the area had elevated nitrate (NO_3-N) levels. The most likely source was the urbanized use of subsurface sewage disposal systems.

The moratorium affected approximately 8000 acres, of which about 3000 acres were developed. There are approximately 8500 developed lots in the area and approximately 950 undeveloped parcels. The 950 undeveloped parcels could create approximately 2000 additional building sites, assuming current zoning restrictions would not be altered.

Since the moratorium was enacted, considerable public and political sentiment was voiced to modify or terminate the moratorium. Based on these concerns, the Environmental Quality Commission ordered public rule making hearings to be held in July 1979 to determine if the moratorium should be continued, repealed, or modified.

Summation

1. Public testimony received at the informational hearings conducted in Eugene on March 28 and 29, 1979, mostly opposed the current moratorium.

2. The Lane County Board Commissioners passed a resolution on April 3, 1979 which called for ending the moratorium.

3. The L-COG Interim Analysis Report for the River Road-Santa Clara ground water study being conducted by H. Randy Sweet does not provide definite answers at this time on the extent or severity of ground water contamination problems in the study area.

4. The L-COG study to date has shown or indicated:

   a. Regions downgradient from the study area will be dependent upon ground water for current and future domestic supplies.

   b. The study area generally has elevated NO_3-N levels in the ground water, and some test sites exceed the 10 ppm USPHS drinking water standard.

   c. Bacterial and NO_3-N mobility under saturated soil conditions is rapid.

   d. There are over 300 residences in the study area which currently use individual wells as their supply for domestic water. Of this number, approximately 150 are located in the current moratorium area.

5. The L-COG study is scheduled for completion in March, 1980. From that, Department and Lane County staff expect data interpretation will be available from which conclusive statements regarding the extent and severity of the ground water contamination problems in the study area and downgradient can be made.

6. Three options are available to the Commission for consideration at this time. They are:

   a. Continue the moratorium.

   b. Repeal the moratorium (OAR 340-71-020(9)).

   c. Modify the moratorium (OAR 340-71-020(9)).

Director's Recommendation

Based upon the Summation, it is recommended that the Commission act to modify the current moratorium by amending OAR 340-71-020(9). It is also recommended that the ground water study continue to completion as proposed, and that the grantee make efforts to locate relevant domestic water supply wells inside the study area and downgradient from the study area.

Mr. Randy Newhouse, Eugene, testified in favor of lifting the moratorium.

Mr. Jeff Siegel, questioned the health hazard resulting from the use of septic tanks in the area. He said that the study did not address this question. Mr. Siegel presented some technical data to the Commission regarding nitrate levels in the wells in the area. He said that the data did not support that the nitrate levels were from septic tanks; it could be from other sources. Mr. Siegel testified that because of the nature of the area nitrates will be found anywhere, but it could not be determined from what source.

Ms. Vora Heintz, Eugene, testified that the data and interim study did not justify continuance of the moratorium. She said that no health hazard had been shown and no state statutes had been violated. Ms. Heintz suggested that if the moratorium was continued, an alternative study should be implemented.

Ms. Bonnie Lindsay, Eugene, is a landowner in the area who expressed her concern about possible health hazards. She suggested that the moratorium be lifted but the study be continued to insure that a health hazard does not develop. She said permits needed to be granted because of the rising cost of building and urged that proper testing be done before the permits were granted.

Mr. Richard Klanecky, Eugene, favored lifting of the moratorium because he owns nine acres in the area that cannot be rezoned to sell until the moratorium is lifted.

Mr. Don Williams, Eugene, also questioned whether a health hazard existed. If the moratorium was not lifted, Mr. Williams said more study into the use of experimental and alternative systems needed to be done.

Mr. Randy Sweet, consultant to Lane Council of Governments on the Interim Study, responded to testimony. He agreed that septic tanks were good technology but there are some nitrate problems in some areas. He said that nitrate levels were higher in the shallow aquifer and they were adding some deep wells to the study to determine the levels there. Once contaminated, Mr. Sweet said, it takes an enormous amount of time for an aquifer to clean itself.

Mr. Gordon Elliott, owns two-hundred acres in the area and needs another septic tank for rental buildings on his property. He believed this was more a political matter than one of a health hazard and unless the moratorium was lifted he would be unable to develop his property.

Mr. Hayden A. Haley, Irving Christian Church, Eugene, requested that the Commission lift the moratorium because no data had been presented to support continuing it. Mr. Haley's written statement is made a part of the Commission's record on this matter.

At this point in the Hearing, Chairman Richards notified those present that suspected infectious hepatitis had recently been found in five families in the River Road-Santa Clara Area on five shallow aquifer wells.

Commissioner Archie Weinstein, Lane County, opposed the continuation of the moratorium. He said the Lane County Commission passed a resolution supporting the repeal of the moratorium. Commissioner Weinstein stressed the need for more buildable lots in the area.

Mr. Russ Oleson, Eugene C & MA Church, testified that the Church owned property in the area they wished to develop. He favored repeal of the moratorium or modification to include allowing development of property because of hardship.

Mr. Thomas E. Heintz, urged repeal of the moratorium because a health hazard had not been proved.

This concluded testimony on this item.

It was MOVED by Commissioner Burgess, seconded by Commissioner Somers and carried unanimously that the Director's recommendation be approved and amended the proposed rule to read as follows:

OAR 340-71-020(9) (b):

(b) Paragraph (a) of this subsection shall not prohibit the issuance of construction permits or favorable reports of evaluation of site suitability for:

A. One subsurface sewage disposal system on each existing tax lot which was of record on or before April 28, 1978, and upon which there is no structure which houses a toilet facility, provided:

1. The lot and soil conditions meet the minimum standards of OAR 340-71-020 and 340-71-030 for standard system installation.

2. The projected daily sewage flow shall not exceed 600 gallons.

3. The system proposed is not for a variance, rural areas variance or experimental system.

B. An extension to an existing system which is required by the rules in this division in order to allow the addition of a bedroom or bedrooms to an existing residence.

C. A repair to an existing system provided, however, if such permit or favorable report of evaluation of site suitability is not relied upon to a substantial financial extent by the recipient thereof by March 31, 1980, the Commission may by rule, prohibit after appropriate notice, the use of such permit or report if the Commission repeals or amends this paragraph (b) of this subsection.

There being no further business, the meeting was adjourned.

Respectfully submitted,

Carol A. Splettstaszer
Recording Secretary

V.A.Atiyeh
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item B, July 27, 1979, EQC Meeting

June Program Activity Report

Discussion

Attached is the June Program Activity Report.

ORS 468.325 provides for Commission approval or disapproval of plans and specifications for construction of air contaminant sources.

Water and Solid Waste facility plans and specifications approvals or disapprovals and issuance, denials, modifications and revocations of permits are prescribed by statutes to be functions of the Department, subject to appeal to the Commission.

The purposes of this report are:

1) to provide information to the Commission regarding the status of reported program activities and an historical record of project plan and permit actions;
2) to obtain confirming approval from the Commission on actions taken by the Department relative to air contamination source plans and specifications; and
3) to provide a log on the status of DEQ contested cases.

Recommendation

It is the Director's Recommendation that the Commission take notice of the reported program activities and contested cases, giving confirming approval to the air contaminant source plans and specifications listed on pages 2 and 3 of the report.

WILLIAM H. YOUNG

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229-6485
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DEPARTMENT OF ENVIRONMENTAL QUALITY

Monthly Activity Report

June, 1979
Month

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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality, Water Quality, Solid Waste Divisions (Reporting Unit) — June, 1979 (Month and Year)

SUMMARY OF PLAN ACTIONS

	Plans Received		Plans Approved		Plans Disapproved		Plans
	Month	Fis.Yr.	Month	Fis.Yr.	Month	Fis.Yr.	Pending
Air							
Direct Sources	23	238	29	211	0	2	66
Total	23	238	29	211	0	2	66
Water							
Municipal	73	1,288	75	1,207	0	0	41
Industrial	11	144	19	139	0	0	22
Total	84	1,432	94	1,346	0	0	63
Solid Waste							
General Refuse	6	25	5	24	0	2	4
Demolition	0	7	1	4	0	0	2
Industrial	2	22	2	27	0	0	1
Sludge	0	3	0	0	0	0	0
Total	8	57	8	55	0	2	7
Hazardous Wastes							
GRAND TOTAL	115	1,727	131	1,612	0	4	316

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June, 1979 (Month and Year)

PLAN ACTIONS COMPLETED - 29

County	Name of Source/Project /Site and Type of Same	Date Received	Date of Completed Action	Action
Direct Stationary Sources				
Columbia (NC 1308)	Bergsoe Metal Corp. Secondary lead smelter	1/11/79	5/30/79	Approved
Washington (NC 1313)	Baker Rock Crushing Co. New rock crusher	1/19/79	3/02/79	Approved
Marion (NC 1327)	Walling Sand & Gravel Co. Yard paving	2/06/79	2/22/79	Approved
Lane (NC 1340)	Weyerhauser Co. Sand filter on veneer dryer	2/09/79	6/18/79	Approved (Tax Credit Only)
Columbia (NC 1343)	Occidental Chemical Co. Fertilizer mfg.	2/09/79	5/18/79	Cancelled
Multnomah (NC 1345)	Precision Castparts Corp. Grinding room baghouse	2/22/79	6/21/79	Approved
Linn (NC 1360)	Morse Brothers, Inc. Asphalt paving plant	3/12/79	4/ /79	Approved
Benton (NC 1364)	Brand S Leading Plywood Veneer dryer scrubber	3/16/79	5/29/79	Approved
Benton (NC 1365)	Brand S Scrubber on No. 1 Moore dryer	3/16/79	5/29/79	Approved
Benton (NC 1366)	Brand S Scrubber on No. 3 Moore dryer	3/16/79	5/29/79	Approved
Coos (NC 1372)	Weyerhauser Co. Veneer dryer seals	4/06/79	5/31/79	Approved
Coos (NC 1373)	Weyerhauser Co. Rebuild Burley scrubber	4/06/79	5/31/79	Approved

PLAN ACTIONS COMPLETED - 29, cont'd

County	Name of Source/Project /Site and Type of Same	Date Received	Date of Completed Action	Action
Direct Stationary Sources (Cont.)				
Umatilla (NC 1377)	Louisiana-Pacific Corp. High speed planer	4/04/79	5/31/79	Approved
Jackson (NC 1378)	Medford Corp. burley scrubbers on veneer dryer	3/29/79	6/06/79	Approved
Yamhill (NC 1379)	Publishers Paper Co. Hog boiler and chip handling	3/29/79	5/25/79	Approved
Linn (NC 1380)	Teledyne Wah Chang Albany Feed make-up storage sys.	4/13/79	6/05/79	Approved
Portable (NC 1382)	Don Obrist, Inc. Rock crusher with water spray	3/29/79	6/19/79	Approved
Jackson (NC 1389)	Nikkel Lumber Co. Hogged fuel boiler	4/26/79	5/15/79	Approved
Crook (NC 1392)	D & E Wood Products Re-saw mill	4/24/79	6/19/79	Approved
Jackson (NC 1395)	Associated Fruit Co. Overhead sprinkler sys.	4/17/79	6/03/79	Approved
Lane (NC 1397)	Oregon Cedar Products Co. Planer & trim saws	3/23/79	5/30/79	Cancelled
Clackamas (NC 1402)	The Murphy Co. Modify hog fuel boiler	4/17/79	6/26/79	Cancelled
Lane (NC 1403)	Weyerhauser Co. Oxygen analysers, boilers	4/30/79	6/12/79	Approved (Tax Credit Only)
Polk (NC 1409)	Willamette Industries Reverse air flow on #2 dryer	5/14/79	6/15/79	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June, 1979 (Month and Year)

PLAN ACTIONS COMPLETED - 29, cont'd

County	Name of Source/Project /Site and Type of Same	Date Received	Date of Completed Action	Action
Direct Stationary Sources (Cont.)				
Crook (NC 1410)	Clear Pine Moulding, Inc. Veneer dryer	5/07/79	6/21/79	Approved
Douglas (NC 1413)	Woolley Enterprises, Inc. Veneer dryer and Burley scrubber	5/11/79	6/20/79	Approved
Klamath (NC 1419)	Gilchrist Timber Co. Replacement bark and sawdust system	5/21/79	6/27/79	Approved
Jackson (NC 1420)	Boise Cascade Corp. Correct baghouse system	5/21/79	6/21/79	Approved
Clatsop (NC 1423)	Astoria Plywood Corp. Additional veneer dryer	5/24/79	6/12/79	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June, 1979 (Month and Year)

SUMMARY OF AIR PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
	Month	FY	Month	FY			
Direct Sources							
New	1	11	1	35	27		
Existing	1	31	5	49	10		
Renewals	9	119	28	132	63		
Modifications	1	63	1	79	13	1902	1939
Total	12	224	35	295	113	-	-
Indirect Sources							
New	5	37	3	32	19		
Existing	-	-	-	-	-		
Renewals	-	-	-	-	-		
Modifications	-	6	0	6		122	
*Total	5	41	3	43	19		
GRAND TOTALS	17	265	38	338	132	2024	1939

Number of Pending Permits	Comments
15	To be drafted by Northwest Region
9	To be drafted by Willamette Valley Region
11	To be drafted by Southwest Region
4	To be drafted by Central Region
7	To be drafted by Eastern Region
3	To be drafted by Program Planning & Development
14	To be drafted by Program Operations
14	Awaiting Next Public Notice
36	Awaiting the End of the 30-day Noted Period
113	

*Error in FY Totals Corrected

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June 1979 (Month and Year)

PERMIT ACTIONS COMPLETED - 38

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Action
Direct Stationary Sources				
Baker	Baker Redi-Mix, Inc. 01-0001, Asphalt Plant (Renewal)	11/22/78	3/27/79	Permit Issued
Benton	Hull-Oakes Lumber Company 02-6009, Sawmill (Renewal)	11/22/78	5/23/79	Permit Issued
Clatsop	Clatsop County Road Dept. 04-0018, Asphalt Plant (Modification)	11/13/78	2/7/79	Permit Issued
Coos	Johnson Rock Products, Inc. 06-0001, Asphalt Plant (Renewal)	11/7/78	5/25/79	Permit Issued
Coos	Georgia-Pacific Corp. 06-0011, Hardboard Mfg. (Renewal)	8/4/78	5/25/79	Permit Issued
Crook	Ochoco Pellet Plant 07-0013, Animal Feed (Renewal)	11/21/78	5/25/79	Permit Issued
Curry	Champion Building Products 08-0004, Plywood (Renewal)	4/19/78	5/25/79	Permit Issued
Douglas	Johnson Rock Products, Inc. 10-0001, Asphalt Plant (Renewal)	11/7/78	5/25/79	Permit Issued
Douglas	Glendale Plywood Company 10-0055, Plywood Mfg. (Renewal)	10/25/78	5/25/79	Permit Issued
Grant	Edward Hines Lumber 12-0015 (Renewal)	2/8/79	5/25/79	Permit Issued
Harney	Edward Hines Lumber 13-0001 (Renewal)	2/7/79	5/25/79	Permit Issued

PERMIT ACTIONS COMPLETED - 38, cont'd

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Action
Direct Stationary Sources (cont.)				
Hood River	Mid-Columbia Asphalt Co. 14-0017 (Renewal)	11/3/78	6/8/79	Permit Issued
Josephine	Fourply, Inc. 17-0002, Plywood (Renewal)	4/19/78	5/25/79	Permit Issued
Josephine	Applegate Aggregate's 17-0060, Rock Crusher (Existing)	3/8/78	5/25/79	Permit Issued
Lincoln	Toledo Sand & Gravel Co. 21-0019, Rock Crusher (Existing)	12/20/78	5/25/79	Permit Issued
Linn	Doorcraft, Inc. 22-4014, Mill Work (New)	2/7/79	5/25/79	Permit Issued
Linn	Betaseed, Inc. 22-8039, Seed Cleaning (Existing)	12/11/78	5/25/79	Permit Issued
Marion	Oregon Building 24-0324 (Renewal)	9/14/77	9/21/77	Permit Issued
Multnomah	Porter W. Yett Company 26-1767, Asphalt Plant (Renewal)	1/3/79	5/25/79	Permit Issued
Multnomah	Porter W. Yett Company 26-1933 (Renewal)	1/3/79	5/25/79	Permit Issued
Multnomah	Pennwalt Corporation 26-2424, Inorganic Chemicals (Renewal)	2/7/79	5/25/79	Permit Issued
Polk	Willamette Industries 27-0177 (Renewal)	10/13/78	5/25/79	Permit Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June 1979 (Month and Year)

PERMIT ACTIONS COMPLETED - 38, cont'd

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Action
Direct Stationary Sources (cont.)				
Wallowa	Joseph Forest Products 32-0018, Wood Preserving (Existing)	2/7/79	5/25/79	Permit Issued
Washington	Quality Rock Co. 34-1927, Rock Crusher (Renewal)	12/12/78	5/25/79	Permit Issued
Washington	Baker Rock Crushing Co. 34-2021, Rock Crusher (Renewal)	11/16/78	5/25/79	Permit Issued
Washington	Rogers Construction Co. 34-2543, Rock Crusher (Renewal)	12/1/78	5/25/79	Permit Issued

PERMIT ACTIONS COMPLETED - 38, cont'd

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Action
Direct Portable Sources				
Portable	Hap Taylor, Inc. 37-0020, Asphalt Plant (Renewal)	1/3/79	5/25/79	Permit Issued
Portable	Rogue West 37-0028, Asphalt Plant (Renewal)	11/1/78	2/7/79	Permit Issued
Portable	L. W. Vail Co., Inc. 37-0068, Asphalt Plant (Renewal)	1/2/79	5/25/79	Permit Issued
Portable	Angell Asphalt & Aggregate, Inc. 37-0091, Asphalt Plant (Renewal)	2/8/79	5/25/79	Permit Issued
Portable	Babler Bros., Inc. 37-0121, Asphalt Plant (Renewal)	1/3/79	5/25/79	Permit Issued
Portable	Babler Bros., Inc. 37-0168, Asphalt Plant (Renewal)	1/3/79	5/25/79	Permit Issued
Portable	L. W. Vail Co., Inc. 37-0175, Asphalt Plant (Renewal)	1/2/79	5/25/79	Permit Issued
Portable	L. W. Vail Co., Inc. 37-0192, Asphalt Plant (Renewal)	1/2/79	5/25/79	Permit Issued
Portable	Charles W. Royer 37-0221, Rock Crusher (Existing)	2/8/79	5/25/79	Permit Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — June, 1979 (Month and Year)

PERMIT ACTIONS COMPLETED - 38, cont'd

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Indirect Sources			
Clackamas	Omark Industries 350 Spaces File No. 03-7910	6/18/79	Final Permit Issued
Marion	Chumaree-Rodeway Inn 303 Spaces File No. 24-7909	6/08/79	Final Permit Issued
Marion	Sheraton Motor Inn 528 Spaces File No. 24-7911	6/29/79	Final Permit Not Effective (Completed Land Use Statement Needed)

DEPARTMENT OF ENVIRONMENTAL QUALITY WATER QUALITY DIV.ACTIVITY REPORT

7/11/79 PLAN ACTIONS COMPLETED: 94 MUNICIPAL SOURCES 75 JUNE 1979

ENGINER COUNTY	LOCATION PROJECT	REVIEWER	DATE REC	DATE OF ACTION	ACTION	DAYS TO COMPLETE
USA	AMES ORCHARD NO 2	J	5/31/79	6/06/79	PROV APP	06
LAKE OSWEGO	REVISED-RIVER RUN	J	6/07/79	6/15/79	PROV APP	08
BCVSA	STEP SYSTEM EARY PROPERTY	V	6/02/79	6/22/79	PROV APP	20
BCVSA	STEP SYSTEM MOORE/WITT PROP	V	6/02/79	6/22/79	PROV APP	20
LAKEVIEW	WESTWOOD PARK	K	6/04/79	6/12/79	PROV APP	08
SPRINGFIELD	YOUNGSTOWN	K	6/04/79	6/11/79	PROV APP	07
MEDFORD	SILVERADO ESTATES	K	6/04/79	6/12/79	PROV APP	08
UNI SWR AGCY	BERRYHILL EXT	K	6/04/79	6/12/79	PROV APP	08
UNI SWR AGCY	CREEKSIDE PK	K	6/01/79	6/12/79	PROV APP	11
UNI SWR AGCY	LAPAY PARK	K	6/01/79	6/12/79	PROV APP	11
UNI SWR AGCY	BELLWOOD NO 3	K	6/04/79	6/12/79	PROV APP	08
UNI SWR AGCY	KWAKIUTL RIDGE	K	6/05/79	6/12/79	PROV APP	07
UNI SWR AGCY	TARA SUBDIV	K	6/05/79	6/12/79	PROV APP	07
NEWBERG	QUAIL MEADOW NO 1	K	6/05/79	6/29/79	PROV APP	24
NEWBERG	QUAIL MEADOW NO 2	K	6/05/79	6/29/79	PROV APP	24
MARION CO	ROBIN HOOD MEADOWS	K	6/07/79	6/28/79	PROV APP	21
UNI SWR AGCY	BERKHOLTZ SEWER EXT	K	6/07/79	6/26/79	PROV APP	19
SALEM	LEAH ADDITION	K	6/06/79	6/29/79	PROV APP	23
MCMINNVILLE	E 19TH ST/N HEMBREE	K	6/06/79	6/29/79	PROV APP	23
UNI SWR AGCY	SONNENTAL SUBD	K	6/09/79	6/26/79	PROV APP	18
LAKEVIEW	OREGON VALLEY LAND CO ADD	K	6/08/79	6/28/79	PROV APP	20
PORTLAND	KALMAR-SWENSON PROJ	K	6/01/79	6/01/79	PROV APP	10
PORTLAND	HARVARD ST PROJ	K	6/01/79	6/11/79	PROV APP	10
EUGENE	SOLAR HEIGHTS	K	5/17/79	6/11/79	PROV APP	25
SALEM	SORRAL DOCK PROJ	K	6/22/79	6/29/79	PROV APP	07
SALEM	WOODSCAPE GLEN NO 2	K	6/20/79	6/29/79	PROV APP	09
UNI SWR AGCY	MORNING HILL NO 2	K	6/26/79	6/29/79	PROV APP	03
UNI SWR AGCY	ABBEY SUBDIV	K	6/27/79	6/29/79	PROV APP	02
UNI SWR AGCY	FOUR OAKS SUBDIV	K	6/26/79	6/29/79	PROV APP	03
SPRINGFIELD	NATALI SUBDIV	K	6/20/79	6/28/79	PROV APP	08
SPRINGFIELD	SICON SUBDIV	K	6/18/79	6/28/79	PROV APP	10
SPRINGFIELD	JOHN-WAY SUBDIV	K	6/15/79	6/28/79	PROV APP	13
SPRINGFIELD	DOLBY PLAT	K	6/25/79	6/28/79	PROV APP	03
SPRINGFIELD	LOCHAVEN SUBDIV	K	6/21/79	6/28/79	PROV APP	07
CCSD NO 1	BLOEDEL GARDENS 11	K	6/11/79	6/27/79	PROV APP	16
UNI SWR AGCY	HAWTHORN FARMS	K	6/15/79	6/29/79	PROV APP	14
GRESHAM	BRADLEY ACRES	K	6/22/79	6/27/79	PROV APP	07
THE DALLES	GARDEN COURT	K	6/12/79	6/28/79	PROV APP	16
UNI SWR AGCY	ASH CREEK WOODS	K	6/13/79	6/26/79	PROV APP	13
BAKER	FIFTEENTH STREET	K	6/15/79	6/28/79	PROV APP	13
BAKER	"L" STREET	K	6/15/79	6/28/79	PROV APP	13
ORE CITY	COLUMBIA AVE	K	6/07/79	6/26/79	PROV APP	19
BAKER	21ST STREET	K	6/12/79	6/29/79	PROV APP	15
UNI SWR AGCY	RYLAND PARK	K	6/13/79	6/26/79	PROV APP	13
UNI SWR AGCY	BURRIDGE CT	K	6/13/79	6/26/79	PROV APP	13
UNI SWR AGCY	KNEELAND ESTATES	K	6/08/79	6/26/79	PROV APP	18
ROSEBURG	HIGHWOOD SUBDIV	K	6/11/79	6/29/79	PROV APP	18

DEPARTMENT OF ENVIRONMENTAL QUALITY WATER QUALITY DIV.ACTIVITY REPORT

7/11/79 PLAN ACTIONS COMPLETED - 94, cont'd MUNICIPAL SOURCES (Cont.) JUNE 1979

ENGINER	COUNTY	LOCATION	PROJECT	REVIEWER	DATE REC	DATE OF ACTION	ACTION	DAYS TO COMPLETE
		DALLAS	MTN VIEW ESTATES	K	6/09/79	6/25/79	PROV APP	16
		EUGENE	RELOCATION NOR OF 11TH	K	6/12/79	6/26/79	PROV APP	14
		SALEM	ROBIN HOOD ADD	K	6/07/79	6/28/79	PROV APP	21
		REDMOND	AIRPORT IND PK	K	6/07/79	6/29/79	PROV APP	22
		UNI SWR AGCY	GOLD RIDGE	K	6/26/79	6/29/79	PROV APP	03
		OAKRIDGE	OAK COURT	K	6/11/79	6/29/79	PROV APP	18
		TRI CITY SD	THEISS EXT	K	6/11/79	6/29/79	PROV APP	18
		BOARDMAN	COLUMBIA RIV VIEW EST	K	6/20/79	6/29/79	PROV APP	09
		BOARDMAN	LOCKE IND PARK	K	6/20/79	6/29/79	PROV APP	09
		BANDON	4TH STREET IMP	K	6/12/79	6/29/79	PROV APP	17
		BANDON	WOOLEN MILL SEWERS	K	5/29/79	6/29/79	PROV APP	31
		SPRINGFIELD	STEELE & DENT	J	5/29/79	6/05/79	PROV APP	07
		SALEM	BOXWOOD LANE SE	J	5/29/79	6/05/79	PROV APP	07
		SALEM	REVISED OAKWOOD ESTATES	J	5/24/79	6/04/79	PROV APP	11
		SALEM	REVISED STONE HEDGE EST 2/3	J	5/24/79	6/06/79	PROV APP	13
		SALEM	REVISED TIERRA JUNIPERO	J	5/24/79	6/06/79	PROV APP	13
		USA	TRACHSEL MEADOWS	J	5/31/79	6/06/79	PROV APP	20
		ESTACADA	FOUR SEASONS ESTATES	J	5/25/79	6/04/79	PROV APP	10
		DALLAS	HOLMAN ST	J	5/30/79	6/04/79	PROV APP	05
		DALLAS	BROOKSIDE AVE	J	5/30/79	6/04/79	PROV APP	05
		DALLAS	PINE ST	J	5/30/79	6/04/79	PROV APP	05
		DALLAS	PINE PLACE	J	5/30/79	6/04/79	PROV APP	05
29		ROCKAWAY	STP MODIFICATION	V	3/13/79	6/05/79	PROV APP	84
		MWMC E/S	CONTRACT E-26 FAB. SLIDE GT	V	4/23/79	6/22/79	PROV APP	60
		MWMC E/S	CONTRACT E-21 SLUICE GATES	V	4/23/79	6/22/79	PROV APP	60
		E/S MWMC	CONTRACT C-2 PRIMARY TREAT	V	4/23/79	6/22/79	PROV APP	60
	26	HAYDEN ISLAND	STP EXPANSION	V	3/27/79	6/05/79	PROV APP	66
		LAKE OSWEGO	WILLAMETTE-MARYLHURT-CITY I	V	5/04/79	6/04/79	PROV APP	31

MONTHLY ACTIVITY REPORT

Water Quality (Reporting Unit) — June 1979 (Month and Year)

PLAN ACTIONS COMPLETED - 94, cont'd

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
	INDUSTRIAL WASTE SOURCES (19)		
Linn	Oregon Freeze Dry - Albany Wash Down Water Screening	10/2/78	Approved
Yamhill	The Piggery - Sheridan Animal Waste Holding Tank	10/6/78	Approved
Linn	Teledyne Wah Chang Albany Storage Tank Sump	10/13/78	Approved
Lincoln	Mo's Newport Seafood Shrimp Process Waste	2/9/79	Approved
Douglas	International Paper Co. Gardiner, Control ph & BOD	2/29/79	Approved
Linn	Teledyne Wah Chang Albany Surfuric Acid Tank Berm	4/16/79	Approved
Marion	Van Dyke Dairy - Salem Animal Waste	5/9/79	Approved
Columbia	Crown Zellerbach - Wauna Control Increase Landfill Waters	5/19/79	Approved
Yamhill	Larry Cummings - Amity Animal Waste	6/1/79	Approved
Clatsop	Astoria Plywood Corp. Astoria Veneer Dryer Washdown Water	6/6/79	Approved
Multnomah	Wacker Chemical - Portland Waste Water Treatment	6/11/79	Approved
Linn	Teledyne Wah Chang Albany Uranium Recovery Process	6/13/79	Approved
Yamhill	Jenks Hatchery - Tangent Recirculation Lagoon for Scrubber and Drinking Water	6/18/79	Approved

MONTHLY ACTIVITY REPORT

Water Quality (Reporting Unit) — June 1979 (Month and Year)

PLAN ACTIONS COMPLETED - 94, cont'd

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
INDUSTRIAL WASTE SOURCES - continued			
Lane	Weyerhaeuser - Cottage Grove Sand Filter Backwash Water	6/19/79	Approved
Linn	Bohemia, Inc. - Brownsville Barker Water Recirculation	6/21/79	Approved
Washington	Tektronix, Inc. - Beaverton Belt Filter for Sludge Dewatering	6/25/79	Approved
Clatsop	Dan M. Kelly Dairy Astoria, Animal Waste Holding Tank	6/29/79	Approved
Tillamook	Louis Aufdermauer Tillamook, Animal Waste	6/29/79	Approved
Tillamook	Joe A. Schriber - Tillamook Animal Waste	6/29/79	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality (Reporting Unit) — June 1979 (Month and Year)

SUMMARY OF WATER PERMIT ACTIONS

	Permit Actions Received				Permit Actions Completed				Permit Actions Pending		Sources Under Permits		Sources Reqr'g Permits	
	Month		Fis.Yr.		Month		Fis.Yr.							
	*	**	*	**	*	**	*	**	*	**	*	**	*	**
Municipal														
New	0	1	4	8	0	0	2	5	1	5				
Existing	8	0	0	1	0	0	0	2	8	0				
Renewals	1	0	63	10	3	2	52	14	37	3				
Modifications	0	0	15	0	0	0	18	1	3	0				
Total	9	1	82	19	3	2	72	22	49	8	245	85	254	90
Industrial														
New	3	1	18	16	1	0	18	22	5	4				
Existing	1	0	1	0	0	0	9	0	4	0				
Renewals	7	0	78	15	10	1	97	25	46	1				
Modifications	1	0	4	3	1	0	7	3	3	0				
Total	10	1	101	34	12	1	131	50	58	5	410	133	419	137
Agricultural (Hatcheries, Dairies, etc.)														
New	1	0	3	8	0	1	4	6	2	0				
Existing	0	0	0	0	0	0	0	0	0	0				
Renewals	0	0	1	1	0	0	1	2	0	1				
Modifications	0	0	0	0	0	0	0	0	0	0				
Total	1	0	4	9	0	1	5	8	2	1	62	22	64	22
GRAND TOTALS	20	2	187	62	15	4	182	80	109	14	717	240	737	249

* NPDES Permits
** State Permits

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality (Reporting Unit) — June 1979 (Month and Year)

PERMIT ACTIONS COMPLETED (19)

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
Coos	California Shellfish Hallmark Fisheries	6-11-79	Modification Issued
Jackson	Huskey Ind. (Was G.P., White City)	5-30-79	NPDES Permit Issued
Yamhill	Gray & Company Dayton	5-30-79	State Permit Renewed
Clackamas	Mollalla Sand & Gravel Industrial Waste	6-11-79	NPDES Permit Renewed
Lane	Robert Kinyon Fif Cove Sanitation District	6-11-79	State Permit Renewed
Linn	Crown Zellerbach Corp. Lebanon	6-11-79	NPDES Permit Renewed
Benton	E.P.A. Western Fish Toxicology Research Facility	6-11-79	NPDES Permit Renewed
Multnomah	GATX Oil Terminal	6-11-79	NPDES Permit Renewed
Lincoln	City of Yachats Sewage Disposal	6-11-79	NPDES Permit Renewed
Clackamas	Crown Zellerbach Corp. Estacada	6-11-79	NPDES Permit Renewed
Benton	Northside Lumber Wood Products	6-11-79	NPDES Permit Renewed
Jackson	Medford Water Commission Water Filtration Plant	6-11-79	NPDES Permit Renewed
Deschutes	Central Oregon Community Col. Sewage Disposal	6-13-79	State Permit Renewed
Polk	Elliott Farms Animal Waste	6-13-79	State Permit Issued

MONTHLY ACTIVITY REPORT

Water Quality (Reporting Unit) — June 1979 (Month and Year)

PERMIT ACTIONS COMPLETED - 19, cont'd

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
Sherman	City of Moro Sewage Disposal	6-13-79	NPDES Permit Renewed
Yamhill	City of Newberg Sewage Disposal	6-13-79	NPDES Permit Renewed
Clatsop	Bumble Bee Seafoods Elmore	6-25-79	NPDES Permit Renewed
Clatsop	Bumble Bee Seafoods Hanthorne	6-25-79	NPDES Permit Renewed
Lane	Cascade Resins Cooling Water	6-25-79	NPDES Permit Renewed

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — June 1979 (Month and Year)

PLAN ACTIONS COMPLETED (8)

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
Grant	Monument Disposal Site New Landfill Site Operational Plan	05/09/79*	Approved
Curry	Western State Plywood New Wood Waste Site Operational Plan	06/04/79	Letter Authorization Issued
Coos	Mel Christianson and Faye Roberts New Wood Waste Site Operational Plan	06/12/79	Letter Authorization Issued
Lane	Short Mountain Existing Landfill Site Leachate Control Plan	06/12/79	Conditional Approval
Baker	Richland Landfill New Landfill Site Operational Plan	06/20/79	Conditional Approval
Baker	Halfway Disposal Site New Landfill Site Operational Plan	06/20/79	Conditional Approval
Coos	Doyle Williams Landfill Existing Demolition Site Operational Plan	06/25/79	Conditional Approval
Tillamook	Tillamook County Existing Landfill Site Expansion Plan	06/29/79	Conditional Approval

* Not reported last month

DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL PROGRAMS

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — June 1979 (Month and Year)

SUMMARY OF SOLID AND HAZARDOUS WASTE PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sites Under Permits	Sites Reqr'g Permits
	Month	Fis.Yr.	Month	Fis.Yr.			
General Refuse							
New	1	5		3	4		
Existing		1		4	2		
Renewals	6	41		22	17		
Modifications	5	25	5	20	10		
Total	12	72	5	49	33	168	170
Demolition							
New	1	2		3	1		
Existing		1			1		
Renewals		2		3			
Modifications		7		3	5		
Total	1	12	0	9	7	21	21
Industrial							
New	2	18	2	17	3		
Existing		1		2			
Renewals	4	19	1	24	5		
Modifications		2	2	10			
Total	6	40	5	53	8	104	104
Sludge Disposal							
New	1	3		1	1		
Existing		1			1		
Renewals		1		5			
Modifications				1			
Total	1	5	0	7	2	12	13
Hazardous Waste							
New Authorizations	26	192	21	186	6		
Renewals							
Modifications							
Total	26	192	21	186	6	1	1
GRAND TOTALS	46	321	31	304	56	306	309

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — June 1979 (Month and Year)

PERMIT ACTIONS COMPLETED - 10

County	Name of Source/Project/Site and Type of Same	Date of Action	Action
Domestic Waste Facilities (5)			
Tillamook	Manzanita Landfill Existing facility	06/21/79	Permit renewed
Tillamook	Pacific City Landfill Existing facility	06/21/79	Permit renewed
Tillamook	Tillamook Landfill Existing facility	06/21/79	Permit renewed
Morrow	Turner Landfill Existing facility	06/26/79	Permit amended
Marion	McCoy Creek Landfill Existing facility	06/26/79	Permit amended
Demolition Waste Facilities - none			
Industrial Waste Facilities (5)			
Curry	Western State Plywood New wood waste site	06/04/79	Letter authorization issued
Coos	Mel Christianson New wood waste site	06/12/79	Letter authorization issued
Benton	Nizich Forest Products Existing wood waste site	06/18/79	Permit amended
Coos	Westbrook Wood Products Existing wood waste site	06/18/79	Permit amended
Wallowa	Boise Cascade, Joseph Existing wood waste site	06/26/79	Permit renewed
Sludge Disposal Facilities - none			

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste (Reporting Unit) — June 1979 (Month and Year)

HAZARDOUS WASTE DISPOSAL REQUESTS

CHEM-NUCLEAR SYSTEMS, GILLIAM CO.

Date	Waste Description: Type	Source	Quantity: Present	Quantity: Future
Disposal Requests Granted (21)				
Oregon (10)				
5	Drain opener	Chemical	120 gals.	none
6	PCB Transformer	Electrical service firm	1 unit	none
6	Pulping green liquor	Paper mill	60,000 gals.	none
15	Assorted chemicals (drug bust)	Police	20 drums	none
22	Sludge consisting of creosote, pentachlorophenol, chemonite wood chips, dirt, etc.	Wood treating plant	--	150 drums/yr.
22	Various old laboratory chemicals	State agency	20 gals.	none
22	Sludge consisting of pentachlorophenol, water, sawdust, dirt,	Wood treating plant	5,000 gals.	none
26	Waste consisting of 5% pentachlorophenol, mineral oil, dirt, sand, wood chips, etc.	Wood treating plant	20 drums	20 drums/yr.
27	Crude arsenous oxide	Fiberglass firm	9,200 lbs.	none
27	Spent etching solution (ammonium persulfate, nitric acid, etc.)	Manufacturer of printed circuit boards	113 drums	12 drums/mo.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste (Reporting Unit) — June 1979 (Month and Year)

HAZARDOUS WASTE DISPOSAL REQUESTS

CHEM-NUCLEAR SYSTEMS, GILLIAM CO.

Date	Waste Description: Type	Source	Quantity: Present	Quantity: Future
Washington (9)				
1	Used PCB capacitors	PUD	2 drums	none
1	Used PCB capacitor	Wood product industry	1 unit	none
6	Pesticides	Wood product industry	98 gallons	none
6	Decomposer graphite with Hg.	Chemical plant	60 drums	none
7	Fiberglass/acetone mixture	Manufacturer of construction materials	4 drums	none
7	Spent etching solution	Chemical Company	4 drums	none
21	Asbestos and obsolete laboratory chemicals	Paper mill	--	80 cu. yds./yr.
26	Spent process solvents consisting of ethyl ether, dioxane & perchloroethylene	Pharmaceutical Company	30 drums	30 drums/year
26	Pesticide wastes	Federal agency	906/5-gal. cans	none
California (1)				
20	PCB transformers	Federal agency	2 units	none
Montana (1)				
20	Heavy metal sludge	Manufacturer of power transmission equipment	4 drums	none

THE HEARING OFFICER'S CONTESTED CASE LOG
WAS NOT AVAILABLE AT THE TIME OF PRINTING.
IT WILL BE INCLUDED NEXT MONTH.

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item C, July 27, 1979, EQC Meeting

TAX CREDIT APPLICATIONS

Director's Recommendation

It is recommended that the Commission issue Pollution Control Facility Certificates to the following applicants (see attached review reports):

T-1069	Louisiana-Pacific Corporation
T-1072	Woolley Enterprises, Inc.
T-1076	Mt. Mazama Plywood Company
T-1077	Eugene F. Burrill Lumber Co.
T-1078	Roseburg Lymber Company
T-1079	Willamette Industries
T-1089	Roseburg Lumber Company
T-1090	Roseburg Lumber Company

Michael Downs
for
WILLIAM H. YOUNG

MJDowns:cs
229-6485
7/11/79
Attachments

Proposed July 1979 Totals

Air Quality	$1,479,692
Water Quality	-0-
Solid Waste	898,015
Noise	-0-
	$2,377,707

Calendar Year Totals to Date

Air Quality	$1,953,094
Water Quality	6,015,473
Solid Waste	424,915
Noise	94,176
	$8,477,658

Appl T-1069
Date 5/30/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Louisiana-Pacific Corporation
Columbia Corridor Division
12655 S. W. Center Boulevard, Suite 475
Beaverton, Oregon 97005

The applicant owns and operates a plywood manufacturing plant at Tillamook.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application is ductwork to route veneer dryer emissions to the boiler for incineration prior to discharge. Request for Preliminary Certification for Tax Credit was made on January 12, 1977 and approved on November 14, 1977.

Construction was initiated on the claimed facility in November 1977, completed in October 1978 and the facility was placed into operation in September 1978.

Facility Cost: $79,008.96 (Accountant's Certification was provided).

3. Evaluation of Application

Ductwork was installed to route all veneer dryer emissions to the boiler as under and overfire air. The dryer emissions are incinerated and allow the dryers to comply with the Department's limits.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The primary and only purpose of this project is air pollution control and 100% of the cost is allocable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $79,008.86 with 80% or more allocated to pollution control be issued for the facility claimed in tax credit application no. T-1069.

FASkirvin:cs
(503) 229-6414
May 30, 1979

Appl T-1072
Date 5/14/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Woolley Enterprises, Inc.
Drain Plywood Co.
P. O. Box 578
Drain, OR 97435

The applicant owns and operates a plywood plant at Drain, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a hogged fuel boiler and control equipment. This boiler was installed in order to phase out three wigwam waste burners. The boiler was part of the WWB control strategy agreed to by the Department. The Burley scrubbers were added to comply with boiler emission limits.

Request for Preliminary Certification for Tax Credit for the Burley Scrubbers was made on 2/7/78, and approved on 2/14/79.

Notice of Intent to Construct for the boiler was made on 8/30/71, and approved on 9/21/71. Preliminary Certification for Tax Credit is not required.

Construction was initiated on the claimed facility on 10/21/71, completed on 7/31/78, and the facility was placed into operation on 7/31/78.

Facility Cost: $433,654 (Accountant's Certification was provided).

3. Evaluation of Application

The applicant operated 3 WWB's in 1971. An agreement between the DEQ and the applicant that the WWB's would be phased out and a hogged fuel boiler installed to use the wood waste. After installation, the boiler did not meet the emission limits. Burley scrubbers were finally proposed and approved by the Department. The boiler now meets all emission limits and the WWB's have been phased out.

The Department acknowledged the company's intention to phase out 3 WWB's at their mills and to install a hogged fuel boiler to use the wood waste in a letter dated 4/13/71. The Department prepared a staff report for the 8/9/71 EQC meeting which outlined the proposal. A Stipulation and Order signed by the company and the Department set forth the WWB phase out schedule and the boiler construction program.

At the time of the agreement between DEQ and the company, hogged fuel had little if any market value and gas and oil were inexpensive as boiler fuel. Although the economics are significantly different today the company made a good faith effort to comply with the Department's rules and the agreement.

4. Summation

A. The scrubbers were constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

The boiler was constructed after receiving approval to construct issued pursuant to ORS 468.175.

A. Facility was not required to have prior approval to construct or preliminary certification.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility was required by the Department and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The entire cost of the Burley scrubber is allocable to pollution control. Its only purpose is control of boiler emissions and it provides no economic gain to the company.

The primary purpose of the boiler, when installed, was to utilize the wood waste burned in the WWBS so that the burners could be phased out. At that time there was no economic advantage to the company. As indicated in the application, the boiler facility

still operates at a loss. However this calculation does not account for the fuel savings of the original oil boiler. Therefore the primary purpose of the hogged fuel boiler is determined to be air pollution control.

The entire cost of the boiler and scrubber is allocable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $433,654 with 80% or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1072.

EGW:jo
(503) 229-6480
5/14/79

Application No. T-1076

Date June 27, 1979

STATE OF OREGON - DEPARTMENT OF ENVIRONMENTAL QUALITY
Tax Relief Application Review Report

---

1. Applicant

Mt. Mazama Plywood Company
411 West Central Avenue
Sutherlin, Oregon 97479

The applicant owns and operates a plywood mill at Sutherlin, Oregon.

Application was made for tax credit for solid waste pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a wastewood fired boiler. It includes the following components:

1. Bumstead-Woolford cinder collector
2. Doyle type water scrubber and clarifier
3. Foster-Wheeler boiler (35,000 lbs./hr. @ 240 psi)
4. One self dumping chip trailer
5. Support components include a truck dumping station and automatic feeding fuel bin.
6. Installation, foundation and support, electrical and miscellaneous.

Request for Preliminary Certification for Tax Credit was made July 11, 1977 and approved February 7, 1978. Construction was initiated on the claimed facility September 1, 1977, completed March 7, 1978, and the facility was placed into operation March 11, 1978.

Facility Cost: $898,015 (Accountant's certification was provided.)

3. Evaluation of Application

The claimed facility is a complete storage and firing system. The boiler is utilizing approximately 64,000 cubic feet of bark per week previously landfilled on company's property. The boiler is operated 24 hours per day 5-1/2 days per week to generate steam. The steam is used as a heat source in two veneer dryers and three hot presses.

4. Summation

A. Facility was constructed under a preliminary certificate of approval issued pursuant to ORS 468.175.

B. Facility was under construction on or after January 1, 1973, as required by ORS 468.165(1)(c).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing solid waste.

D. The facility is necessary to satisfy the intents and purposes of ORS Chapter 459, and the rules adopted under that chapter.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $898,015 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application Number T-1076.

Milan Synak:fw
229-6015
June 27, 1979

Appl T-1077
Date 6/12/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Eugene F. Burrill Lumber Co.
P. O. Box 220
Medford, OR 97501

The applicant owns and operates a sawmill at White City, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of a steam flow meter, smoke meter and recorder to monitor boiler operating parameters.

Request for Preliminary Certification for Tax Credit was made on 7/11/77, and approved on 8/17/77.

Construction was initiated on the claimed facility on 12/77, completed on 6/78, and the facility was placed into operation on 6/78.

Facility Cost: $6,058.00 (Accountant's Certification was provided).

3. Evaluation of Application

This equipment monitors steam flow and in-stack opacity. This allows the boiler operator to make corrections if the opacity nears the Department's limits. The primary purpose is air pollution control.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The primary purpose to this equipment is to allow the boiler operator to maintain continuous compliance with Department's opacity limits. Therefore 100% of the cost is allocatable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $6,058.00 with 80% or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1077.

FASkirvin:jo
(503) 229-6414
June 12, 1979

Appl T-1078
Date 6/21/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Roseburg Lumber Co.
Plywood Plant #4
Box 1088
Roseburg, OR 97470

The applicant owns and operates a plywood plant at Riddle, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of dryer modifications and Burley scrubbers to reduce air flows and capture hydrocarbon emissions before discharge to the atmosphere from six veneer dryers.

Request for Preliminary Certification for Tax Credit was made on 5/17/76, and approved on 8/4/76.

Construction was initiated on the claimed facility on 3/77, completed on 12/16/78, and the facility was placed into operation on 12/18/78.

Facility Cost: $536,458.25 (Accountant's Certification was provided).

3. Evaluation of Application

The dryer modifications and Burley scrubbers enable the veneer dryers to comply with the Department's emission limits.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The only purpose of the Burley scrubbers and dryer modifications is air pollution contorl. Therefore, 100% of the cost is allocable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $536,458.25 with 80% or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1078.

FASkirvin:jl
(503) 229-6414
June 21, 1979

Appl T-1079
Date 6/12/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Willamette Industries
Korpine Division
3800 First National Bank Tower
Portland, OR 97201

The applicant owns and operates a particleboard plant at Bend, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a Carter Day baghouse (Model 16FB8) to control sanderdust emissions.

Request for Preliminary Certification for Tax Credit was made on 12/7/77, and approved on 12/22/77.

Construction was initiated on the claimed facility on 1/1/78, completed on 8/1/78, and the facility was placed into operation on 6/1/78.

Facility Cost: $5,775.70 (Accountant's Certification was not required).

3. Evaluation of Application

This bin vent filter was necessary to separate the two sanderdust bins in case of fire. Both bins were previously controlled by a single filter. A fire in one bin would result in water contamination of both bins and excessive sanderdust emissions. This bin vent will reduce emissions to the atmosphere and solid waste disposal.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. This bin filter is part of an overall bin control system. The only purpose of the system and the filter is air pollution control. Therefore, 100% of the cost is allocatable for pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $5,775.70 with 80% or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1079.

FASkirvin:jo
(503) 229-6414
June 12, 1979

Appl T-1089
Date 7/2/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Roseburg Lumber Co.
Plywood Plant No. 2
Box 1088
Roseburg, OR 97470

The applicant owns and operates a plywood plant at Dillard.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of Burley scrubbers to control emissions from veneer dryers 1, 2, and 5.

Request for Preliminary Certification for Tax Credit was made on May 17, 1976, and approved on August 4, 1976.

Construction was initiated on the claimed facility in February 1978, completed on January 1, 1979, and the facility was placed into operation on March 1, 1979.

Facility Cost: $302,650.47 (Accountant's Certification was provided).

3. Evaluation of Application

The veneer dryers were previously in violation of the Department opacity limits. These scrubbers were installed to meet those limits.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The only purpose of the scrubbers is air pollution control. There is no economic advantage to the company. Therefore, 100 percent is allocable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $302,650.47 with 80 percent or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1089.

FASkirvin:jo
(503) 229-6414
July 2, 1979

Appl T-1090
Date 7/2/79

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Roseburg Lumber Co.
Plywood Plant No. 3
Box 1088
Roseburg, OR 97470

The applicant owns and operates a plywood plant at Green District near Roseburg, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of a Burley scrubber to control emissions from veneer dryer No. 1.

Request for Preliminary Certification for Tax Credit was made on June 7, 1976, and approved on August 4, 1976.

Construction was initiated on the claimed facility in July 1978, completed on February 2, 1979, and the facility was placed into operation on February 5, 1979.

Facility Cost: $116,089.27 (Accountant's Certification was provided).

3. Evaluation of Application

A Burley scrubber was installed to control visible emissions from veneer dryer No. 1. This source now complies with the Department's visible emission limits.

4. Summation

A. Facility was constructed after receiving approval to construct and preliminary certification issued pursuant to ORS 468.175.

B. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

C. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing air pollution.

D. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

E. The primary purpose of this project is air pollution control. There is no economic benefit to the company. Therefore, 100 percent of the cost is allocable to pollution control.

5. Director's Recommendation

Based upon the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $116,089.27 with 80 percent or more allocated to pollution control be issued for the facility claimed in Tax Credit Application No. T-1090.

FASkirvin:jo
(503) 229-6414
July 2, 1979

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. E , July 27, 1979, EQC Meeting

Quiet Area Recommendation: Willamette River Between Eugene and Harrisburg

Background and Problem

On October 25, 1978 the State Marine Board held a public hearing to receive testimony concerning power boat activity on the Willamette River between Eugene and Harrisburg. The hearing was in response to a request from the City of Eugene, and reflected public concern over a commercial "jet" boat operation on this section of the river. Testimony received at the hearing centered on issues of safety and environmental quality. Noise was a focal point of discussion, and the opinion was expressed that "jet" boats threaten the solitude of residents and others who may enjoy the river.

Subsequent to the public hearing, the Director of the Marine Board proposed that the Board recommend that the Environmental Quality Commission designate the Willamette River between Eugene and Harrisburg as a "quiet area" pursuant to OAR 340-35-015(28). The Board declined to adopt the Director's recommendation, but instead directed that the hearings report and staff report be submitted to the Department for consideration without recommendation.

Following the action of the Marine Board, the Department received a petition requesting that a section of the Willamette River in Eugene (Ferry St. Bridge to Belt Line Bridge) be designated a "quiet area". This petition was sponsored by the Greenpeace organization and contained in excess of 800 signatures. The petition stated the use of motorized boats on the river threatened "the quality of this valuable resource." Petitioners noted that "motorized boats produce noise which disrupts the serenity of the area, disturbs wildlife, and interferes with the river experience of recreationists who are seeking a respite from the stresses of urban life." Petitioners therefore requested that the section of the river be designated a quiet area "so as to preserve, protect and enhance this essential resource."

Concern about motorboat operation on the Willamette River between Eugene and Harrisburg began last fall when an excursion boat service was initiated. The service utilizes a 48 passenger motorboat and operates between the Valley River Inn in Eugene and Harrisburg. Organized opposition to motorboat activity on the river coincided with the initiation of the commercial service, but the scope of the concern also includes recreational motorboat operation.

Evaluation and Alternatives

The Commission rules for "quiet areas" are found in several rule sections. Oregon Administrative Rules 340-35-015(28) states:

> [A **"quiet area"**] means any land or facility designated by the Commission as an appropriate area where the qualities of serenity, tranquility, and quiet are of extraordinary significance and serve an important public need, such as, without being limited to, a wilderness area, national park, state park, game reserve, wildlife breeding area or amphitheater. The Department shall submit areas suggested by the public as quiet areas, to the Commission, with the Department's recommendation.

In section 340-35-030(1)(d) motor vehicles (including motorboats) are limited to 60 dBA at the boundary of a quiet area as specified in Table E of the rules (attached). Motor vehicles operating off-road for non-recreational purposes are exempt, so this standard would apply to recreational motor boats, but not commercially operated boats.

Section 340-35-035(1)(d) specifies that industrial or commercial noise sources, which would include a commercial boat operation, must not exceed Table I (attached) of the rule when measured within the quiet area and not less than 400 feet from the noise source. The standards in Table I are approximately 5 dBA more restrictive than the standards applied to other commercial sources not in designated quiet areas.

A field inspection of that portion of the Willamette River designated in the petition and the Marine Board action was conducted by Department staff in June. A canoe was paddled from the Ferry Street Bridge in Eugene to Harrisburg, a distance of about 21 miles, to observe and measure activities along the route.

Major sources of noise measured along this section of the river are on the following page.

Portions of the river section from Eugene to a point north of the Belt Line Bridge are influenced by external noise that causes an ambient level in excess of the standards in Table I of the rules. North of the Belt Line Bridge it may be expected that the ambient levels comply with Table I. Although the power line and the irrigation pump are listed above as major noise sources, when measured 400 feet from the source as specified in the rule, they will not exceed the standards of Table I.

Major Sources of Noise

Source	Level, dBA
Motor Vehicle Traffic - Bridges	65-75
Ferry St. Bridge	
Valley River Bridge	
Belt Line Bridge	
Rock Crusher & Trucks	
Crusher	60
Trucks	78
Electric Power Line	
Large Line at Station 172	50-52
Irrigation Pump	
Fifty feet from pump	54-55
Excursion Boat (Lefler's)	
100-200 Feet	73
Approx. 200 yards	60
Ambient - No major noise sources	
Mile Station 180 - North Eugene (Traffic and Trains in Background)	46
Mile Station 177 - North of Belt Line	
Rapids	42-46
Calm	38

Typical emission levels for boats are from approximately 70 dBA to the presently regulated limit of 84 dBA at 50 feet. If a section of the river were designated a quiet area under existing rules, recreational motorboats would probably exceed the ambient standards of Table E (60 dBA) and it would be necessary to prohibit all recreational motorboats in the quiet area to ensure compliance with the standards. Although some recreational motorboats operate on this river section, none were observed during the field inspection. It is claimed that motorboat activity is very low and most recreational activity is with "drift" boats and other non-motorized craft.

Although the present commercial boat service operates at about the same noise level as an average recreational boat, this operation would probably comply with quiet area standards because of the standards and measurement procedures that apply to commercial sources. The quiet area rule for commercial sources requires that measurements be taken no closer than 400 feet from the noise source. The standards in Table I are in terms of statistical noise levels over a one hour period. As the boat travels at approximately 20 miles per hour, it has been calculated that 60 dBA will not be exceeded for the 36 seconds (1% of an hour) required by the L_1 statistical standard.

The State Marine Board has determined that the section of the Willamette River that is within this proposed quiet area is "navigable" for Coast Guard and Corps of Engineers purposes. The Board has authority to adopt reasonable regulations as to noise, speed, etc., for commercial operations, but preemptive federal law prevents the Board from prohibiting the commercial activity. The Marine Board does have authority to prohibit recreational motorboats on certain waters of the state, but the Board has not discussed that option in this context, and may be reluctant to prohibit recreational motorboats without similar restrictions on commercial motorboat operations.

Legal counsel has advised staff that any quiet area designation pursuant to existing noise control regulations should be accomplished through rulemaking procedures. Therefore, any quiet area should not be designated without providing an opportunity for a hearing.

Summation

Drawing from the background, evaluation and alternatives presented in this report, the following facts and conclusions are offered:

1. The Department has been requested to recommend the Willamette River between Eugene and Harrisburg be designated a "quiet area" as provided for in the noise control regulations.
2. A presently operated commercial excursion boat is likely to comply with the quiet area noise standards with neither change in operation or equipment.
3. Preemptive federal laws for "navigable" waters would probably prevent the prohibition of any commercial boat operations on this section of the river.
4. Recreational motorboats would probably exceed the "quiet area" standards of the noise control regulations.
5. The State Marine Board could prohibit recreational motorboats from this river section, however, may be reluctant to place restriction on recreational use without identical controls on commercial use.

6. Portions of the river section near Eugene are not acceptable for "quiet area" designation due to high ambient noise levels caused by motor vehicles and industrial sources.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission not designate the Willamette River between Eugene and Harrisburg a quiet area as provided by the noise control regulations. However, if the Commission elects to consider designation of this river section as a quiet area, it is recommended that the Commission authorize public hearings to take testimony on the proposed designation in order to include any quiet area designation within the adopted administrative noise control rules.

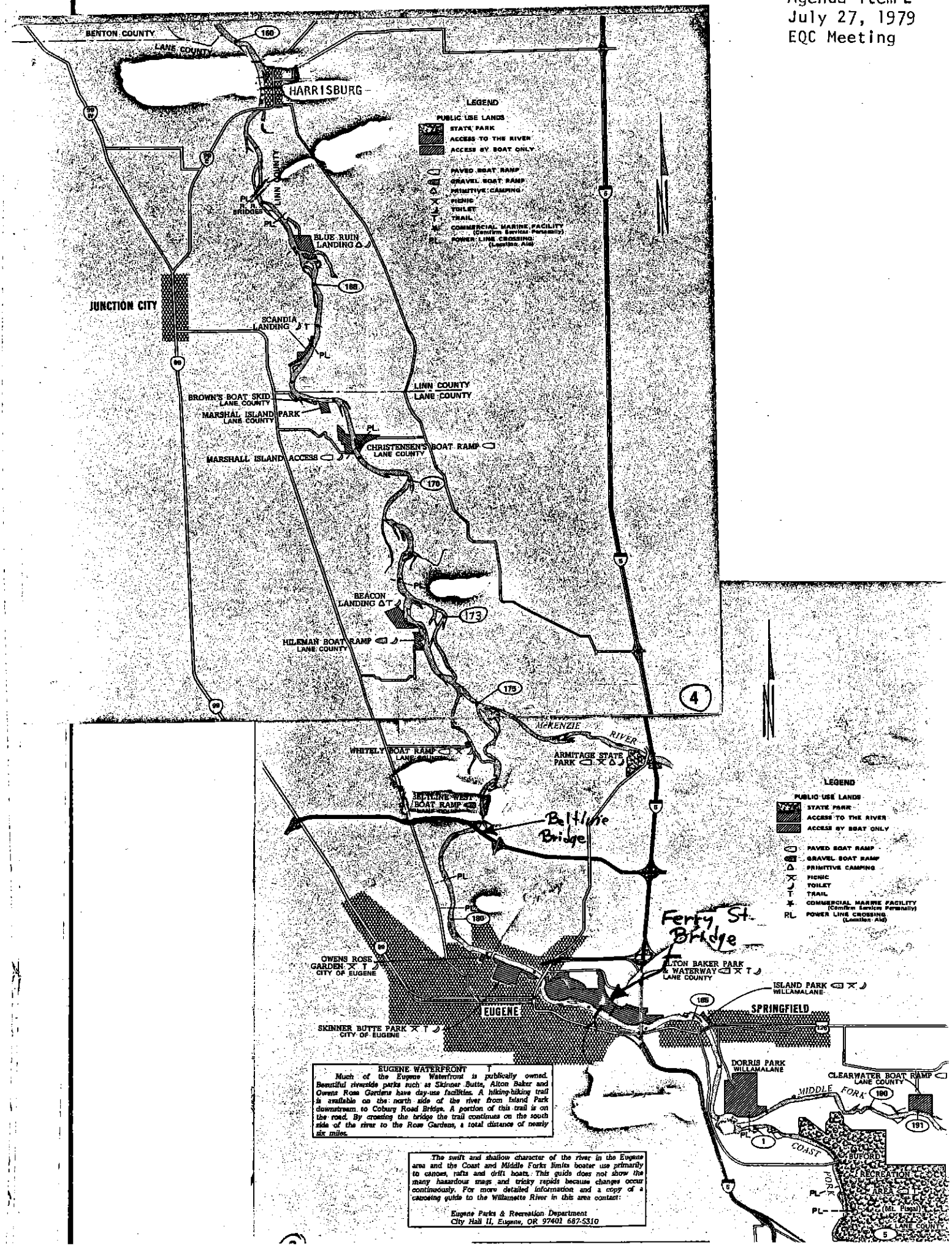
Michael Downs
for
WILLIAM H. YOUNG

John Hector:pw
(503)229-5989
7/9/79
Attachments (3)

1. Map of Willamette River - Eugene to Harrisburg
2. Sample of Greenpeace Petition
3. OAR 340-35, Tables E and I

Willamette River: Eugene - Harrisburg

Attachment 1
Agenda Item E
July 27, 1979
EQC Meeting



Attachment 2
Agenda Item E
July 27, 1979
EQC Meeting

Sample of Greenpeace Petition

GREENPEACE FOUNDATION
454 WILLAMETTE
EUGENE, OREGON 97401
503-687-8121

PETITION

to be submitted to the Oregon Department of Environmental Quality (DEQ)

We, the undersigned, are concerned about the Willamette River. The continued use of motor boats on that section of the river which lies within the city limits of Eugene poses a threat to the quality of this valuable resource. In addition to having a harmful impact on the fish and wildlife of the river and increasing bank erosion, motor boats produce noise (generally in excess of 80 decibels) which disrupts the serenity of the area, disturbs wildlife, and interfers with the river experience of recreationists who are seeking a respite from the stresses of urban life.

We therefore urge the DEQ to designate that section of the Willamette River which extends between the Ferry Street Bridge and Belt Line Bridge a QUIET ZONE CORRIDOR, so as to preserve, protect and enhance this essential resource.

	NAME	ADDRESS
1.	Mary Jensen	47818 McKenzie Hwy, Vida.
2.	Debbie Fairchild	1923½ N 5th Springfield
3.	DAVID	1736 W Broadway
4.	[illegible]	1446 Lawrence
5.	Marie Davis	546 W 8th Eugene Oregon 97401
6.	Ruby Booth	545 Madison
7.	Shoshana Ibbotson	1734 W. Broadway Eug OR
8.	Kendra Morrigan	1736 W Broadway Eug. OR
9.	[illegible]	934½ W. 4th Eugene. 97402
10.	Fred Harris	1628 High Eugene or 97401
11.	John Queen	609 E. 14th Eugene 97401
12.	Brian Lueker	1804 18th Agate 97403
13.	Jason Bowers	1804 Agate
14.	Danny Parker	2329 Park 97405
15.	Clarann McPhail	170½ Hilliard Lane

Attachment 3
Agenda Item E
July 27, 1979
EQC Meeting

Quiet Area Noise Standards
OAR 340-35

TABLE E

Ambient Standards for Vehicles Operated Near Noise Sensitive Property

Allowable Noise Limits

Time	Maximum Noise Level, dBA
7 a.m. - 10 p.m.	60
10 p.m. - 7 a.m.	55

TABLE I

Industrial and Commercial Noise Source Standards for Quiet Areas

Allowable Statistical Noise Levels in Any One Hour

7 a.m. - 10 p.m.	10 p.m. - 7 a.m.
L_{50} - 50 dBA	L_{50} - 45 dBA
L_{10} - 55 dBA	L_{10} - 50 dBA
L_{1} - 60 dBA	L_{1} - 55 dBA

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item No. G, July 27, 1979, EQC Meeting

Variance Request - Request by Curry County for a variance from rules prohibiting open burning dumps OAR 340-61-040(2)(c)

I. Background

September 22, 1978, a variance was granted to Curry County to continue operation of its open burning dumps at Brookings and Nesika Beach until August 1, 1979. The variance was granted to allow Curry County time to establish an acceptable regional landfill.

Since the variance was granted, Curry County has reached agreement with a private corporation, Brookings Energy Facilities, Inc., to establish a regional solid waste disposal facility near Brookings. The proposed facility will consist of two Consumat incinerators, with heat recovery expected within the next two years, and a new site for disposal of the ash residue. This facility is in accordance with the adopted Curry County Solid Waste Management Plan, and is being partially funded by a construction grant from the Department. Because of the difficulty in finding an acceptable location for the incinerators, the construction has been delayed. The foundations have been laid, and the incinerators are on site and expected to be assembled by August 1, 1979. Curry County anticipates having the incinerators and new landfill operational by no later than October 1, 1979.

ORS 459.225 provides authority for the Commission to grant variances from Solid Waste regulations, under certain conditions which will be discussed below. The variance being requested is from Oregon Administrative Rules (OAR) 340-61-040(2)(c), which prohibits the operation of open burning dumps.

II. Alternatives and Evaluations

Brookings Disposal Site. The Brookings site is nearing capacity. Curry County estimates that the site will be full if more than ten (10) days of garbage accumulates without burning. The nearest acceptable landfill is in Crescent City, California, approximately

25 miles away. This site may not be available because of prohibitive fees or restrictive P.U.C. requirements in California. The nearest acceptable Oregon site is Port Orford, about 55 miles away. In the Department's opinion, for the short period of the extension, it would be preferable to continue operation of the existing dump.

Nesika Beach Site. The Nesika Beach site, located near Gold Beach, is also approaching capacity. The nearest acceptable site is about 25 miles away in Port Orford.

For the two months necessary to finish the new Brookings site, the Department recommends continuation of the existing dump operation. The Port Orford site is designed to serve a smaller community than Gold Beach, and would fill faster than expected if the Nesika Beach site were closed August 1. The Port Orford site is needed to serve the sparsely populated north county area.

Conditions under which a variance to Solid Waste regulations can be granted.

Under Oregon Revised Statutes (ORS) 459.225, the Commission may grant a variance to solid waste regulations only if the following conditions exist:

1. The conditions in existence are beyond the control of the applicant.

2. Strict compliance would be unreasonable, burdensome or impractical.

3. Strict compliance would result in closure of a site with no alternate facility available.

In the Department's opinion, closure of the two sites on August 1 would be impractical, with the new site due to open by no later than October 1. Re-directing the public and private haulers for a maximum of two months would be disruptive.

III. Summation

1. Curry County was issued a variance to continue operation of the Brookings and Nesika Beach open burning dumps. This variance to OAR 340-61-040(2)(c) prohibiting open burning dumps is due to expire August 1, 1979.

2. Start of construction of a new regional facility was delayed because of difficulty in finding an acceptable site. Construction is well underway, and is expected to be completed by October 1,1979.

3. Alternate disposal sites are available for the two months interim. Use of these sites is impractical, in the Department's opinion.

4. Under ORS 459.225, a variance to solid waste regulations can be granted by the Commission if the alternatives available are impractical.

IV. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a variance be granted to Curry County to continue operation of the Brookings and Nesika Beach open burning dumps until October 1, 1979.

Michael Downs
for
WILLIAM H. YOUNG

Barbara A. Burton
672-8204

BAB:ml

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item H, July 27, 1979, EQC Meeting

Consideration of Petition from Deschutes County Commissioner and Interested Persons to Promulgate, Amend, or Repeal Rules on Subsurface Sewage Disposal (OAR 340-71-030(1)(c)(A&B) in the LaPine Area of Deschutes and Klamath Counties

Background

Denial rates for standard subsurface sewage disposal systems in the LaPine area through the spring and early summer of 1979 have been about 60 percent. Almost all of the denials have been based upon high water tables as indicated by evidence of soil mottling. In some areas, though soil mottling shows high water table, domestic water wells show the permanent water table to be much deeper. As a result, the use of mottling as an indicator of water table is being disputed by residents of the LaPine area.

In response to the problem of many denials, a petition has been filed pursuant to Oregon Administrative Rules (OAR) 340-11-047(1), requesting that OAR 340-71-030(1)(c)(A&B) be amended or repealed so that criteria other than soil mottling can be used for determination of water table levels. (The petition and its cover letter are attached as Attachment A and OAR 340-71-030(1)(c)(A&B) is attached as Attachment B).

Evaluation

During the week of June 25, 1979, Dr. Robert Paeth, the Department's soil scientist, conducted an intensive investigation of the soil and groundwater conditions in the LaPine area. This investigation determined that much of the soil mottling in the LaPine area could be tied to a temporary, perched water table rather than a permanently perched water table. This would readily explain discrepancies between domestic well water levels and soil mottling. Further, existing subsurface rules allow systems to be installed when a temporary perched table comes within 24 inches of the ground surface. If it is a permanent water table, the distance must be not less than 60 inches from ground surface (requires capping fill).

During the week of July 16 to 20, 1979, Dr. Paeth will again be in the area together with representatives of the Department of Water Resources and Deschutes County Health Department to continue evaluation of soil mottling, presence of restrictive layers, and occurance of temporary and permanent ground water levels.

A letter (Attachment C) has been sent to Deschutes County Health Department*, informing them of the temporary water table and indicating how the temporary water table can be recognized. Department personnel working in Klamath County have also been informed. The Department believes this should significantly reduce the denial rate.

Potential Alternatives

1. Accept the petition and direct the Department to initiate rule making proceedings to amend OAR 340-71-030(1)(c)(A&B) and change the criteria for determing water table levels.

   While the soil mottling may have some limitations, the Department believes it is the best way to accurately determine water table. Actual measurement of water table level is not practicable because the level fluctuates over an annual cycle and over much longer periods. There is no way that direct measurement of the water table can be reliable without almost continuous observation over many years. Also, the Department believes that other conceivable criteria or combinations of criteria will not be a reliable means of protecting water tables either.

   The Department believes that discrepancies between soil mottling and observed water table levels can be explained and accounted for by soils investigations as conducted in LaPine by Dr. Paeth. Once these discrepancies are explained, generally, they can be resolved within the existing Rules.

2. Deny the petition and direct the Department to continue its soil investigations in the LaPine area.

   The Department believes it may have resolved many of the problems associated with subsurface sewage disposal permits in the LaPine area as a result of Dr. Paeth's soil investigations. Soil mottling is a useful and necessary tool for evaluating subsurface sewage disposal suitability. Without it, the Department will be at a distinct disadvantage and may not be able to assure adequate separation between the disposal trench and the high water table. Without adequate separation, contamination of groundwater can occur. In LaPine, where domestic water is almost always derived from individual, shallow wells, protection of groundwater is of paramount importance.

* Deschutes County Health Department contracts to DEQ for subsurface work in Deschutes County.

Summation

1. The Department has received a petition from a Deschutes County Commissioner requesting that OAR 340-71-030(1)(c)(A&B) be repealed or amended.

2. OAR 340-71-030(1)(c)(A&B) allows the Department or its authorized representatives to use soil mottling as an indicator of high water table.

3. There has been a relatively high (60%) denial rate for subsurface sewage disposal systems in the LaPine area. Most of these denials have been due to high water table as indicated by soil mottles. Because of discrepancies between water levels observed in wells and high water levels predicted by soil mottles, use of mottles is highly disputed in LaPine.

4. Recent soil and groundwater investigations conducted by Dr. Robert Paeth have revealed that much of the soil mottling in the LaPine area can be attributed to a temporary, perched water table rather than a permanent table.

5. Allowable separation distances between the disposal trench and the water table is substantially less when the water table is temporary rather than permanent. Because of this, approval rates for subsurface systems should be significantly higher.

6. The Department believes soil mottling is a useful and necessary tool for determining high groundwater levels. While there have been discrepancies found, these have been and can continue to be resolved through soil investigations.

Director's Recommendation

It is recommended that the Environmental Quality Commission deny the petition. It is further recommended that the Commission direct the Department to continue its soil and groundwater investigations in the LaPine area to determine where soil mottling is an indication of temporary groundwater or permanent groundwater levels and report back to the Commission in September 1979.

Michael Downs
for
WILLIAM H. YOUNG

Attachments:
A. Petition
B. Applicable Rules
C. Letter to Deschutes County

Richard Nichols:em
382-6446
7/11/79

ATTACHMENT A

DESCHUTES COUNTY

BOARD OF COMMISSIONERS

BEND, OREGON 97701
(503) 382-4000 ext. 200

Albert A. Young Clay C. Shepard Robert C. Paulson

June 19, 1979

State of Oregon
Environmental Quality Commission
796 Winter, N. E.
Salem, Oregon 97310

Dear Sirs:

It appears to me, and to most of the people in the La Pine area of Southern Deschutes County, that there is an urgent need to revise or reinterpret the DEQ rules for the permitting of septic tanks and drainfields in this area.

As a result of our concerns, we have had several meetings with Bill Young of the State DEQ Office, and also Dick Nichols of the Bend DEQ Office. To date, we have been unsuccessful in initiating any changes in the approval methods for our systems. Consequently, I am hereby submitting a Petition requesting that you initiate a review of our concerns and the rules which we must work under. At this point, we are not sure if we need a rule amendment, repeal and new adoption, or merely a reinterpretation. However, we are requesting that you investigate the matter at the EARLIEST POSSIBLE DATE, and either set a public hearing whereby all persons can express their concerns and submit information, or request that information be submitted to you for exploration prior to instituting a change.

We are very concerned that any further delay in revision of these rules will cause many of the citizens of this area to be forced to go an entire "building season" without being able to get a permit for septic tanks and drainfields, even though it appears that they could install one without any short-term or long-term damage to the area's domestic water supply. We are currently experiencing permit denials on roughtly 60% of the applications submitted, including those where the actual identifiable water level is twenty or thirty feet below the ground surface.

At this time, according to the local DEQ Office, the sole criteria for approving or denying permits in this area relates to the existence of "mottling" in the soil. If the soil shows mottling, the permit is denied, even in cases where it is demonstrated that the existing well water is 15 to 30 feet below the surface and has never been above that in the past 20 years. Even the DEQ officials seem to feel that this system is not sufficient.

Even though I am calling for a change in how permits are issued, be assured that I and all of the people in the La Pine area agree to the following points:

1. We do not want to take any actions which will jeopardize the short-term or long-term water quality of the area.

2. We agree that there should be adequate separation between the bottom of a drainfield trench and the top of the high water table (generally assumed to require a two to four foot separation).

3. We agree that more scientific information is needed to help make better determinations regarding permit applications and protection of the area's water quality.

Attached is a sheet which specifically outlines the information which is required to initiate a rule change, etc., as required by the DEQ Rules of General Applicability and Organization, Division 11, OAR 340-11-047(1).

Please contact me if you have need for additional information. I would greatly appreciate your prompt attention to this difficult issue.

Sincerely,

Robert C. Paulson, Jr.

ROBERT C. PAULSON, JR.
County Commissioner

RCP:jlc

enc.

cc: Bill Young, DEQ
Betty Ahern, Realtor
Representative Tom Throop
Senator Fred Heard
Vic Russell
Marvin Russell
Kay Nelson
Floyd Welch
C. W. Reeve
Daniel E. Van Vactor, Esq.
Dick Rasmussen
Pat Gisler
John Hopper, La Pine Incorporation Committee

P.S.: If it is more convenient to consider this request at the July 27 EQC meeting, that is acceptable.

PETITION TO PROMULGATE, AMEND OR REPEAL RULE

OAR 340-11-047

340-11-047(1) The rule Petitioner requests the Commission to promulgate, amend or repeal.

(a) OAR 340-71-030(1)(d) (A & B). The application of these sections seems to cause continuous problems in the La Pine area because of the apparent inconsistent relationship between the mottling and high water levels. Mottling does not appear to be a reasonable method of determining the seasonal, annual, or even long-term high water level, See attachment "A."

(b) Ultimate facts in sufficient detail to show the reasons for adoption, amendment or repeal of the rule.

1. Many applications for subsurface sewage disposal suitability evaluations have been denied in the La Pine area. The denials have been based upon mottling of soils. Actual water table levels (as observed by water well measurements) are known to be much deeper than mottling indicates. The use of mottling as an indicator of high water table levels appears to be erroneous in some areas of La Pine. A list of lots denied permits, and related information is available on request.

2. In lieu of exclusive use of mottling as the indicator of high water table levels, the petitioner believes DEQ should delineate a specific combination of criteria to be used in Southern Deschutes and Northern Klamath Counties. Some or all of the following might be considered part of the permit acceptance criteria:

   A. Winter water level checks.

   B. Measurement of adjacent well levels.

   C. Soil conditions.

   D. Lot sizes.

   E. Augering to determine the existent water table around the disposal site (at different times of the year if necessary).

   F. Location and definition of areas (terraces?) where mottling is not a true indicator of actual water level.

3. Additional studies and data gathering should be initiated as soon as possible so that future determinations can be based on sound knowledge of what in fact the effects of local disposal systems are. Such studies could include the use of test wells and pollution monitoring, as well as dissection and analysis of existing disposal systems to see how they function.

4. Alternative systems should be developed and initiated. These systems must be at competitive costs and relatively easy to maintain on an individual basis.

(c) All propositions of law to be asserted by the Petitioner. (None asserted).

(d) Sufficient facts to show how Petitioner will be affected by adoption, amendment or repeal of the rule.

1. The current system results in roughly 60% turn-down for applications.

2. Of the thousands of lots in the area which were approved through the County planning process, the current permit approval system is forcing them to be devalued from perhaps $10,000 per lot to $2,000 per lot.

3. The loss in property evaluation is an obvious handicap to the property owners, and if it continues, it will be a financial loss to the County, due to a reduction in taxes.

(e) Name and address of Petitioner and any other persons known by the Petitioner to have special interest in the rule sought to be adopted, amended or repealed.

ROBERT C. PAULSON, JR.
Deschutes County Commissioner
Courthouse Annex
Bend, Oregon 97701

BETTY AHERN, Realtor
52427 River Pine Road
La Pine, Oregon 97739

REPRESENTATIVE TOM THROOP
State Capitol Building
Salem, Oregon 97310

VIC RUSSELL
Vic Russell Excavating-Construction
La Pine, Oregon 97739

MARVIN RUSSELL
51636 Pengra-Huntington Road
La Pine, Oregon 97739

KAY NELSON
P. O. BOX 477
La Pine, Oregon 97739

FLOYD WELCH
Seed Road
La Pine, Oregon 97739

DICK RASMUSSEN
52755 Huntington Road
La Pine, Oregon 97739

PAT GISLER
63333 Old Deschutes Road
Bend, Oregon 97701

JOHN HOPPER
La Pine Incorporation Committee
16023 Holiday Lane
La Pine, Oregon 97739

DANIEL E. VAN VACTOR, ESQ.
VAN VACTOR, KOLB & FRANCIS
P. O. Box 343
Bend, Oregon 97701

C. W. REEVE
Seed Road
La Pine, Oregon 97739

(a) An impervious layer is less than thirty-six (36) inches below the surface of the ground. A twelve (12) inch separation must be maintained between the impervious layer and the bottom point of the effective sidewall of the disposal trench.

(b) A restrictive layer is less than thirty (30) inches below the surface of the ground. A six (6) inch separation must be maintained between the restrictive layer & the bottom point of the effective sidewall of the disposal trench.

(c) An area where the highest level attained by a permanent water table or permanently perched water table will be within four (4) feet of the bottom point of the effective sidewall of the disposal trench, except in defined areas that have been the subject of a groundwater study and where the Department has determined that degradation of groundwater supplies or health hazards would not be caused. Diagram 7A shows an acceptable design where such water table will be five (5) feet or more but less than Five and one-half (5-1/2) feet below the surface of the ground. Water table levels may be predicted during periods of dry weather utilizing one of the following criteria:

(A) Where water movement is laterally restricted, mottling consisting of various shades of gray and red specks, splotches, and/or tongues throughout the soil caused by alternated saturation and desiccation, or dark, highly organic layers of grayish low chroma layers may be found at the highest seasonal level of the water table. Some soils including, but not limited to, certain salt affected soils and low iron bearing soils may not show signs of mottling even though they become saturated under laterally restrictive conditions for extended periods of time.

(B) Where water movement is laterally unrestricted, and mottling is not evident, predictions of the highest seasonal level of the water table where possible shall be based on past observations by the Director or his authorized representative. If such observations have not been made, or are not conclusive, application for a permit shall be denied until appropriate observations can be performed as prescribed in subsection (1)(c)(C) of this section.

(C) Where the Department or its authorized representatives require, water level investigations shall be performed during:

(i) The winter months where mottling is present, and exact confirmation of water level is desired, or where water levels are expected, and no mottling is present or where parent material or other factors may be causing mottling.

(ii) July, August, and September in irrigated areas where elevated ground water levels are expected or where parent materials or other factors may be causing mottling.

(iii) Periods of runoff in artificially drained areas which may be subject to influence from runoff.

(d) An area where the highest level attained by a temporarily perched water table would be less than twenty-four (24) inches below the surface of the ground or would cause temporarily perched ground water to come in contact with the absorption facility's effective sidewall. Water table levels may be predicted during periods of dry weather utilizing criteria set forth in subsections (1)(c)(A), (B), and (C) of this section.

(e) Slope exceeds twenty-five (25) percent or the values in Tabel 4A.

(f) Where coarse grain material is located within thirty-six (36) inches of the natural ground surface and the installation and utilization of a disposal trench would cause degradation of the quality of public waters. A minimum separation distance of eighteen (18) inches shall be maintained between coarse grained materials and the bottom of the trench. Diagram 7A shows an acceptable design where coarse grain material is thirty (30) or more inches but less than thirty-six (36) inches below the natural ground surface.

(g) An area where an accumulation of surface water will occur for a period of two (2) consecutive weeks or longer.

(h) An area that has been filled or the soil has been modified, except in subdivisions or lots approved by the appropriate governing body prior to January 1, 1974, lots or parcels in rural zoning classifications designated by the county and approved by the Department, or individual lots for repair of existing systems, provided in the case of the aforesaid subdivisions or lots approved prior to January 1, 1974, the native soil and fill material shall consist of weakly structured soils such as sand, sandy loam, or loamy sand.

ATTACHMENT C

July 3, 1979

Mr. John Glover
Deschutes County Department of Sanitation
Courthouse Annex
Bend, OR 97701

SSSD - Deschutes County
General

Dear John:

This letter will summarize the meeting on Friday, June 29, 1979, in Bend between Bob Paeth, Randy Rees and me of the Department and Carol Beardsley and you of Deschutes County.

At that meeting Bob Paeth described the findings of his week-long investigation of the LaPine area relative to subsurface sewage disposal. These findings are as follows:

1. There are essentially three terrace levels in the LaPine area. These terraces will be described as the first, second and third terraces. Further, the second terrace can be separated into two different levels, hereafter described as 2a and 2b.

2. The first terrace is essentially that land along the rivers and can be considered as flood plain. It is unlikely that any areas on this level would be suitable for a standard septic tank and drainfield.

3. The third terrace is the high ground.

4. The second terrace has two levels which are situated between the first and third levels.

5. The various terraces can be distinguished by observation of soil profiles. Bob Paeth described each of these soil profiles at the meeting. You should have notes describing the profiles.

6. The soil profile for the third terrace shows a restrictive layer which will perch a temporary groundwater table. This layer should exist in all cases on the third terrace.

7. In some, but not all cases, there is also a restrictive layer in the second terrace soil profiles.

8. Department regulations for subsurface sewage disposal allow approval of a system in areas where temporary perched groundwater is not closer than 24 inches from the surface.

Based upon these findings, effective June 29, 1979, Deschutes County can consider that low chroma mottles found on the third terrace are associated with a temporary perched water table and can approve systems, provided the temporary table is not closer than 24 inches from the surface and subject to all other subsurface regulations.

On the second terraces, low chroma mottles can be considered as indications of a temporary, perched water table only if the evaluator can identify a restrictive layer in the soil profile. Deeper test holes may be needed to confirm the restrictive layer. This procedure differs from that used on the third terrace in that on the third terrace the restrictive layer does not have to be confirmed visually.

Low chroma mottles found on the first terrace will not be considered to be associated with a temporary, perched water table in any case.

Exceptions to the procedures outlined for the second and third terraces will occur when, in the judgment of the evaluator, natural vegetation, topography (swales, creeks, etc.), local well data or other considerations indicate that low chroma mottles are associated with a permanent water table.

Identification of the different terraces shall be made on the basis of soil profiles as described by Bob Paeth.

Quite frankly, Deschutes County and the Department may receive criticism for improperly evaluating property prior to the above changes in procedures. I believe this is probably somewhat unfair in that past evaluations were based on the best information available. Since the restrictive layers mentioned above are quite deep, most test holes were not deep enough to detect the layer and there was no other reason to suspect its presence.

As you know, Bob Paeth and Kent Mathiot will be in the LaPine area the week of July 16, 1979. The purpose of their visit will be primarily to look closer into the second terraces and to assist Deschutes County and

DEQ personnel in the identification of soil profiles. They will also assist in training County and DEQ personnel in identifying wet areas in the second and third terraces where the water table cannot be considered temporary. You can be assured that their visit will not reverse the procedures outlined in this letter.

If you have questions on this matter, please call me.

Sincerely,

Richard J. Nichols
Regional Manager

RJN:dmc

cc:Rep. Tom Throop
:Senator Fred Heard
:Klamath County Commissioners
:Deschutes County Commissioners
:Bob Paeth, DEQ
:Kent Mathiot, DEQ
:Fred Bolton, DEQ
:T.J. Osborne, DEQ
:Klamath Falls Branch

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item I, July 27, 1979, EQC Meeting

Informational Report: Status of Bend Sewerage Facility Project

Background

At their June 29, 1979, meeting, the Environmental Quality Commission requested the Department of Environmental Quality to present a status report on the City of Bend sewerage facility which is currently under construction. The request was based upon comments made by Messrs. Gordon Priday and Paul Ramsey during the public forum segment of the meeting.

Prior to July 1969, the conventional means of sewage disposal in the Central Oregon area was disposal wells. The lava terrain in this area contains many underground caverns and crevices. A disposal well drilled into the cavern or crevice was very convenient for disposal of sewage. Generally, the disposal well was preceded by a septic tank for gross solids removal.

In the late 1960's, Mr. Jack Sceva of the Federal Water Pollution Control Administration (predecessor of U.S. EPA) studied the disposal well situation and recommended, in the interest of protecting the groundwater aquifier, that disposal wells be eliminated as means for waste disposal. Based upon this information, the Oregon State Sanitary Authority (predecessor of the EQC) promulgated rules requiring the elimination of disposal wells by January 1, 1980. Since 1969, all incorporated cities in Central Oregon, with the exception of the City of Bend, have installed sewage collection, treatment, and disposal facilities and have eliminated disposal wells inside their city limits. These cities include Culver, Madras, Metolius, and Redmond. The City of Bend is under construction and should have a completed system by June 1980.

Though the Bend sewerage facility is now under construction, the ultimate method of effluent disposal is still unknown. The original facilities plan, which was approved by the Department and EPA, called for land irrigation with disposal well as back-up. Initial design work later demonstrated the irrigation site to be inadequate. A revised, acceptable irrigation proposal was estimated to cost about 20 million dollars and was not felt to be immediately implementable. At this point, in order to prevent further delay for the Bend project, the decision was made to evaluate ultimate effluent disposal through an Environmental Impact Statement (EIS).

Preparation of the EIS would take at least a year and would delay starting the Bend project at least that long. The delay would add to the final cost of the project, which, at that time, was projected to be about 50 million dollars. Unwilling to accept this delay, the Department approved use of a disposal well for interim disposal of treated effluent until the ultimate method could be determined. This would allow

project construction to begin without delay. Use of a disposal well for disposal of treated effluent from a municipally-operated sewage treatment plant is allowed by Oregon Administrative Rules 340-44-045 (see Attachment A). The Environmental Quality Commission concurred with this approach at their November 1977 meeting (see Attachment B). Finally, in March 1978, EPA approved use of a disposal well for interim effluent disposal provided no other feasible alternative is available (see Appendix C).

Current Situation

Currently, about half of the sewage collection system has been completed with other portions under construction. Construction has been started on the sewage treatment plant. Preliminary engineering work has been started on evaluation of various means of interim subsurface disposal, i.e. evaporation/percolation beds, disposal wells, etc.

Completion of the Environmental Impact Statement, previously scheduled for December 1978, has been delayed until December 1979. It is conceivable that the EIS will not be completed until sometime in 1980.

EPA is not convinced that all interim alternatives other than subsurface disposal are unfeasible. They still believe discharge to the North Unit Main Canal is a viable alternative. The Department, based upon past meetings, statements, and letters from North Unit Irrigation District, believes the North Unit Canal cannot be considered as an interim alternative. The City of Bend is gathering together necessary documentation to present to EPA concerning the North Unit Canal. The Department is confident that this documentation will convince EPA that the canal is not a viable alternative for interim disposal.

The Department has not reviewed the technical merits of any form of subsurface disposal. It is believed that such review should wait until the City of Bend's consultant completes the preliminary engineering evaluation of the various subsurface disposal alternatives. At that time, sufficient information should be available to adequately evaluate the alternatives. The proposed draft permit requires a report on this matter to be submitted to the Department by November 1979.

The Department prefers the evaporation/percolation bed approach for interim subsurface disposal. We believe this will provide more separation between the point of discharge and the underlying groundwater aquifier. It will also allow for greater dispersion of effluent before it reaches the groundwater. Nevertheless, the Department believes that a disposal well must still be considered as an option and should be used if an evaporation/percolation bed is not a reasonable option.

Director's Recommendation

It is recommended that the Commission direct the Department to carefully review the preliminary engineering evaluation report on interim alternative subsurface disposal methods for the new Bend treatment plant. The Department's review shall assure that the best alternative will be chosen to protect groundwater resources.

Michael Downs
for
WILLIAM H. YOUNG

Richard Nichols
382-6446
July 12, 1979
Attachments

Attachment A.

DIVISION 44

Construction and Use of Waste Disposal Wells

[NOTE: Effective July 1, 1969, the Sanitary Authority was replaced by the Department of Environmental Quality, consisting of a Department and of a Commission, known as the Environmental Quality Commission. Where Sanitary Authority is presently used in these regulations, it should be noted by readers of these rules that Department of Environmental Quality should be substituted unless the context or statutes clearly require the use of Environmental Quality Commission.]

Definitions

340-44-005 As use in these regulations unless the context requires otherwise:

(1) "Person" means the state, any individual, public or private corporation, political subdivision, governmental agency, municipality, industry, copartnership, association, firm, trust, estate or any other legal entity whatsoever.

(2) "Sewage" means the water-carried human or animal waste from residences, buildings, industrial establishments or other places, together with such ground water infiltration and surface water as may be present. The admixture with sewage as above defined of industrial wastes or wastes shall also be considered "sewage" within the meaning of these regulations.

(3) "Wastes" means sewage, industrial wastes, agricultural wastes, and all other liquid, gaseous, solid, radioactive or other substances which will or may cause pollution or tend to cause pollution of any waters of the state.

(4) "Waste Disposal Well" means any natural or man-made hole, crevasse, fissure or opening in the ground which is used or is intended to be used for disposal of sewage, industrial, agricultural or other wastes; provided, however, as used in these regulations waste disposal wells do not include conventional seepage beds, tile fields, cesspools or landfills constructed and operated in accordance with State Board of Health rules and regulations or waste treatment or disposal ponds or lagoons constructed or operated under a permit issued by the State Sanitary Authority.

(5) "Approved Permit Issuing Agency" means a city, county, or other governmental entity which has been specifically designated by the State Sanitary Authority as the agency authorized to issue pursuant to these regulations permits for the construction, modification, miantenance or use of waste disposal wells within a designated geographical area.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Policy

340-44-010 Whereas the discharge of untreated or inadequately treated sewage or wastes to waste disposal wells and particularly to waste disposal wells in the lava terrane of Central Oregon constitutes a threat of serious, detrimental and irreversible pollution of valuable ground water resources and a threat to public health, it is hereby declared to be the policy of the State Sanitary Authority to restrict, regulate or prohibit the further construction and use of waste disposal wells in Oregon and to phase out completely the use of waste disposal wells as a means of disposing of untreated or inadequately treated sewage or wastes as rapidly as possible in an orderly and planned manner.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Construction or use of Waste Disposal Wells Prohibited

340-44-015 (1) After the effective date of these regulations, no person shall construct or place in operation any waste disposal well for the disposal of sewage without first obtaining a permit for said construction or operation of the waste disposal well from an approved permit issuing agency.

(2) After the effective date of these regulations, no person shall construct or place in operation any waste disposal well for the disposal of sewage from a system serving more than 25 families or 100 people or of wastes other than sewage without first obtaining a permit from the State Sanitary Authority.

(3) After January 1, 1975, no person shall maintain or use any waste disposal well for the disposal of sewage or wastes without a currently valid permit from an approved permit issuing agency or the State Sanitary Authority which specifically authorizes said maintenance or use.

It is the intent of this sub-section to phase out, by January 1, 1975, the use of waste disposal wells except for those which are scheduled to be replaced by sewers in accordance with an approved plan and time-schedule, and those which are operated under specific permit from the State Sanitary Authority pursuant to section 340-44-045 of these regulations.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Issuance of Permits Without Sanitary Authority Approval Prohibited

340-44-020 After the effective date of these regulations, no person shall issue permits for the construction, modification, maintenance or use of waste disposal wells unless they are at the time of issuance designated by the State Sanitary Authority as the approved permit issuing agency for the area for which the permit is sought.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Waste Disposal Well Permit Areas

340-44-025 Permits for construction, modification, maintenance or use of waste disposal wells may be issued only in those designated geographical areas for which a city, county or district, legally authorized to provide sewerage services for the area, complies with the following conditions:

(1) Maintains on file with the Sanitary Authority a

currently approved sewerage program including a plan and time schedule for providing collection, treatment and disposal of wastes.

(a) The time schedule must be designed to provide an approved sewerage system within the shortest time possible and unless it can be demonstrated to be nonfeasible shall at least comply with the following:

(A) Qualified consulting engineer to be hired by not later than July 1, 1969.

(B) Preliminary engineering report including a detailed financing plan and construction schedule to be submitted to the Sanitary Authority by not later than January 1, 1971.

(C) Start construction of the sewerage system by not later than August 1, 1971, after obtaining approval from the Sanitary Authority of detailed plans and specifications.

(D) Complete construction of the approved sewerage system by not later than January 1, 1980.

(2) Submits to the State Sanitary Authority, during the month of January each year, annual reports which demonstrate that reasonable progress is being made in implementing the approved sewerage program.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Waste Disposal Wells Prohibited Where Better Treatment or Protection is Available

340-44-030 Permits shall not be issued for construction, maintenance or use of waste disposal wells where any other treatment or disposal method which affords better protection of public health or water resources is reasonably available or possible.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Permit Conditions

340-44-035 Permits for construction or use of waste disposal wells issued by an approved permit issuing agency shall include, in addition to other reasonable provisions, minimum conditions relating to their location, construction or use and a time limit for authorized use of said waste disposal wells, not to exceed a period of five years. Construction and orientation of building sewers shall be compatible with the approved area sewerage plan.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Abandonment and Plugging of Waste Disposal Wells

340-44-040 (1) A waste disposal well upon discontinuance of use or abandonment shall immediately be rendered completely inoperable by plugging and sealing the hole to prevent the well from being a channel allowing the vertical movement of water and a possible source of contamination of the ground water supply.

(2) All portions of the well which are surrounded by "solid wall" formation shall be plugged and filled with cement grout or concrete.

(3) The top portion of the well must be effectively sealed with cement grout or concrete to a depth of at least 18 feet below the surface of the ground, or wherever this method of sealing is not practical, effective sealing must be accomplished in a manner approved in writing by the State Sanitary Authority or the authorized permit issuing agency if functioning.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Construction or Use of Waste Disposal Wells Prohibited After January 1, 1980

340-44-045 After January 1, 1980, it shall be unlawful for any person to construct, maintain or use waste disposal wells for disposal of sewage or wastes unless said wastes have been previously treated by methods approved by the Sanitary Authority and further such treated wastes shall be discharged to waste disposal wells only if specifically approved and authorized by the Sanitary Authority.

It is intended that this section will permit consideration for approval by the Sanitary Authority of waste disposal to deep injection wells, constructed and operated in accordance with a carefully engineered program, and for disposal to waste disposal wells of adequately treated and disinfected effluents from large, efficiently-operated, municipal or county sewage treatment plants where continuous and effective surveillance and control of waste treatment and discharge can be assured so as to fully safeguard water quality and the public health and welfare.

Statutory Authority:
Hist: Filed 5-15-69 as SA 41

Attachment B

Department of Environmental Quality

ROBERT W. STRAUB
GOVERNOR

1234 S.W. MORRISON STREET, PORTLAND, OREGON 97205 PHONE (503) 229-5395

December 20, 1977

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
DEC 27 1977
BEND DISTRICT OFFICE

U. S. Environmental Protection Agency
Oregon Operations Office
1234 S. W. Morrison Street
Portland, OR 97205

Re: WQ - Bend
C-410486

Gentlemen:

By letter of December 7, 1977, the City of Bend notified us that an amended Sewerage Facilities Plan has been completed (letter attached). This amended plan proposed a modified sewerage project, which was adopted by the City Commission in December.

The City's amended project is different from that project which DEQ certified on February 28, 1977. However, this modified project complies with the effluent disposal requirements specified in Oregon Administrative Rule (OAR) 44-025 and 44-045. These OAR's were cited in the February 28 certification. This letter is an official notice that the project description part of the certification is changed to agree with the following:

1. Full time subsurface effluent disposal to a lava sink or drill hole.

2. Construction of a new treatment plant northeast of Bend.

3. A sludge disposal area at the new plant site.

The Environmental Quality Commission approved the amended project at its November 18, 1977 meeting. EQC approval was based on a revised Environmental Assessment Statement, an updated cost analysis, adopted OAR's, an understanding that subsurface disposal is regarded as an interim solution, and the knowledge that this alternative is better than the City's present means of sewage disposal.

The original project (which was approved by DEQ & EPA) relied on effluent irrigation as the primary disposal method. Subsurface disposal was to be used whenever the effluent could not be irrigated. According to the City's present consultant, the original plan would have required approximately 3 months of subsurface disposal per year. Therefore, subsurface disposal was a significant part of this project before the city amended the facilities plan.

COPY

In the amended facilities plan, subsurface disposal was selected over the effluent irrigation alternative because, according to present estimates, the provision of irrigation would increase total project cost by 34%. We are convinced that the $17 million dollar cost of effluent irrigation should not be incurred at this time.

Because of passage of the Safe Drinking Water Act, subsurface effluent disposal cannot be regarded as a permanent solution. We recommend that EPA prepare an Environmental Impact Statement to consider several possible permanent solutions for disposal including: irrigation (with no subsurface disposal), discharge to the North Unit Irrigation District canal, and discharge to the Deschutes River. We regard subsurface disposal as an interim solution which can be implemented using available financial resources. We feel that nothing will be gained by delaying implementation of this project.

Allowing the city to proceed with the amended project should be considered Phase I of a two phase project. After all environmental issues have been fully evaluated, then Phase 2 (permanent disposal option) could be realized.

We would like to meet with all appropriate EPA-Region X staff in Seattle to discuss this project. Please allow us an opportunity to discuss this in conference before you reach a decision on the City's and DEQ's requests.

Sincerely,

Original Signed By
William H. Young

DEC 22 1977

WILLIAM H. YOUNG
Director

THB:aes
Attachment

cc: City of Bend
Central Region - DEQ
BECON

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

Appendix C

S-Bend

REPLY TO ATTN OF: M/S 443

MAR 15 1978

Mr. William H. Young, Director
Department of Environmental Quality
State of Oregon
P. O. Box 1760
Portland, Oregon 97207

Dear Mr. Young:

This letter outlines the present status and outlook in our processing of Construction Grants for the City of Bend project. As you know, we are now considering your proposal to change the plant site and revise disposal alternatives from that committed by our approval of the original Step II grant submittal.

In terms of the proposed change in plant location from upgrading on-site to a new plant at Site E, we are now conducting a cost comparison analysis on the two alternatives. A contract for this work has been issued to Brown and Caldwell Consulting Engineers and is scheduled for completion by April 6, 1978. Provided the proposed relocation is found cost-effective, we will propose a Negative (environmental) Declaration based upon environmental evaluations presented in the City's Supplemental Environmental Impact Assessment report. Since we have already approved the collection and interceptor portions of the project, a final Negative Declaration on a new plant site will enable all phases of the project to proceed expeditiously except for ultimate effluent disposal.

Consistent with your request we have determined to prepare an Environmental Impact Statement on the ultimate effluent disposal. Alternatives considered will at least include land application, and discharge to surface waters (including Deschutes River and irrigation canal) and to groundwater. A contract has already been issued to Jones and Stokes and Associates, Inc., to prepare the EIS, and completion is scheduled within one year. We are confident that the results will enable selection and completion of the effluent disposal system in good time to accomodate plant start-up which is not expected before December 1979.

The City has asked whether EPA will give prior approval to interim use of a drill hole for effluent disposal should a selected final disposal

alternative not be ready in time for plant start-up. The Environmental Quality Commission has already approved such disposal. As you know, it is our policy to provide maximum protection to the quality of groundwaters in order to assure present and future public uses, including drinking water. In recognition of the irretrievable nature of any damage done to underground aquifers, we are especially concerned that no unnecessary discharges of pollutants be allowed. Therefore, the EPA can only accept interim disposal to drill hole if it is the only feasible alternative available at the time of actual use. This conditional approval of the interim drill hole, contemplates that the EIS will be completed in time to actually preclude need for any interim disposal. In addition, we assume that the City will pursue and exhaust other available interim or final disposal alternatives, including discharge to the irrigation canal. We will also assume that the City will commit to aggressively constructing the final disposal system to limit the use, if any, of an interim solution.

Final EPA approval of effluent disposal to a drill hole also is contingent upon two other conditions.

1. That discharge to a drill hole is found environmentally acceptable. Results of the EIS could satisfy this requirement.

2. That a comprehensive ground water monitoring program approved by EPA be established and operable prior to the time of first discharge. This monitoring program is intended to evaluate the fate and impact of effluent on the receiving ground water aquifers, including the regional ground water table.

Please be assured that we are very concerned to assure early construction and completion of this very important sewage collection and treatment system for the City of Bend. If you have any questions about our status in this project, please do not hesitate to call. John Vlastelicia and his staff will continue to coordinate our efforts and progress with your office to expedite the project.

Sincerely,

Donald P. Dubois
Regional Administrator

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Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item J, July 27, 1979, EQC Meeting

Informational Report: Review of Federal Grant Application for Air, Water and Solid Waste Programs

Background

Each year the Department and the Environmental Protection Agency (EPA) negotiate an agreement whereby EPA provides basic program grant support to the air, water and solid waste programs in return for commitments from the Department to perform planned work on environmental priorities of the State and federal government.

For federal fiscal year 1980 (FY80), EPA has modified its approach from recent years to require a formal State-EPA Agreement (SEA) that covers the three state programs, and provides state work plans for environmental problems that have significant cross-programmatic impact (e.g., sludge management). EPA is also requiring greater public participation in the negotiation process than in previous years.

As a result, the attached draft SEA not only encompasses the traditional strategies and work plans for the air, water and solid waste programs, but also a series of six proposed "integrated" projects that address environmental issues that require the participation of two or more programs to provide an adequate response. It will also contain a summary of major public comments received on the Agreement and specific DEQ/EPA response to those comments at the end of the public review period.

Commission review of the annual grant application materials is intended to achieve two purposes:

1. Commission comment on the strategic and policy implications of the program descriptions and integrated projects contained in the draft State-EPA Agreement; and

2. Opportunity for public comment on the draft Agreement.

Further public comment is being provided under federal A-95 clearinghouse procedures where the Department's Regional Managers are briefing local governments on the Agreement, at their request. DEQ and EPA also held a joint public hearing on the draft Agreement July 18 in Portland, and each program has solicited review and comment from its various citizen advisory committees.

One other item of note is that EPA's strategy and work plan for implementing the Safe Drinking Water Act in Oregon is included in the draft Agreement. EPA's SEA guidelines for FY80 require this program to be covered in the agreement on the assumption that the States have accepted primary responsibility for implementation of the program within their boundaries. Oregon has not accepted delegation, and thus the work plan is included in the Agreement to show EPA's commitments to implement the program in Oregon. Its inclusion does not commit Oregon to assume primacy, nor does it preclude it at some point in the future.

The appendices to the draft Agreement have not been attached to this report because of the sheer volume of paper. Complete copies are available at DEQ headquarters and regional offices for review.

Director's Recommendation

It is recommended that the Commission:

1. Provide opportunity for public comment at today's meeting on the draft State-EPA Agreement; and

2. Provide staff its comments on the policy implications of the draft Agreement.

Michael Downs
for
WILLIAM H. YOUNG

MJDowns:cs
229-6485
7/11/79
Attachment: Draft State-EPA Agreement (without appendices)

AGREEMENT

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

AND

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION X

DRAFT

Purpose

This Agreement documents strategies, work plans, policies and procedures of the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency, Region X (EPA) regarding state management and federal oversight of programs to protect Oregon's air quality and water quality and provide for effective solid waste management.

The Agreement provides the basis for the federal fiscal year 1980 (FY 80) federal program grants to DEQ under the respective provisions of the Clean Water Act, Clean Air Act, and Resource Conservation and Recovery Act.

In addition, EPA describes its program operations for the protection of drinking water supplies in Oregon for review and coordination with related authorities of the state of Oregon.

Several preexisting DEQ-EPA agreements on procedures exist and are hereby incorporated by reference (Appendix 1).

This Agreement also provides work programs for specific accomplishments on major environmental issues that have cross-programmatic impact. This coordinated planning of the several individual programs is intended to identify and address any gaps or conflicts which might exist and require more integrated program approaches and problem solving. The priority areas of such cross-program impacts which will be addressed during FY 80 are:

1. Sludge Management

   The Department of Environmental Quality and other state agencies lack an integrated sludge management program. Poorly defined and/or overlapping sludge management responsibilities of the Air, Water, and Solid Waste divisions within the DEQ as well as other agencies (State Health Division--Radiation Control Section, State Department of Water Resources, State Department of Agriculture and EPA) have led to uncoordinated and occasionally improper disposal of sludges. The purpose of the project is to resolve: the inter- and intra-departmental responsibility and authority for regulating sludge management; the policy and procedures for administering a sludge management regulatory program; and the technical standards, guidelines, and staff training for proper disposal and utilization of all types of sludge to assure they are adequate.

2. Toxics and Hazardous Materials

Hazardous, toxic, and dangerous materials management and control have become large problems in many areas of the United States. This impetus has led to many new federal laws which attempt to effect control of these materials. The series of Federal Register regulations resulting from these laws is in such a state of flux that no one can adequately interpret the total impacts. Public concern is high and sound government management against hazards must be assured.

The state of Oregon does not have as serious a problem as many other areas because this is not a highly industrialized area. To assure that problem areas are handled, DEQ is operating several control activities such as NPDES (water pollution) permits, implementing NESHAPS (hazardous air pollutants) in air quality, controlling hazardous waste sitings and disposal, handling oil and chemical spills, monitoring hazardous materials' access to the environment, and working with other agencies on related problems. Environmentally, the state of Oregon has control of these problems. Administratively, support is needed for each of the discrete areas and for the ties between programs. The objective of this project is to develop and implement, within practicable limits of resources and time, a coordinated and integrated statewide program for control of toxic-hazardous materials.

3. Implementation of Land-Use Coordination Program

Local government in Oregon is responsible for land-use planning and implementation. Environmental quality problem prevention and correction depends on coordination and cooperation with land-use decisions and decision makers. Oregon land-use law (ORS 197) and the Statewide Planning Goals and Administrative Rules (OAR 660) adopted by the Land Conservation and Development Commission (LCDC) provide a foundation for this coordination. Certain of DEQ's own legal authorizations do also.

The DEQ acknowledges the necessity of maximizing technical assistance and coordination with local and LCDC land-use decision processes. To this end, the Department's land-use affecting actions must include the following to assure compliance with environmental quality requirements: review and technical assistance to local comprehensive land-use planning and review of LCDC policy development proposals; obtaining a local statement of land-use compatibility before DEQ takes site specific actions; and development of DEQ nonsite specific actions, such as administrative rules, with appropriate land-use considerations.

4. Backyard Burning

The Portland Air Quality Maintenance Area (AQMA) has not attained the air quality standard for Total Suspended Particulates (TSP). Open burning is considered a contributor to TSP (smoke, dust) emissions, and air quality nuisance conditions. A coordinated effort between the state and local agencies involved with this problem is necessary to develop alternative programs to the practice of open burning. It is an existing problem which involves air quality and solid waste considerations with regional implications. Although this project is specific to the Portland AQMA, it is expected that it will be useful in other sensitive areas (i.e., Medford, Salem) throughout the state. The specific objective of the project is to develop a program which will consider the need for eventual elimination of open burning in an area which at least encompasses the Portland AQMA.

5. Modular Incinerators

Because of the diminishing capacity of traditional solid waste disposal facilities, the increasing cost of energy, and the recent availability of relatively small and inexpensive, modular incinerator/boiler package units, people are starting to look to these units as a viable solution to their solid waste/energy problems. There is some confusion regarding what emission limits do and how they apply to these units. The confusion stems from the fact that individually these units are small, but collectively their impact can be very great on air quality. The purpose of the project is to investigate the potential application of modular incinerators or incinerator/boiler units in the Salem and Portland Air Quality Maintenance areas, to determine the potential air quality consequences under present rules and procedures, and to develop and promulgate new rules and procedures, as may be warranted.

6. Public Participation

Public participation in the development of agency programs is a desired and now a required effort. However, in order to adequately involve the public in the program development process and to meet the requirements of both the federal and state environmental laws, the Department must establish and define a minimum acceptable public participation effort to be followed by all agency programs. This minimum program is especially desired when applying public participation to "integrated" programs. Individual programs would then be encouraged to build upon the basic effort to meet special needs and attain maximum public participation.

The project goal is to establish a basic minimum "integrated" public participation program that will: a) involve the public in DEQ program development and implementation processes; and b) meet the legal requirements of federal and state laws.

The detailed work programs are attached (Appendix 2).

Summaries of Strategies and Work Plans

This section contains a brief summary of the strategies and work plans prepared by each program to address the major environmental issues in air quality, water quality, and solid waste management. Additionally, EPA has included a summary of its program for protection of drinking water supplies in Oregon. The full strategies and work plans are attached (Appendix 3).

Air Quality

Oregon's Air Quality Control Program for the 1980 Fiscal Year (FY 80) will continue to spend substantial effort to maintain a high level of compliance with federal/state emission standards by the more than 1900 permitted stationary sources located throughout the State.

Approximately 300 major sources are intensely tracked by the state (and reported to EPA) through self-monitoring reports, source tests, frequent drive by or limited purpose inspections and at least one full-scale plant-site inspection each year. Permits are thoroughly reviewed and revised or reissued every five years.

In general, the stationary sources (industrial and commercial plants and operations) throughout the state are reasonably well controlled. For the most part, new efforts to improve air quality must be aimed at controlling area-wide and mobile sources such as fugitive dusts, smoke from vegetative burning and automobiles.

In addition to continuing the basic source-compliance/enforcement work, much of the State Air Quality Control (AQC) Program is directed toward meeting specific requirements and deadlines of the Federal Clean Air Act.

Substantial public and local government participation is provided through the Air Quality Maintenance Area (AQMA) Citizen Advisory Committees, the local lead agencies designated for transportation control planning and through the A-95 review process.

A continuing major effort for FY 80 will be to work towards completion of standards attainment/maintenance strategies for the four designated nonattainment areas of the State as follows:

Portland Air Quality Maintenance Area (AQMA)

1) Develop, with the AQMA Advisory Committee, Secondary Total Suspended Particulate (TSP) Strategy by July, 1980.

2) Conduct analysis of alternative Transportation Control Strategies (TCS) with Metropolitan Service District by July, 1980 and work toward adoption of Transportation Control Measures (TCM) Plan by July, 1982 (to meet Carbon Monoxide (CO) and federal Ozone (O_3) standards by December, 1987).

Eugene-Springfield AQMA

1) Develop, with Lane Regional Air Pollution Authority (LRAPA) and the AQMA Advisory Committee, secondary TSP strategy by July, 1980.

2) Analyze alternative TCS with LRAPA and Lane COG by July, 1980 and work towards adoption of TCM by July, 1982.

Medford-Ashland AQMA

1) Develop, with AQMA Advisory Committee, primary TSP Strategy by July, 1980.

2) Develop with AQMA Advisory Committee, secondary TSP strategy by January, 1981.

3) Analyze alternative TCS with Jackson County by July, 1980 and work towards adoption of TCM by July, 1982.

Salem Nonattainment Area

Ozone levels in the Salem area currently exceed the Federal Standards, however, the area is projected to achieve compliance through application of the Federal new car emissions reduction program and control of Salem and Portland area volatile organic compound sources.

Other highlights of the FY 80 Air Quality Program are:

The Department will receive delegation of Prevention of Significant Deterioration (PSD) program from EPA and thereby assume responsibility for review of major new sources in present clean air areas to ensure that allowable increments of increased pollution are not exceeded.

Implementation of New Source Review Rules for sources located in and adjacent to nonattainment areas to ensure that reasonable further progress towards standards attainment will be made.

Implementation of recently adopted rules for controlling volatile organic compounds from 11 categories of sources and promulgation of new rules for 10 additional source categories pursuant to EPA guidance.

Complete analyses and interpretation of special fine and course particulate characterizations in Portland, Willamette Valley and Medford.

Attempt to demonstrate to EPA that up to 250,000 acres of grass seed fields can be open burned under the Department's Smoke Management Program without causing violations of federal/state ambient air standards and PSD increments.

Continue to work toward development of viable alternatives to Open Field Burning including markets for straw.

Complete a study designed to determine potential and probable patterns of alternative fuels use and resultant impacts on air quality.

Revise the state standard for lead (PB) to make it at least as stringent as the new federal standard and demonstrate to EPA that statewide compliance will result from federally mandated reduction of lead in gasoline.

Gather quantitative data on increasing use of wood stoves for home heating, determine impacts of such use on air quality and study ways to mitigate those impacts.

Analyze the Statewide Air Quality Monitoring System and develop an EPA approved schedule to bring it into full compliance with federal requirements.

Implement a program to provide improved quality assurance of air quality data pursuant to EPA guidance.

Implement, pursuant to EPA guidance, the Pollution Standard Index (PSI) method of reporting ambient air quality data in Portland, Eugene and Medford, by July, 1980.

Attempt to develop viable alternatives to open burning of yard cleanup materials for the Portland, Eugene-Springfield, Salem and Medford areas.

Complete, in coordination with local transportation planning agencies, Parking and Traffic Circulation Plans for Beaverton by January, 1980, for Portland by July, 1980 and for Medford by October, 1980.

Continue the Portland area vehicle emissions testing/maintenance program and provide assistance to implementation of a voluntary vehicle inspection/maintenance program in Medford.

Continue to adopt regulations and request delegation of authority to implement New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Pollutants (NESHAPS) as they are promulgated by the Environmental Protection Agency.

Amend the Department rule, Air Pollution Emergencies (Division 27), and adopt emergency action plans as is warranted in accordance with the Environmental Protection Agency guidelines

Revenue Summary
Approximate FY 80 expenditures including LRAPA

General Funds	$1,486,000
Other Funds	
Portland I/M Fees	1,193,000
Field Burning Fees	510,000
Air Permit Fees	307,000
Federal Funds	977,000
	$4,473,000

Water Quality

Introduction

The primary mission of the Water Quality Program is to attain and maintain water quality throughout Oregon sufficient to meet in-stream water quality standards and to protect recognized beneficial uses. This is consistent with the federal goal of fishable/swimmable waters where attainable. The tools or subprograms employed to carryout this mission include ambient monitoring, planning and analysis, source control, (Permits, Grants, technical assistance) subsurface sewage disposal, experimental on site sewage disposal and program administration.

The quality of the waters in Oregon are among the highest in the nation. This is a result of a high level of environmental awareness on the part of its citizens and diligent effort by cities and industries to control their waste discharges. However, there remain some known water quality problems and many suspected problems. In addition, because of rapid population and economic growth, the potential for creating new water quality problems is great.

PRIORITY PROBLEMS AND ISSUES

Priority problems and issues are discussed at some length in the water quality program strategy. Significant water quality problem areas are briefly enumerated below:

Groundwater Deterioration. Known areas of groundwater deterioration will be studied and control strategies developed as federal funds are available. Three such projects are now underway and two more remain to be funded.

Toxics. Toxics are a suspected problem. Federal regulations have been developed which require a control strategy. There is intense public interest in the extent of environmental degradation caused by toxics. A coordinated agency effort is being initiated to develop appropriate control strategies.

Urban Runoff. Urban runoff has been identified as a suspected pollution problem in the Portland, Salem, and Eugene areas. Control strategies are now being developed by local planning agencies.

Animal Waste. Animal wastes are a known pollutant source in a few areas and are a suspected pollutant in many areas of the state. A statewide project to determine critical problem areas and develop control strategies will be initiated as federal funds are available.

Vessel Wastes. Federal regulations require modification of vessels to provide holding or treatment and discharge of sewage wastes. A plan is needed to assure availability of pumpout facilities and to designate areas where discharges will not be allowed.

Tillamook Bay Bacteria. Point and nonpoint sources around Tillamook Bay are causing pollution problems and impairing the use of the Bay for the shellfish industry. A program and strategy to better identify source problems and protect the shellfish resource is underway.

Geographic Area Problems. Several areas severely impacted by nonpoint sources of waste have been identified. Projects have been initiated in three geographic areas: Malheur/Owyhee drainages; the area around Tillamook Bay where high concentration of animal wastes occur and the area around Bear Creek in Jackson County. Other projects will be initiated as funds are available.

WATER QUALITY PROGRAM STRATEGY

The Water Quality Program Strategy is presented by major subprogram. Within each subprogram, pertinent problems are identified along with long-range strategies to deal with the problems.

1. Ambient Monitoring. Problems or issues include lack of adequate geographic coverage of ambient data collection and present inability to store, retrieve, analyze and display pertinent water quality data. The monitoring network will be evaluated and redesigned. In-house capability to process data will be developed.

2. Planning and Analyses. Major issues or problems include the lack of capability for data storage and retrieval, and need for a process to better identify water quality problems and needs. In-house capability will be developed to store, retrieve, analyze, and display all data. In addition a biennial status assessment report will be prepared.

3. Source Control. Major issues and problems include the accommodation of new federal standards for discharges covered by the NPDES permit program. A new management program for construction grants is being developed to deal with the problems of rising costs and reduction in available federal grant funds. New federal program efforts are being initiated to require pretreatement of industrial wastes discharged to municipal systems and control underground injection of wastes. The overall strategy for permit issuance is to even out the workload over a five year permit cycle. New federal requirements will be incorporated at the time of permit renewal.

4. Subsurface Sewage Disposal. A major issue is the need to update on-site sewage disposal rules. In-house staff will evaluate and systematically restructure and update the rules.

ANNUAL WORK PLAN

An annual work plan is attached to the Water Quality Program Strategy. The work plan identifies goals, objectives and tasks for addressing the priority problems and issues as well as the routine ongoing work to maintain water quality in Oregon. A schedule is presented which indicates output during the remainder of FY 1979 and for FY 1980. The schedule also identifies a very general timetable for outputs through FY 1984. Resource estimates are presented for FY 1980.

Solid Waste Management

The DEQ Solid Waste Program is an outgrowth of disposal site inventorying and evaluation work done by the State Health Division (State Board of Health) in the period 1967 - 1970. Comprehensive state-level solid waste management authority was centralized in DEQ by the 1971 Legislature. Local government is assigned the responsibility of implementing facilities and systems, while DEQ is to assure effective programs and give assistance. A statewide planning effort commenced in 1972 with the guidance of a state-level

Citizens' Advisory Committee and similar committees for each of the local planning units. Out of this, 24 regional plans evolved with short- and long-range goals and time schedules for closing open dumps and implementing transfer stations, resource recovery facilities and sanitary landfills. Major program activities remain in place, moving toward completion of of the implementation of those plans. Meanwhile, the interest in and means for source separation recycling has grown strong in the state. The DEQ has encouraged and assisted this effort, but more technical assistance is being demanded. It is the Solid Waste Program's intent to see recycling woven into the regional plans as they are updated and as other opportunities arise. A new program planning effort (goals and objectives setting) is scheduled during the coming winter to evaluate and give further direction to the Solid Waste Program in anticipation of new budget drafting.

The Resource conservation and Recovery Act of 1976 (RCRA), under which this grant application is made, constitutes a framework within which a state that has no previous solid waste program can establish and implement a program on a prescribed time schedule. This is potentially confusing to a state program which is already fairly well developed along that line of implementation and needs the federal RCRA funds to maintain an adequate program level. It has been DEQ's objective, with EPA concurrence, to "plug in" to the RCRA framework at its current position with a minimum of backtracking. EPA's highest priority for FY 80 Subtitle D funding is the inventory of "open dumps" and programs for upgrading and closure under Section 4005. DEQ is committed to carrying out the "inventory" for all municipal disposal sites in FY 80, but consistent with the above position, it is DEQ's intent to minimize the procedural aspects of the inventory, maximize the use of information in the regional plans and continue to concentrate on the dump closing and upgrading aspects. This includes a host of planning, financing, technical assistance and enforcement activities.

EPA's second priority under Subtitle D is completion of the State "Solid Waste Management Plans' under Section 4403. This "State Plan" is not a document as normally envisioned, but rather a compilation of documents and referenced items which establish and demonstrate the existence of a total state solid waste regulatory program as envisioned under RCRA. DEQ has committed to produce this output.

Oregon was one of the first (1971) few states to recognize the need for special program emphasis on hazardous wastes. An initial inventory and evaluation of the "program" was completed in 1973 and is being expanded and updated in FY 79. Establishment of a hazardous waste disposal site near Arlington in 1976 made it possible to begin implementation of a comprehensive regulatory state program. Each legislature since 1971 has touched and improved the statutes and the Environmental Quality Commission and Public Utility Commissioner have adopted administrative rules which establish complete regulatory control of the generation, storage, transportation, treatment, and disposal of hazardous wastes.

The passage of RCRA in late 1976 gave regulatory authority for hazardous wastes to the federal government (EPA) with the intention that the state actually operate the program according to EPA regulations and guidance. Extended delays in promulgation of the EPA regulations has allowed DEQ to move ahead cautiously to gain operational experience before a final decision is made to accept complete authorization for administration of the RCRA hazardous waste program.

The scope of the federal program will not be known until final promulation of Section 3001 criteria describing what "hazardous wastes" are. This apparently will not be completed until sometime during January 1, to July 1, 1980. Meanwhile, DEQ proposes to operate a complete regulatory program for a limited state list of hazardous wastes. Activities include operation of a permit (license) program for licensing collection, treatment and disposal facilities; implementaton of a "manifest" system for tracking the transportation of hazardous wastes; and substantially increasing the level of surveillance and enforcement. In general, DEQ's hazardous waste program is deemed to be substantially equivalent to the envisioned EPA program.

After promulgation of EPA regulations, DEQ proposes to finish up development of an "authorization plan," including application to EPA for interim authorization to operate the RCRA hazardous waste program for a two-year trial period. This "interim authorization" coincides with EPA's highest priority for the state program.

Overlaying the foregoing, EPA has established an immediate priority for assessing potential problems with abandoned and inactive hazardous waste disposal sites. DEQ is committing to historically review past industrial and commercial practices in Oregon and carry out a search for potential problems which is commensurate with the potential hazard level. All activities and commitments for FY 80 under RCRA are to be carried out within the context of a public participation program including an advisory group and task force consultation process and a solid waste education program for development and dissemination of information.

Drinking Water

In 1974, Congress enacted the Safe Drinking Water Act establishing a national program for insuring the safety of drinking water throughout the nation. The Safe Drinking Water Act required EPA to establish minimum national drinking water standards to protect public health. These standards apply to two types of water systems: community water systems which serve resident populations and noncommunity water systems which serve nonresident populations in such facilities as campgrounds and highway rest stops. The standards which went into effect June 1977, set limits on maximum contaminant levels (MCL's) or the amounts of various substances found in water. The standards address contaminants which cause both acute (short-term) and chronic (long-term) health effects. Microbiological contaminants

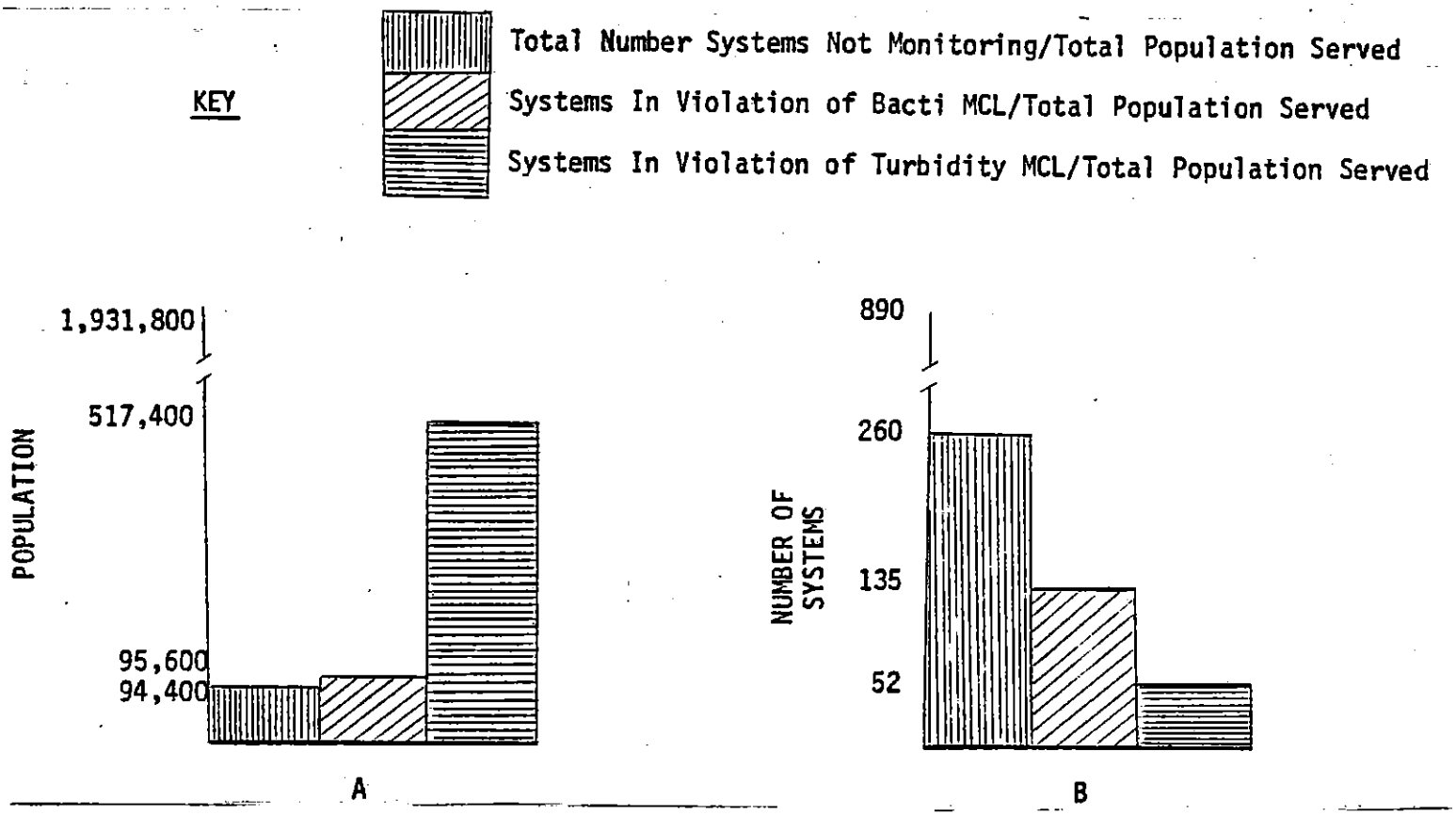
(i.e., bacteria), turbidity (which increases the risk associated with microbiological contaminants), and nitrate all may result in adverse health effects if the contaminated water is ingested only once or for a very short time. The heavy metal, pesticide, and radionuclide contaminants, at the levels commonly found in drinking water, result in adverse effects mainly if the contaminated water is ingested over a long time (several years to lifetime exposure). Contaminants causing chronic health effects are not limited for noncommunity systems because the time of exposure is short.

Minimum self-monitoring and reporting requirements have been established to assure that the water served consistently meets the quality standards. The Safe Drinking Water Act requires the supplier to provide public notice to all water users whenever an MCL is exceeded, the system fails to monitor, or the system is on a formal schedule to upgrade. One philosophy behind the Act was that people have a right to know what quality of water they are being served and whether the water system is testing or upgrading.

The Safe Drinking Water Act also provides for regulating the underground injection of fluid to prevent the endangerment of underground sources of drinking water. The underground injection control (UIC) program calls for a coordinated groundwater protection program which encompasses all activities mandated by the Safe Drinking Water Act, as well as the Resource Conservation and Recovery Act and the Clean Water Act.

Congress intended that the Safe Drinking Water Act's requirements be implemented by the states; however, Oregon has chosen to not implement this program at this time. In the absence of a state program, EPA will soon be initiating a noncommunity water system program to help assure that persons served by this type of system also have safe drinking water. The thrust of the EPA program, by statute is oriented towards responding to violations of the standards after the water is served, rather than to preventative health issues such as construction, operation, and maintenance.

Since the national standards went into effect, EPA has been in contact with all the community water systems in Oregon. As of June 30, 1979, approximately 25 percent of the systems were failing to monitor and report as required. The available data (from reporting systems) show that during the past 24 months, over 130 systems serving approximately 100,000 people have failed to meet the microbiological standards during one or more months and over 50 systems serving approximately 500,000 people have failed periodically to meet the turbidity standards (see figures).



POPULATION SERVED BY SYSTEMS IN VIOLATION OF MONITORING REQUIREMENTS, BACTERIOLOGICAL AND TURBIDITY MAXIMUM CONTAMINANT LEVELS

SYSTEMS IN VIOLATION OF MONITORING REQUIREMENTS, BACTERIOLOGICAL AND TURBIDITY MAXIMUM CONTAMINANT LEVELS

In implementing the community water systems program in Oregon, EPA efforts will be primarily expended in those areas which have the greatest public health implications. This includes responding to emergencies (e.g., waterborne disease outbreaks, hazardous spills affecting public water systems) and follow-up to contamination by the acute contaminants with particular emphasis on microbiological contamination. Priority work elements include maintaining an accurate statewide inventory; achieving compliance with self-monitoring requirements; field spot-check surveys; and MCL compliance through voluntary approaches and selective enforcement. Other efforts include assisting reestablishment of a state drinking water program leading to state primacy for administering the drinking water program.

The community system program is ongoing and will be continued. The major planned accomplishments for Fiscal Year 1980 are related to development of an inventory of noncommunity systems, and increasing the compliance rate of community and noncommunity water supply systems as regards monitoring and reporting and conformance with the MCL's. Other planned, measurable accomplishments include the development of a memorandum of understanding between the EPA and state agencies designed to enhance the coordination of efforts between the agencies and implementation of a UIC program in Oregon.

COORDINATION

The existence of this agreement necessitates unique planning and reporting points in DEQ and EPA. An Agreement Coordinator role is created to plan and schedule agreement preparation and public participation, assure grants administrative compliance, establish format and agenda for performance review, pursue problem resolution and/or report summaries, and to assure negotiated revision of this Agreement in the event of changing conditions. The designated Agreement Coordinators are: Director, Oregon Operations Office, EPA and Administrator, Management Services Division, DEQ.

In addition, the parties acknowledge the benefits of improved coordination of several state programs with the functional components of each program in EPA and the need to avoid conflicting and/or unanticipated federal requirements which might undermine the plans and purposes of this Agreement. Toward those ends, the parties agree that the Director, Oregon Operations Office, will serve as primary contact for EPA in Oregon with authority to issue, interpret, and coordinate EPA program directives to the DEQ and to resolve or assure resolution of federal policy and program conflicts.

Concurrently, it remains the preference that frequent program contact between the several, separate program staffs continue to exist in a voluntary and frequent manner on informational and advisory matters. It is intended that the operational information exchange between program staff in air, water, and solid waste be encouraged. The Agreement Coordinator role for the Oregon Operations Office Director is intended to provide an accountable EPA official to facilitate this contract and to ensure resolution of enduring problems which might occur in that interchange.

Local Government Coordination

The EPA acknowledges the strong leadership role assigned to the DEQ in the achievement of environmental objectives in Oregon. Both agencies further acknowledge the vital role of interested and affected local governments in planning and decision making and, in some instances, implementation of programs toward those environmental objectives. It is therefore the policy of the DEQ and the EPA to assure effective coordination with local governments to enable their maximum participation in operating and implementing local programs consistent with statewide program goals and objectives. EPA will pursue this policy to ensure effective DEQ/local government relations, and to avoid direct EPA/local government decisions which contradict this policy.

Perforamce Evaluation

The planned accomplishments contained in this Agreement reflect objectives as known at the time it is prepared. The potential exists for these plans, like all plans, to be overriden by events outside the control of the

parties (e.g., new legislation, change in resources available, court decisions). Therefore, periodic review and negotiated revision of the plans is central to the Agreement to assure that the plans are maintained in line with current priorities and needs.

Performance evaluation will be conducted quarterly by DEQ with exceptions reported to EPA. Semiannually, a joint DEQ/EPA evaluation will be performed in the offices of DEQ as scheduled by agreement between the Agreement Coordinators. The Coordinators may, at their discretion, schedule more frequent or special topic evaluations wherever performance issues appear to exist.

The semiannual evaluation will result in brief written reports of progress which emphasize, by exception, the policy and/or performance issues which cannot be resolved without executive review and decision. Such reports shall then be acted upon by decision by the respective agency executives.

Priorities

This Agreement covers the broad program directions and accomplishments for environmental control programs in Oregon in FY 80. To guide the assignment of limited resources, and to focus performance evalutation, it is agreed that the highest priority accomplishments for the coming year are as follows:

-- Management and evaluation of performance under this FY 80 State/EPA Agreement, and improvement of the SEA process for FY 81.

-- Response to environmental emergencies.

-- Integration and coordination of program elements for control of toxics/hazardous wastes.

-- Air Programs.

- Complete and implement the 1979 revisions to the State Implementation Plan for the four nonattainment areas: Portland, Salem, Eugene/Springfield, and Medford.

- Develop and implement state provisions for New Source reviews under the Prevention of Significant Deterioration programs.

- Assure major source compliance in the four nonattainment areas.

- Develop and implement statewide air monitoring network consistent with national program requirements.

-- Solid Waste and Hazardous Materials Programs.

- Interim authorization of the state hazardous materials programs under the Resource Conservation and Recovery Act.

- Statewide assessment of potential problems with abandoned hazardous waste disposal sites, and any appropriate related corrective actions.

- Development of statewide inventory of "open dumps" under RCRA, and programs for upgrading or closure.

-- Water Quality Programs.

- Implement a program for Statewide Water Quality Management that is based on a water quality assessment and problem solving process.

- Management of local ground water protection and urban stormwater runoff projects.

- Develop and implement the Statewide Agriculture nonpoint source pollution strategy and control program.

- Evaluate and decide on delegation elements under State Management Assistance provisions for sewerage works construction grants program.

- Assure major discharger compliance with waste discharge permit requirements.

Fiscal Reporting

The DEQ and EPA agree that the budgeting and fiscal reporting of work planned throughout this Agreement shall continue to be by program (air, water, and solid waste) and by category (personal services, services and supplies and capital outlay). Financial reporting of "integrated projects" will not be required. However, resource estimates for program accomplishments are included in the attachments to this Agreement as a description of priorities and program emphases, to help assure adequate resources are available to achieve program commitments, and to forecast resource needs in future fiscal years.

State Primacy

EPA re-emphasizes the federal policy that environmental programs are the primary responsibility of the state environmental agency: DEQ in Oregon. DEQ emphasizes that, except for the Drinking Water Program, it intends to pursue that responsibility to the fullest extent of its resources. The EPA will pursue improvement of its federal oversight operations toward the end of effective state operations, increased assistance and advice, and reduced paperwork and duplication of decision making between the two agencies. Also, EPA will conduct its work with local governments and industry in Oregon to assure advance notice and coordination with DEQ.

Signatures

This Agreement encompasses the foregoing and the attached Appendices 1 thru 4, and covers the period October 1, 1979, through September 30, 1980. The signatories hereby agree to its terms and conditions.

William H. Young, Director
Department of Environmental Quality

Donald P. Dubois, Regional Administrator
Environmental Protection Agency

Attachments
Appendix 1: Preexisting DEQ/EPA Agreements
Appendix 2: Integrated Project Work Programs
Appendix 3: Program Strategies and Work Plans
Appendix 4: Summary of Public Comment and State's Response

M2977:F62

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND OREGON 97207 PHONE (503) 229-5696

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item K, July 27, 1979 Environmental Quality Commission Meeting

Public hearing as to whether to continue, repeal or modify Oregon Administrative Rule (OAR) 340-71-020(9) as it relates to the current spetic tank moratorium in effect in the River Road-Santa Clara area of Lane County.

Background and Problem Statement

On April 28, 1978 the Environmental Quality Commission adopted a rule and order, OAR 340-71-020(9), which established a moratorium on issuance of permits or feasibility statements for new subsurface sewage disposal systems in the River Road-Santa Clara area of Lane County. The Commission directed Department staff to work with affected Lane County governmental agencies to explore alternatives for preventing and reducing further ground water degradation in the affected area. In order to monitor progress, the Commission requested periodic status reports from DEQ staff.

A status report was presented at its February 23, 1979 meeting. Based on that report, the Commission judged that local public and political concerns warranted additional input on the issue. Accordingly, the Commission ordered two information gathering hearings in the Eugene area. Department staff conducted these hearings on March 28 and 29, 1979. Most public testimony opposed the moratorium.

Following the informational hearings, the Lane County Board of Commissioners on April 3, 1979 passed a resolution requesting that the moratorium be terminated.

Department staff presented the informational hearing summary and the Lane County Commissioners' resolution at the April 27, 1979 EQC meeting. Because the EQC had asked for rule making options, DEQ offered three on April 27.

Of the possible Commission choices for rule making hearings, staff recommended that "a rule making hearing be convened after final technical reports from the L-COG study project are submitted in March 1980". It was intended that the completed report would provide the basis for determining whether the moratorium should be altered. Results of the L-COG Interim Analysis Report were promised at the July EQC meeting.

However, the Commission concluded sufficient public and political concerns existed to order a public rule making hearing in July, 1979. It was presumed that the L-COG Interim Analysis Report (Attachment 1) might help the Commission determine whether the moratorium should be continued, repealed, or modified.

DEQ has received and reviewed the Interim Analysis Report (Attachment 1).

Based on that report, options for consideration at the rule making hearing are proposed below. The rule making is under authority of Oregon Revised Statutes (ORS) 468.615, 454.625, 454.685, and 468.020.

Alternatives and Evaluation

Three alternatives are presented. An evaluation of each alternative follows:

1. Continue The Moratorium In Its Present Form.

The nature and extent of the ground water degradation due to subsurface sewage disposal systems in the River Road-Santa Clara area has not been fully defined, although they have been identified as major contributors. The L-COG Interim Analysis Report submitted by H. Randy Sweet generally indicates the following:

1. Elevated levels of nitrates (NO_3-N) are found in the River Road-Santa Clara study area. Some sampling locations have NO_3-N levels which exceed the USPHS standard of 10 ppm. Most sites have levels ranging from 5 to 7 ppm.

   NOTE: An October 21, 1977 EQC decision regarding Clatsop Plains provided for modification of the moratorium if a plan were adopted by Clatsop County which would ensure NO_3-N levels in the aquifer would not exceed 5 ppm.

2. Bacterial movement through the soil occurs rapidly during saturated conditions. Rates of 20 feet in as little as 3.5 hours have been recorded.

3. NO_3-N follows a pattern similar to bacterial migrations, only the rate is slightly lower.

Since residents downgradient from the study area will be dependent upon ground water for their future water supplies, the Commission should consider this in their deliberations. Just how many and where is unknown at this time, but Junction City draws water from this aquifer. Regardless of the moratorium decision, the Commission should recommend

addition of a shallow water well location work element to the current ground water study work plan.

The consequences of retaining the current moratorium are:

1. Public and political sentiments for terminating the moratorium will not be relieved.

2. Hardship conditions (such as inability of retired citizens to build on their vacant properties, or prohibition of bedroom additions to existing homes) cannot be relieved.

3. Lack of development within the area will continue to retard the local economy.

4. Current language does not clearly allow for repairs to existing systems.

2. Repeal The Moratorium (OAR 340-71-020(9)) In Its Entirety.

Several factors support this option:

1. The Interim Analysis Report (Attachment 1) by H. Randy Sweet has not conclusively found a health hazard in the study area to date.

2. Public and political support exists for terminating the moratorium.

3. Short range hardship and adverse local economic impacts will be relieved.

Some consequences of choosing this option are:

1. Developed lands within the study area have a high density of residential units per acre. Complete repeal of the moratorium could allow undeveloped areas to develop at the same or higher densities, thus increasing pollutant load to the aquifer.

2. Federal funding to complete the ground water study may be reduced or terminated by such action. The study should at least be completed as proposed.

3. Modify The Moratorium (OAR 340-71-020(9)) By:

1. Allowing one new subsurface sewage disposal system on each existing undeveloped tax lot which was of record on or before April 28, 1978.

2. Allowing an existing subsurface system expansion for bedroom additions to existing residences.

3. Allowing repairs to existing subsurface systems.

Supporting factors include:

1. Public and political sentiments against the current moratorium will be partially (and in many cases entirely) satisfied.

2. Hardship conditions will be relieved.

3. Bedroom additions or home remodeling will be allowed.

4. Repairs or alterations to existing systems will be allowed.

5. Support for federal funding to complete the current ground water study program will be maintained.

6. Growth will be allowed in the area in a manner which would have substantially less impact on the aquifer than if the moratorium were repealed in its entirety.

Consequences of choosing this option are:

1. Concerns of land developers or owners wishing to subdivide their properties may not be satisfied.

2. Increased pollution loading will occur to the aquifer in the current moratorium area. The actual or measurable effect cannot be predicted at this time.

Summation:

1. Public testimony received at the informational hearings conducted in Eugene on March 28 and 29, 1979, mostly opposed the current moratorium.

2. The Lane County Board of Commissioners passed a resolution on April 3, 1979 which calls for ending the moratorium.

3. The L-COG Interim Analysis Report for the River Road-Santa Clara ground water study being conducted by H. Randy Sweet does not provide definite answers at this time on the extent or severity of ground water contamination problems in the study area.

4. The L-COG study to date has shown or indicated:

   a. Regions downgradient from the study area will be dependent upon ground water for current and future domestic supplies.

   b. The study area generally has elevated NO_3-N levels in the ground water, and some test sites exceed the 10 ppm USPHS drinking water standard.

   c. Bacterial and NO_3-N mobility under saturated soil conditions is rapid.

   d. There are over 300 residences in the study area which currently use individual wells as their supply for domestic water. Of this number, approximately 150 are located in the current moratorium area.

5. The L-COG study is scheduled for completion in March, 1980. From that, Department and Lane County staff expect data interpretation will be available from which conclusive statements regarding the extent and severity of the ground water contamination problems in the study area and downgradient can be made.

6. Three options are available to the Commission for consideration at this time. They are:

   a. Continue the moratorium.

   b. Repeal the moratorium (OAR 340-71-020(9)).

   c. Modify the moratorium (OAR 340-71-020(9)).

Director's Recommendation:

Based upon the Summation, it is recommended that the Commission act to modify the current moratorium by amending OAR 340-71-020(9) to read as follows:

*OAR 340-71-020(9)(a) Except as provided in paragraph (b) of this subsection and pursuant to ORS 454.685, neither the Director nor his authorized representatives shall issue either permits for

any new sewage disposal facility which would use subsurface injection, or construction permits or favorable reports of evaluation of site suitability for new subsurface sewage disposal systems, within the boundaries of the following described geographic area of the state:

The area generally known as River Road-Santa Clara, and defined by the Boundary submitted by the Board of County Commissioners for Lane which is bounded on the South by the City of Eugene, on the West by the Southern Pacific Railroad, on the North by Beacon Drive, and on the East by the Willamette River, and containing all or portions of T-16S, R-4W, Sections 33, 34, 35, 36, T-17S, R-4W, Sections 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, and T-17S, R-1E, Sections 6, 7, 18, Willamette Meridian.

(b) Paragraph (a) of this subsection shall not prohibit the issuance of construction permits or favorable reports of evaluation of site suitability for:

A. One subsurface sewage disposal system on each existing undeveloped tax lot which was of record on or before April 28, 1978 provided:

1. The lot and soil conditions meet the minimum standards of OAR 340-71-020 and 340-71-030 for standard system installation.

2. The projected daily sewage flow shall not exceed 600 gallons.

3. The system proposed is not for a variance, rural areas variance or experimental system.

B. An extension to an existing system which is required by the rules in this division in order to allow the addition of a bedroom or bedrooms to an existing residence.

C. A repair to an existing system.

* Brackets [] indicate deleted language, underlining indicates new language.

The Director also recommends that the ground water study continue to completion as proposed, and that the grantee make efforts to locate relevant domestic water supply wells inside the study area and downgradient from the study area.

Michael Downs
for
WILLIAM H. YOUNG

DSJ/GWM:wr

Attachments
(1) Statement of Need for Rule Making
(2) Interim Report Synopsis

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

In the Matter of the Adoption of Amendments to the Department of Environmental Quality Rules for Subsurface Sewage Waste Disposal, OAR, Chapter 340, Division 75, 71-020(9).	))))))	STATEMENT OF NEED

The Department of Environmental Quality intends to adopt amendments to OAR 340-71-020(9) to modify a moratorium on issuance of permits for new or altered subsurface sewage disposal systems in the Lane County area generally known as River Road-Santa Clara.

(a) Legal authority: ORS 454.612; ORS 454.625; ORS 454.685; and ORS 468.020.

(b) Need for Rule: On April 28, 1978 the EQC adopted a Rule and Order, OAR 340-71-020(9), which established a moratorium on issuance of permits or feasibility statements for new subsurface sewage disposal systems in the River Road-Santa Clara area of Lane County. Since adoption, there has been significant public comment on the rule and suggestion for change. Ground water studies completed in the area to date (L-COG Interim Analysis Report) have not provided sufficient data upon which to declare whether a health hazard does or does not exist in the moratorium area.

The EQC, at their April 27, 1979 meeting, concluded that many of the constructive public comments should be included if possible by amending or eliminating the current rule. Accordingly, the EQC ordered a public rule making hearing at their July 27, 1979 meeting.

(c) Documents relied upon:

(1) Agenda Item No. K, July 27, 1979 EQC meeting. Public Hearing as to Whether to Continue, Repeal or Modify Oregon Administrative Rule (OAR) 340-71-020(9) as it Relates to the Current Septic Tank Moratorium in Effect in the River Road-Santa Clara Area of Lane County.

(2) Notice of Public Hearing, mailed June 26, 1979.

(3) River Road-Santa Clara Groundwater Study Interim Report, July, 1979.

(4) Summary of March 28 and 29 informational hearing testimony regarding the River Road-Santa Clara moratorium.

(5) Agenda Item No. K, April 27, 1979 EQC meeting. Status Report and Preliminary Discussion Whether to Schedule Further Action Regarding the Subsurface Sewage Disposal Moratorium in River Road-Santa Clara, Lane County (including Exhibits 1-4).

DEPARTMENT OF ENVIRONMENTAL QUALITY

July 17, 1979

By: John E Borden

John E. Borden, P.E.
Regional Manager
Willamette Valley Region

ATTACHMENT 2

RIVER ROAD/SANTA CLARA GROUNDWATER STUDY

INTERIM REPORT
SYNOPSIS

July, 1979

INTERIM REPORT - **SYNOPSIS**
River Road/Santa Clara Groundwater Study
Staff Summary

I. Findings

1. The study design is adequate to evaluate the impact of septic disposal and other waste sources on the shallow levels of the River Road/Santa Clara aquifer.

2. The study is generally on schedule.

3. Initial model analysis and decay/dispersion evaluation has been completed.

4. The general groundwater is in a northwest direction as predicted, but local flow direction is influenced by local anomolies.

5. During the period from October to April rainfall is the largest source of supply to the shallow aquifer. Imported water and up-gradient underflow are minor sources.

6. Groundwater response to rainfall is rapid, less than 24 hours, when the soil is saturated.

7. In some locations, the water level surface rose to within four feet of the ground surface.

8. Belt Line Highway does not constitute a barrier to the shallow aquifer flow.

9. Dispersion tests indicate that both nutrients and bacteria can move rapidly away from an injection site.

10. During a period of rising water table this year, violations of Federal drinking water standards for nitrates were found in several locations.

11. Coliform contamination in excess of Federal drinking water standards were found in many wells during the winter period. Fecal coliform contamination was found in several wells.

12. Preliminary data indicates that over 300 residences in the study area still rely on groundwater for domestic supplies. These wells have not been tested.

13. Early calculations show that the average residential lot size is between 0.2 and ~~03.~~ 0.3 acres (9,000-14,000 square feet) with an overall density of 3-5 units per acre.

II. Questions to be Answered

1. What is the depth of the shallow aquifer that is influenced by surface waste discharges and what is the interaction and exchange between deep and shallow water levels?

2. What are the groundwater characteristics during a lowering water table?

3. During years of average and 20% greater than average rainfall, what areas within the study will have water table predicted to be influenced by disposal of waste in leachfield lines? Which areas will have leachfield lines innundated?

4. What are the projected "zones of influence" of nitrate and bacteria enfrichment under current conditions?

5. What are the predicted changes in the "zones of enrichment" under the following circumstances:

   a. Continuation of present nondevelopment?

   b. Resumption of development and in-filling of existing developable lands to current density patterns?

   c. River Road is sewered within five years?

   d. Santa Clara is ultimately (20 years) sewered?

   e. Other waste sources (industrial, agricultural) are eliminated?

   f. What are the impacts of diversions of rainfall out of the area by means of storm sewers?

6. Do the currently in-use domestic supply wells show levels of enrichment and contamination in excess of accepted drinking water standards?

7. To what extent does the enrichment of the River Road/Santa Clara aquifer restrict other beneficial aquifer uses and who makes the decision as to which use has priority?

8. In the case of health problems arising from septic waste contamination of the aquifer, who is responsible for applying remedies and who is liable for costs and damages?

III. Recommendations

1. Continue the present study through the falling water table period and its scheduled completion, including final report preparation.

2. Begin the process of identificaiton and evaluation of structural and nonstructural (administrative) alternatives for providing safe and secure water supply to study area and downgradient water users.

3. Identify, locate and analyze well supplies in the area that are currently being used for domestic purposes.

4. Locate sites and test the migration of tracer bacteria after injection into funcitoning drainfields of various ages.

5. Begin preliminary study design work necessary to test the feasibility of using deep well (aquifer) supplies, including a testing program for existing deep well sources.

6. Evaluate the impacts of providing storm drainage collection and either reinfiltration or exportation out of the study area.

7. Consider the designation of the River Road/Santa Clara aquifer as a "Principal Source" aquifer for areas downgradient of the urban service area.

IV. Work to be Completed

The following list are task elements scheduled for performance during the remaining six months of the study.

1. Conclusion of data collection during falling water table period.

2. Pollutant inventory of industrial and agricultural sources.

3. Analysis of nutrient accumulation and dispersion patterns.

4. Completion of bacterial impact assessment.

5. Identificaiton and preliminary evaluation of remedial/prevention alternatives.

6. Public information and feedback activities.

7. Preparation of a final report including analysis, conclusions, and recommendations.

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: July 27, 1979 EQC Breakfast Meeting

Particulate Control Strategy Schedule

Background

A similar situation to the recent ozone strategy development process appears to be developing in the case of particulate strategies. That is, we are working on Total Suspended Particulate (TSP) strategies for Portland, Eugene, and Medford with the goal of adoption by July, 1980. EPA has recently announced that they will propose a revised TSP standard in the form of an inhalable standard (less than 15 micron size) in early 1980 with adoption by December, 1980. The question clearly is whether the Department and citizen committiees should work feverishly to adopt TSP strategies by July, 1980 to meet state and federal standards when it appears the federal target will change right in the middle of the process.

Recognition of particle size in a particulate standard is long overdue, especially with respect to a primary health-related standard. EPA has indicated that the inhalable standard will likely replace the present primary TSP standard and that the present secondary TSP standard, though, may not be changed. This, of course, is pure speculation and anything could happen in the standard setting process.

In any event, it appears that little support may be given to adoption of a TSP strategy which might become cost ineffective in as little as six months after adoption of a new federal standard. This matter is now being explored with local advisory committees.

EPA cannot give us relief from the July 1980 date since that is a requirement of the CAA; but they are saying - adopt a strategy, but don't be in too much of a hurry to implement the questionable aspects of the strategy.

The following "latest" guidance was received by telephone conference with EPA (Mike Schultz for Tom Wilson) 7/25/79:

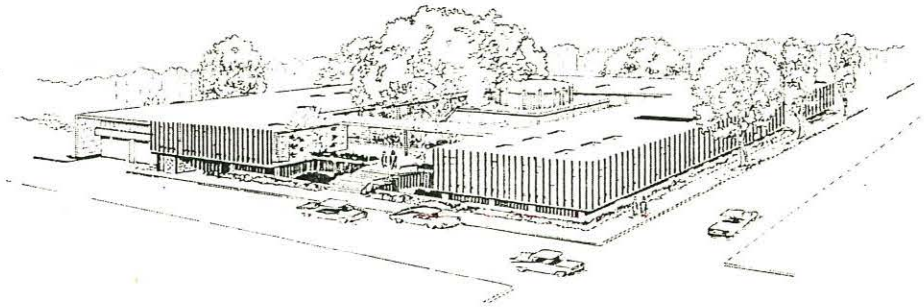
Secondary TSP attainment SIP must be adopted and submitted by July 1, 1980.

SIP must include:

- Identified attainment date.
- Implementation schedules for reasonable measures currently available (state and local determination).
- Commitment and schedules for further studies to look at additional measures to attain standard.
- Commitments to adopt and implement those reasonable and effective measures as may be identified by the further studies in time to meet identified attainment date.

EPA also promised additional detailed data within two months. All of this is to be confirmed in writing by EPA.

CITY OF EUGENE



OFFICE OF THE CITY MANAGER — P.O. BOX 1967 — EUGENE, OREGON
503/687-5010 97401

July 20, 1979

Mr. Bill Young, Director
State Department of Environmental Quality
PO Box 1760
Portland OR 97208

Dear Mr. Young:

I am writing on behalf of the Eugene City Council in response to the agenda item establishing a quiet zone at the Environmental Quality Commission meeting on July 27. As you may be aware, the City Council has deliberated several times on the issue of motorized vessels in the Willamette River, including public hearings to receive testimony from our citizens. As a result, it is the position of the Council, by a 6:1 vote, that the Council go on record in opposition to all motorized vessels or other motorized devices on that part of the Willamette River within the city limits.

There were several reasons mentioned to support this position. First, the Council perceived safety hazards inherent in the conflict in the use of motorized vessels and others using the river such as swimmers, rafters, and canoeists. Secondly, the Council is concerned about the sound levels that result along the bicycle paths adjoining the river. Lastly, the Council saw a possible disturbance of the salmon spawning beds near the newly-completed bicycle bridge from the silt raised by the wakes of passing boats.

On behalf of the Council, I am requesting that this be read into the record of your hearing.

Sincerely yours,

Charles T. Henry

Charles T. Henry
City Manager

CTH:GP:pm/Fa5

cc: Joe Richards, EQC
Mel McMinn, State Marine Board

J.C.N.

July 25, 1979

Department of Environmental Quality
Willamette Valley Region
16 Oakway Mall
Eugene, Ore. 97401

Re: EQC moratorium hearing and content of the RR/SC Report publication
Final Report, Recommendations, Survey needs, Residents ballot,
chairman summation, Eugene policy and Area road work

It is very obvious the RR/SC Task Force has been stacked with persons in the majority who do not represent the majority areas residents. It does seem incongruous the majority residents' desires are only represented in a minority report by Vera Heintz.

The solution, and in accord with the 1990 and 2000 plans, would be to require the minority representations in the "majority report" persons to be "invited" to sell out of the RR/SC area and resettle inside the present Eugene boundary. The PLANS call for saturating the Eugene core area before the boundaries, that is not being done, are extended/ expanded/ more circumscribed.

The moratorium should be continued in the RR/SC areas until such time as all other Eugene City areas are saturated with constructions to the stated limits and extended westwardly and southerly in the same manner. The good agricultural ground in the RR/SC areas should be maintained for as long as possible. That could be 15 to 20 years before expansion would need to be extended in this N.W. direction.

The outsized sewering plant outfall for the Eugene-Springfield incorporated areas is planned to dump their wastes closer to Junction City. The 1/2 to 3 nitrate concentrations in that outfall compares with the so-called ground water contamination from septic tank drains. The higher nitrate concentrations are from the leaking sewer lines in Eugene and the not-maintained septic tanks and drain fields.

This area's groundwater was contaminated to the point of requiring boiling of the water before humans could safely use it as early as the 1930s. The situation has not improved. It will not be improved — for multiple reasons.

The ground water below the "hardpan" used to be acceptable. It was here in this area of R.R.. Our well has not been used for years, so its present condition is not known to this writer. It is assumed the concentrations of ground water contamination will have penetrated the below-hardpan water, at least with seepage.

more

J.C.N.

Whether or not Eugene would require sidewalks, curbs and gutters upon annexation should be extraneous to present considerations because the areas' votes record denies the possibility of such annexation. This makes all annexation considerations moot — for many more years.

Widening RR to five lanes is a travesty, an expensive one. The green way can support a two-lane, outbound from Eugene, street (or thoroughfare) with connectors to the east-west lanes to provide a very serviceable traffic grid pattern. The costs of widening RR will exceed that cost for resurfacing the present two-lanes and building a two-lane outbound thoroughfare from Eugene. River Road could and would then become a two-lane southbound thoroughfare.

The RR/SC task force, chaired by Mr. McCulloch, does seem to have provided only a minority opinion as a majority report, while the majority opinion is carried as a minority report. His seeming insult to the majority mentality does seem rather a reflection of the mental capabilities of the majority of that Task Force. They seem to have built their opinion "building" at a considerable distance above the basic foundation. That report suggests a lot of wishful thinking occupying such otherwise unoccupied space between that "building" and its basic foundation.

A septic tank maintainance program should not be forced on this area. Any monopoly practice/privilege tends to deteriorate to a milking-machine practice. The residents should be provided information on septic tank and drain fields maintainence. Their option to do so should be their own. If they do not do such maintainance, the place should be condemned and torn down or moved to an area with a sewer system to which its outfall could be connected.

That would cost the occupant/owner a fortune, so maintainence could and would become a primary consideration, if the occupant/owner wished to remain in the area — and not have a major expense move/expense with which to contend.

Ideal options seem sacrificed to expediency — increasingly so. If the powers-that-be would require new constructions to pay 100 percent of the systems services to that construction, the expediency necessity of adding to existing systems services could be eased or eliminated. Now cities or towns could then be promoted and people/pollutions would be disbursed over wider areas. With the present methods people-pollutions are ever more concentrated. This not seeing and utilizing ideals, but supporting leeches, indicates faults in the mental agilities and the exact abilities, of too many persons doing the deciding of current and future issues. This situation is too evident to be not very noticeable.

John C. Neely, Jr.
1600 Horn Lane
Eugene, Ore. 97404

AICO-UTILITY Line Form No.

RAIN FALL .2 6.5 3 3.1 9.6 3.4 4.6 3.0

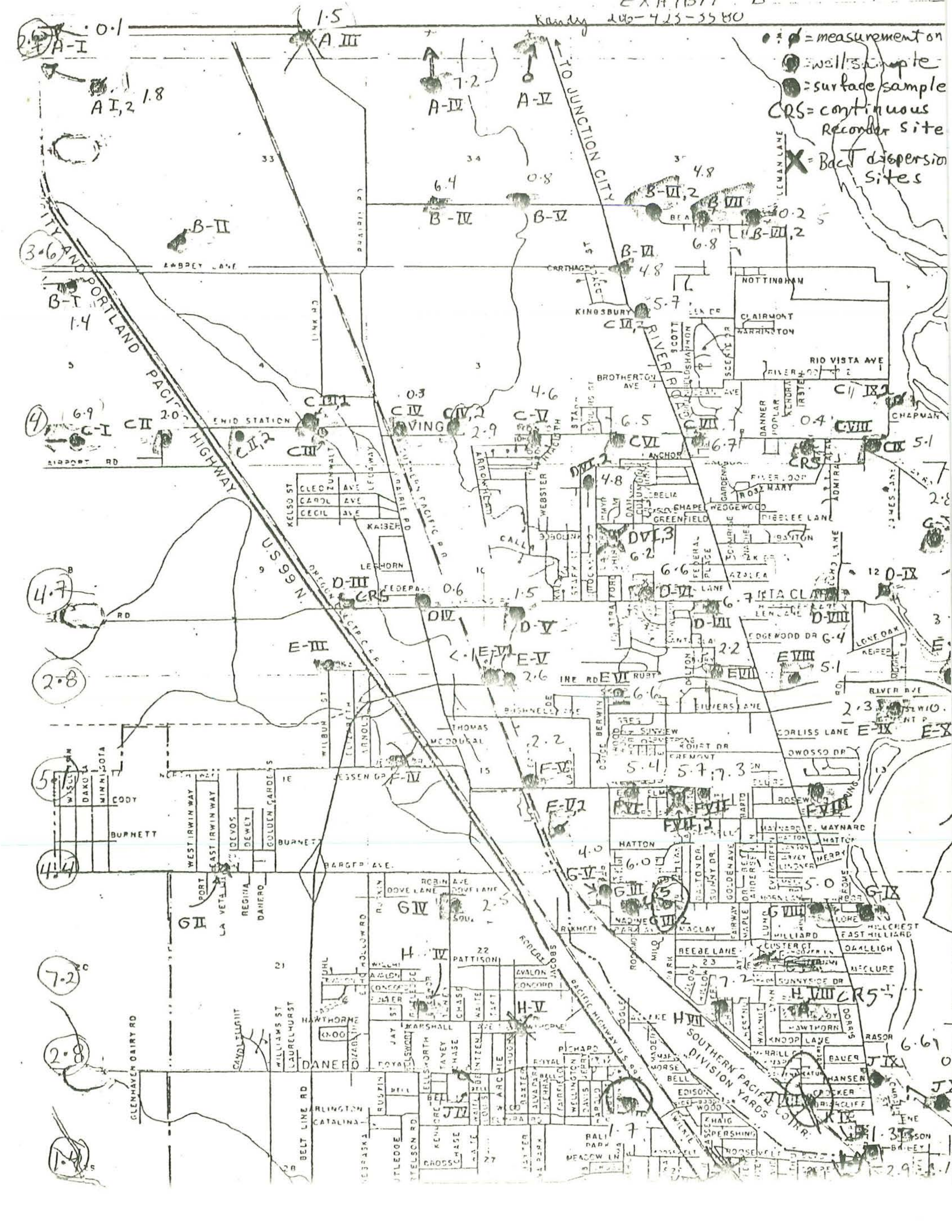
NO_3-N

CODE	OCT 1	NOV 2	DEC 3	JAN 4	FEB 5	MAR 6	APRIL 7	MAY 8	<AVERAGE> 9
AI	0.1								0.1
AI,2	1.3	1.4	1.8	2.0	1.7	2.2	2.0		1.8
AIII	1.8	1.2							1.5
AIV		4.4	4.6	5.8	7.8	10.5	10.3		7.2
AV									
B-I	1.3	1.2	1.3	1.4	1.4	1.6	1.4		1.4
B-II									
B-IV	9.7	4.0	2.5	2.1	12.8	8.0	5.6		6.4
B-V					1.4	0.2			0.8
B-VI			5.0	4.9	3.7	5.3	4.9		4.8
B-VII			6.7	7.8	6.1	6.7	6.5		6.8
B-VII-2				0.1	0.1	0.2	0.2		0.15
B-VI-2	4.7	6.0	5.9	6.2	4.1	5.6	0.2	5.4	4.8
C-I	8.4	5.2	6.2	7.6	11.8	4.6	4.7		6.9
CII	1.5	1.9	1.7	1.7	1.0	1.3	4.7		2.0
CII 2									
CIII									
CIII-2									
CIV		0.5	0.4	0.6	0.1	0.2	0.1		0.3
CIV 2			3.2	3.6	2.7	2.4	2.1		2.9
CV	5.8	4.1	5.1	6.7	3.9	2.9	3.7		4.6
CVI	7.1	7.0	6.4	7.5	6.6	6.1	5.0		6.5
CVII	7.0	8.2	6.7	7.3	5.5	6.1	5.9		6.7
CVIII	0.1	0.5		0.1		0.5	0.8		0.4
CVI-2			4.4	8.0	4.9	6.0		5.4	5.7
CIX				3.4	4.9	4.9	7.5		5.1
CIX 2									
CX				1.1	3.7	3.7	2.5		2.8
DIII									
DIV	1.4	1.2	0.8	0.9	0.3	0.3	0.4		0.6
DV					2.9	0.1			1.5
DVI						6.9	6.3		6.6
DVII		4.8	5.0	6.0	7.8	6.7	6.4		6.7
DVII-3 (Probably DVI3)				6.3		6.5	5.9	6.1	6.2
DVI 2	0.1	1.3	4.4	8.0	6.5	6.7		6.7	4.8
DVIII				7.4	6.5	6.6	5.3		6.4
DIX									

Rainfall .0.2 6.5 3. 3.1 9.6 3.4 4.6 3.0

NO_3-N

CODE	OCT	NOV	DEC	JAN	FEB	MAR	APRL	MAY	<AVG>
E-III									
E V					2.6				2.6
E V2			<.1	<.1	<.1	<.1		<.1	<.1
E VI	5.4	3.2	7.4	8.1		8.2	6.8	7.3	6.6
E VII	0.1		0.4	1.0		4.4	3.4	3.7	2.2
E VIII	5.8	3.9	9.3	4.5		3.7	3.2	5.4	5.1
E IX (AT SLUDGE BEDS)						3.4	1.2	2.2	2.3
E X				1.9		5.2	3.5	2.4	3.2
EX2	.2	.3	.3	.2	.3			.3	0.3
F IV									
F V	2.8	2.0	2.0	2.7		2.3	1.8	1.8	2.2
F VI	0.6	2.7	7.0	8.0		7.4	6.4	6.2	5.4
F VII	6.9	7.0	8.0	8.7		7.0	6.9	7.1	7.3
F VII -2			5.9	6.6		5.4	5.4	5.8	5.7
F VIII									
F V2									
G II									
G IV		2.3	1.9	2.4		2.6	2.6	3.0	2.5
G V					5.2	3.2		3.5	4.0
G VI				6.2		6.5	5.5	6.0	6.0
G VI 2									
G VII									
G VIII	6.4	6.0	5.1	5.0		4.0	4.1	4.7	5.0
G IX									
H IV									
H V									
H VII	8.5	5.9	5.9	9.0		6.7	7.0	7.1	7.2
H VIII									
J IV									
J VI		1.8	1.6	1.7	1.7		1.5	2.0	1.7
J VII									
J IX						7.2	5.9		6.6
J X		0.1	0.1	0.2				.1	.1
K VII									
K VIII		.6	.7	1		2.8	1.5	1.7	1.4
K VIII -2		.2	.1	.2		.2	.1		.16
K IX	1.4	1.8	2.4	2.7		4.6	4.0	3.0	


= measurement on
= well sample
= surface sample
CRS = continuous Recorder Site
X = Bact dispersion Sites
TO JUNCTION CITY
CITY AND PORTLAND PACIFIC HIGHWAY
US 99 N.
OREGON ELECTRIC R.R.
SOUTHERN PACIFIC DIVISION YARDS
SOUTHERN PACIFIC R.R.
PACIFIC HIGHWAY U.S. 99
RIVER RD
ENID STATION
AIRPORT RD
IRVING
PRAIRIE RD
NOTTINGHAM
CLAIRMONT
HARRINGTON
RIO VISTA AVE
BROTHERTON AVE
KINGSBURY
CARTHAGE
CHAPMAN
RIVER LOOP
ROSEMARY
WEDGEWOOD
GREENFIELD
DIBBLEE LANE
BANTON
AZALEA
EDGEWOOD DR
LONE OAK
RIVER AVE
CORLISS LANE
OWOSSO DR
FREMONT
ROSEWOOD
MAYNARD
HATTON
HILLIARD
OAKLEIGH
MCCLURE
SUNNYSIDE DR
HAWTHORN
RASOR
BAUER
HANSEN
CROCKER
KNOOP LANE
BEEBE LANE
MACLAY
NADINE
DOVE LANE
ROBIN AVE
PATTISON
AVALON
CONCORD
HAWTHORNE
MARSHALL
DANEBO
BARGER AVE.
BURNETT
CODY
WEST IRWIN WAY
EAST IRWIN WAY
DEVOS
DEWEY
GOLDEN GARDENS
WILBUR ST
THOMAS
MCDOUGAL
BUSHNELL
BERWIN
KAISER
LEGHORN
CLEO AVE
CAROL AVE
CECIL AVE
KELSO ST
WEBSTER
ARROWHEAD
GLENHAVEN DAIRY RD
BELT LINE RD
ARLINGTON
CATALINA
WILLIAMS ST
LAURELHURST
CANDLELIGHT
BALI PARK
MEADOW LN
ROOSEVELT
PERSHING
EDISON
BELL
MORSE
RICHARD
ROYAL
WELLINGTON
ARCHIE
JACOBS
HOLLOWAY
DALTON DR
SUNNY DR
GOLDEN AVE
MAPLE
FAIRWAY
CUSTER CT
HILLCREST
EAST HILLIARD
A-I
A III
A-IV
A-V
B-II
B-IV
B-V
B-VI
B VII
C-I
C II
C III
C IV
C-V
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C VIII
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F VI
F VII
F VIII
G II
G IV
G-V
G III
G VIII
G-IX
H-IV
H-V
H VII
H VIII
J IX
CRS

EXHIBIT C

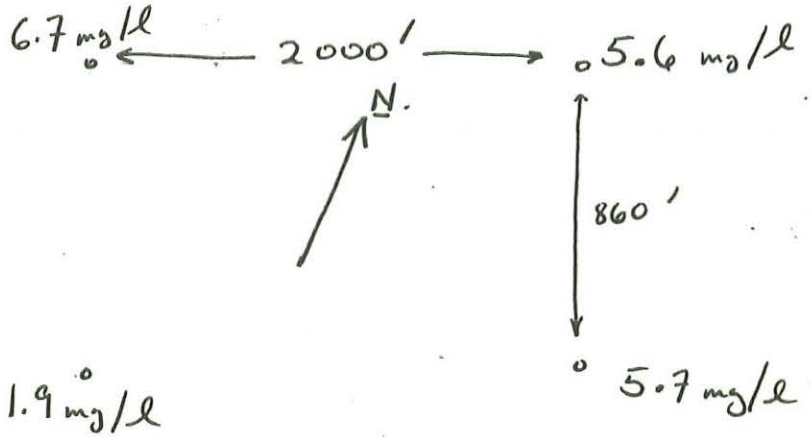
JUNCTION City Wells

Well	DEPTH	NO_3-N CONCENTRATION 1975	1979
11TH & ELM	SHALLOW	4.2 mg/l	2.4 mg/l
5TH & MAPLE	ALTERED	(35') 3.3 "	(195') < 0.1 "
8TH & DEAL	35'	6.0	—
8TH & Front	125'	1.3	0.7
3RD & Cedar	140	1.3	—

Coburg Wells

		1977	1979
#5 & 6 (City wells)	200'+	2.75	1.0
#4 (Pioneer Valley Well)	200'+	—	6.4

Junction City Test PLOT 40 ACRES.



MEMORANDUM

lane county

TO BOARD OF COUNTY COMMISSIONERS

FROM WATER POLLUTION CONTROL DIVISION

SUBJECT INTERIM REPORT: RIVER ROAD/SANTA CLARA GROUND WATER STUDY. DATE JULY 25, 1979

REQUESTED ACTION:

1) Accept the River Road/Santa Clara Ground Water Study Interim Report; and
2) Direct staff to pursue one of the following alternatives:
   a) Discontinue participation in the study; or
   b) Continue the study as presently designed; or
   c) Continue the study and incorporate recommended improvements.

SUGGESTED MOTIONS:

THAT THE BOARD ACCEPT THE RIVER ROAD/SANTA CLARA GROUND WATER STUDY INTERIM REPORT AND THAT STAFF IS DIRECTED TO:

1) DISCONTINUE PARTICIPATION IN THE STUDY; OR

2) CONTINUE THE STUDY AS PRESENTLY DESIGNED; OR

3) CONTINUE THE STUDY AND ASSIST L-COG IN THE APPLICATION FOR ADDITIONAL GRANT MONIES TO PROVIDE RECOMMENDED STUDY IMPROVEMENTS.

BACKGROUND AND ANALYSIS:

The River Road/Santa Clara Ground Water Study Interim Report has been reviewed and accepted by EPA Region X and DEQ 208 personnel. The Interim Report has been publicly presented to residents of River Road/Santa Clara district. Public agency and ctizen concern has been expressed that while data collected to date indicate the possible presence of impact on the shallow aquifer that data is incomplete and inconclusive at this time. Concern has also been expressed that the study as presently designed:

1) will not characterize shallow aquifer influence on the deep aquifer.
2) will not assess the impact of sludge disposal alternatives for the metropolitan waste water facility on the shallow aquifer.
3) does not compare operating drainfield efficiency to the dispersion decay test analysis.
4) Limits the number of development alternatives which may be analyzed.

EPA and DEQ personnel have acknowledged that these are valid concerns and have indicated that grant monies will be made available upon application.

RLB/tcb

MEMORANDUM

lane county

TO BOARD OF COUNTY COMMISSIONERS

FROM WATER POLLUTION CONTROL DIVISION

SUBJECT INTERIM REPORT - RIVER ROAD/SANTA CLARA GROUND WATER STUDY

DATE JULY 25, 1979

The Interim Report has been published as required by contract with the Environmental Protection Agency.

The Interim Report was reviewed by the Oregon Operations Office EPA and Region X of the Environmental Protection Agency and the Oregon Department of Environmental Quality, 208 Section on July 16, 1979, in Portland.

The study was accepted as adequate to answer those questions it was designed to answer. It was acknowledged that the report indicates the possible presence of shallow aquifer quality problems but that data to date is inconclusive.

Several options to improve the study were discussed and acknowledged as desireable. They are:

A) Characterize the interaction between the shallow and deeper aquifer levels by sampling up to ten (10) deep wells existing within the study boundaries.

B) Characterize bacterial dispersion and decay of operating disposal fields of various ages for homes in the study area and compare the results of the controlled testing performance at the Shirley site with the results from actual systems.

C) Increase the number of alternative development concepts for model analysis by inclusion of:

   1) The development concept proposed by the River Road/ Santa Clara Task Force;

   2) The land use proposals in the 1990 Plan update;

   3) Additional development concepts presented by the River Road and Santa Clara community organizations.

D) Accurately identify those wells in the study area that are currently being used for residential consumption and:

   1) Perform necessary well testing;

   2) Notify property occupants of test results;

   3) Determine water availability from purveyor's (districts and EWEB);

   4) Notify occupants of recommended actions.

These additions are considered an improvement to the study design by personnel of EPA, DEQ and Lane County. Monies reserved in the original grant by EPA will be considered for allocation upon application.

Public presentation of the report was provided at a meeting hosted by the Santa Clara Neighborhood Association, at Madison Jr. High on July 17, 1979.

Public attitude towards the groundwater study and the Interim Report is difficult to assess due to the intimate relationship between the study, the EQC subsurface moratorium, and local City of Eugene annexation opposition. Questions and issues specific to the study design are in the process of being extracted from tapes of the meeting. The consultant will respond to the specific questions and the responses will be provided to the Board and the River Road and Santa Clara neighborhood organizations.

ALTERNATIVES BEFORE THE BOARD:

1) Choose not to participate in continuing the groundwater study.

2) Continue the present study as designed

3) Adjust the present study to include newly identified improvements.

ALTERNATIVE ASSESSMENT:

Action: Choose not to participate in continuing the study.

Result: Question regarding the shallow aquifer would remain largely unanswered. Efforts expended to date would be lost. Fiscal impact $8,000.00 1/2 FTE position.

Action: Continue the present study.

Result: Study completion would produce information on the shallow aquifer and development impacts as identified in July 1978. Fiscal impact expendature of budget funds, receipt of budget revenue net $8,000.00 1/2 FTE cost to County.

Action: Adjust the present study to include newly identified improvements.

Result: Increased alternatives for the area identified; relationship between shallow and deep aquifer presented; performance of disposal field trenches on bacterial removal quantified; and wells serving homes analyzed. Fiscal impact $26,500 grant increase. $19,875.00 Federal and $6,625.00 Local. Personnel time match for the County share.

We recommend alternative 3 be selected. Adjustment of the current study to provide identified improvements be adopted by the Board for the following reasons:

A) Additional actions by the 1990 Plan update, sludge disposal site selction by MWMC, and the River Road/Santa Clara Task Forece recommendation need to be assessed as a portion of this study.

B) The deeper level of the aquifer needs to be analyzed to determine if it is being influenced by the shallow aquifer and if a special well standard is a viable option.

C) Disposal field trenches produce mats that reduce bacterial migration. Efficiency should be correlated.

D) Wells for domestic consumption are being used and may be of public health significance to the consumer.

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR MARION COUNTY

CITY OF EUGENE, An Oregon Municipal Corporation,

Petitioner,

-vs-

THE STATE OF OREGON ENVIRONMENTAL QUALITY COMMISSION, by and through its members, JOE B. RICHARDS, RONALD M. SOMERS, ALBERT H. DENSMORE, FRED BURGESS, and THE STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, by and through its Director, WILLIAM H. YOUNG,

Respondents.

Case No. 113770

C I T A T I O N

TO: Honorable Albert H. Densmore, Member
Environmental Quality Commission
Medford City Hall - 411 West 8th
Medford, Oregon 97501

IN THE NAME OF THE STATE OF OREGON, You are hereby cited to appear before the above entitled Court at the Marion County Courthouse on the 7th day of August, 1979, at 9:30 o'clock a.M., then and there to show cause, if any you have, why a fine in an amount not to exceed $500 should not be assessed against you.

Issued by Order of the above entitled Court this 17th day of July, 1979.

EDWIN P. MORGAN
CIRCUIT COURT CLERK

By /s/ D. FRENCH

Citation.

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR MARION COUNTY

CITY OF EUGENE, An Oregon Municipal Corporation,

Petitioner,

-vs-

THE STATE OF OREGON ENVIRONMENTAL QUALITY COMMISSION, by and through its members, JOE B. RICHARDS, RONALD M. SOMERS, ALBERT H. DENSMORE, FRED BURGESS, and THE STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, by and through its Director, WILLIAM H. YOUNG,

Respondents.

Case No. 113770

ORDER GRANTING PEREMPTORY WRIT OF MANDAMUS

Petitioner, City of Eugene, having filed a Petition for Peremptory Writ of Mandamus, and the Court having considered the Petition and Memorandum in Support thereof, and the Court finding that Petitioner has no plain, speedy and adequate remedy at law and that the right of Petitioner to the relief demanded is clear and no valid excuse can be given for not performing such duties,

IT IS HEREBY ORDERED that the Petition be granted and that the Clerk of this Court issue Peremptory Writs of Mandamus to Respondents requiring them to comply with the terms of the present Oregon State Implementation Plan with respect to open agricultural burning until such time as that plan is revised by final agency action of the United States Environmental Protection Agency.

IT IS FURTHER ORDERED that Citation be issued to each Respondent directing him or her to appear and show cause to this Court on the 7th day of August, 1979 why a fine not to exceed $500.00 should not be assessed against each Respondent.

Dated this 17th day of July, 1979.

/s/ Val D. Sloper
Circuit Court Judge

Order -

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR MARION COUNTY

CITY OF EUGENE, An Oregon Municipal Corporation, Petitioner, -vs- THE STATE OF OREGON ENVIRONMENTAL QUALITY COMMISSION, by and through its members, JOE B. RICHARDS, RONALD M. SOMERS, ALBERT H. DENSMORE, FRED BURGESS, and THE STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, by and through its Director, WILLIAM H. YOUNG, Respondents.	Case No. 113770 PETITION FOR PEREMPTORY WRIT OF MANDAMUS

Petitioner, the City of Eugene, alleges:

I

Petitioner, City of Eugene, is an Oregon Municipal Corporation organized and existing under and by virtue of an Act of the Twenty-Third Legislative Assembly of the State of Oregon in Regular Session filed in the office of the Secretary of State, February 18, 1905, entitled "An Act to Incorporate the City of Eugene", and subsequent Charter amendments. The City of Eugene is located within the boundaries of Lane County, Oregon.

II

Respondents Joe B. Richards, Ronald M. Somers, Albert H. Densmore, and Fred Burgess are members of the Oregon Environmental Quality Commission created pursuant to ORS 468.010. Respondent William H. Young is the Director of the Department of Environ-

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

mental Quality. All of the Respondents exercise their functions as state officers within Marion County.

III

The Oregon Environmental Quality Commission (EQC) is charged by law pursuant to ORS 468.015 to create policies and regulations to be administered by the Oregon Department of Environmental Quality (DEQ). Pursuant to ORS 468.458 the DEQ has a nondiscretionary duty to issue permits for the open agricultural burning of straw and stubble residue from perennial and annual grass seed crops.

IV

Under the Clean Air Act, 42 U.S.C. § 7410, each state is required to adopt and submit to the Environmental Protection Agency Administrator a plan which provides for the implementation, maintenance and enforcement of primary and secondary national ambient air quality standards. Such plans must contain, inter alia, sufficient emission limitations, schedules, and timetables of compliance with such limitations for air polluters to insure attainment and maintenance of such air quality standards. These state implementation plans (SIP) once submitted and approved are binding upon the states until any revisions thereto are approved by the EPA Administrator.

V

The Oregon State Implementation Plan was revised April 18, 1977 (42 Fed. Reg. 20, 131 (1977)) incorporating the provisions of Or Laws 1975, Ch 559 (codified as ORS 468.455 through

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

468.485). See, 40 CFR 52.1970(c)(23)(1978). Or Laws 1975, § 11, (ORS 468.475) prohibited the EQC from issuing more than 50,000 acres of permits for the 1979 burning season. That restriction within the Oregon SIP has not been amended or revised since that time.

VI

On May 4, 1979, the Department of Environmental Quality submitted a State Implementation Plan revision request pertaining to field burning to the Environmental Protection Agency Region X. By this request Oregon seeks an increase in the number of allowable permits for field burning to a maximum of 180,000 acres, as well as certain operational rule modifications. As of the date of filing of this Petition, EPA has taken no action with respect to this request. Should such request be tentatively approved there will be a period of time before such revision is effective inasmuch as notice of formal rulemaking procedure is necessary before EPA action becomes final. Until such time as the revision becomes final, the current SIP restrictions are operative.

VII

The Environmental Quality Commission adopted rules allowing the issuance of permits for the burning of 198,000 acres for the 1979 burning season at the EQC meeting of December 15, 1978. Pursuant to such rules, the DEQ issued 198,000 acres of permits in May, 1979.

VIII

Under the Clean Air Act § 116, 42 U.S.C. § 7416, if an

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emission limitation is in effect under an applicable implementation plan, a state may not adopt or enforce any less stringent emission limitation. Under the Clean Air Act § 110(h), 42 U.S.C. § 7410(h), the State may take no action modifying the requirements of an implementation plan except for certain discrete categories of actions, i.e., plan revisions. The issuance of 198,000 acres of burning permits for the 1979 burning season is a less stringent emission limitation than the limitation to 50,000 acres and does not fall within the excepted categories of § 110(h) of the Act.

IX

Respondents in authorizing and issuing permits allowing the burning of more than 50,000 acres of grass seed and cereal grain fields during the period July 1, 1979 to October 31, 1979 acted in contravention of an emission limitation mandated under the applicable State Implementation Plan which disallows the issuance of greater than 50,000 acres of permits. By such actions Defendants violated the Clean Air Act §§ 110(h) and 116.

X

Petitioner is adversely affected by such actions of Respondents. The Eugene-Springfield area has been designated as a non-attainment area in meeting federal air quality standards for particulate matter. An increase in burning from 50,000 to 180,000 acres will cause further emissions of 20,000 tons of particulates into the airshed which includes the Eugene-Springfield area. Respondents are now charging a fee of $2.50 per acre for

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each burning permit, whereas the present SIP requires a charge of $8.00 per acre. If a limit of 50,000 acres is in effect during this burning season the sum collected from the present charges for such permits will be insufficient to fund Respondents' smoke management program.

XI

By letters of May 18, 1979, June 19, 1979, and July 10, 1979, copies of which are attached hereto, marked Exhibits "A", "B", and "C" respectively, and by this reference incorporated herein, Petitioner has requested Respondents to comply with applicable law, but Respondents have refused to do so. Petitioner has further requested the Attorney General to initiate a mandamus action to compel such compliance but the Attorney General has declined to do so.

XII

Petitioner has no plain, adequate or speedy remedy at law.

WHEREFORE, Petitioner prays that:

1. A peremptory writ of mandamus issue out of this Court directed to each Respondent commanding them immediately after their receipt of the writ to comply with the provisions of the present Oregon State Implementation Plan with respect to open agricultural burning until such time as that plan is revised by final agency action of the United States Environmental Protection Agency, and that they then return the writ with the proper certificate annexed.

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ATTORNEYS AND COUNSELORS AT LAW
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EUGENE, OREGON 97401
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2. That Citation issue directing each Respondent to appear and show cause on the 7th day of AUGUST, 1979 why a fine in an amount not to exceed $500.00 should not be assessed against each Respondent; and

3. For such other relief as may be just and proper.

Respectfully submitted,

JOHNSON, HARRANG & MERCER

By _____
Stanton F. Long - OSB 67077
Timothy J. Sercombe
Of Attorneys for Petitioner

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
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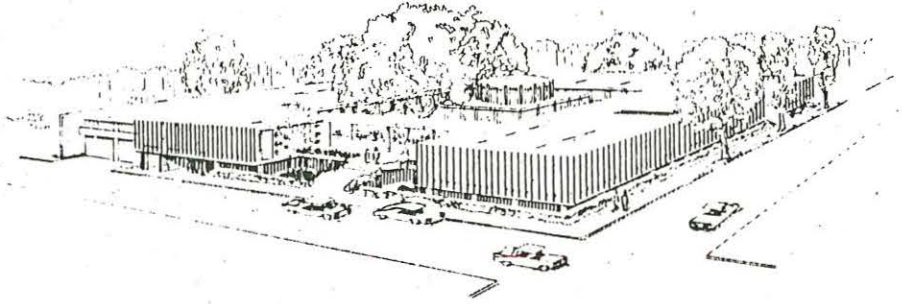
TELEPHONE (503) 485-0220

CITY OF EUGENE



CIVIL DEPARTMENT — 101 EAST BROADWAY, SUITE 401 — 503/687-5080
EUGENE, OREGON 97401

May 18, 1979

Joe Richards, Chairman
Environmental Quality Commission
777 High Street
Eugene, Oregon 97401

Ronald M. Somers
106 E. 4th Street
P. O. Box 618
The Dalles, Oregon 97058

Grace S. Phinney
1107 N.W. 36th
Corvallis, Oregon 97330

The Honorable Albert H. Densmore
Medford City Hall
411 W. 8th
Medford, Oregon 97501

Jacklyn C. Hallock
c/o Ted Hallock Insurance
2445 N.W. Irving
Portland, Oregon 97210

William H. Young, Director
Department of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Re: Notice of Intent to Sue Under 42 U.S.C. §7604(b)

Ladies and Gentlemen:

On December 15, 1978, the Environmental Quality Commission adopted rules allowing the issuance of permits for agricultural open burning during 1979 for more than 50,000 acres. Under the present State Implementation Plan the Environmental Quality Commission may not by order issue permits for the burning of more than 50,000 acres. 40 Fed. Reg. 20131 (April 18, 1977). According to state law, the Department of Environmental Quality will issue permits by June 1, 1979 for the burning of acres in excess of this limitation.

Where the Environmental Protection Agency has approved an applicable implementation plan the State may not adopt or enforce a less stringent one. See, Air Pollution Variance Bd. v. Western Alfalfa, 416 U.S. 861, 863 (1974); St. Joe Minerals Corp. v. Environmental Pro. Agcy., 508 F2d 743, 748 (3rd Cir. 1975). Clean Air Act §§110(h), 116, 42 U.S.C. §§7410(h), 7416. The adoption of rules relaxing present SIP controls and emission limitations on field burning by the EQC violated the Clean Air Act §§110(h) and 116. Accordingly, its members are amenable to suit under §304 of the Act.

We wish to advise you that the City of Eugene will commence an action under the Clean Air Act §304, 42 U.S.C. §7604(a)(1) against the individual members of the EQC and the operating head of the Department of Environmental

EXHIBIT "A"

Quality unless appropriate action is taken. Declaratory and injunctive relief will be sought. In giving this notice the City of Eugene does not waive the contention that no notice of intent to sue is needed by reason of its prior notice of April 12, 1978.

Very truly yours,

JOHNSTON, HARRANG & MERCER
CITY ATTORNEYS

Stanton F. Long

SFL:jlb

cc: Douglas M. Costle, Administrator
Environmental Protection Agency
Washington, D.C. 20460

Donald P. Dubois, Regional Administrator
Environmental Protection Agency, Region X
1200 Sixth Avenue
Seattle, Washington 98101

Governor Victor G. Atiyeh
Office of the Governor
State Capitol
Salem, Oregon 97310

Lane County Legislative Delegation

Professor John Bonine
School of Law
University of Oregon
Eugene, Oregon 97403

Honorable James Weaver
Congressman, 4th District
U.S. House of Representatives
1238 Longworth House Office Building
Washington, D.C. 20515

June 19, 1979

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED

Joe Richards, Chairman
Environmental Quality Commission
777 High Street
Eugene, Oregon 97401

The Honorable Albert H. Densmore
Medford City Hall
411 W. 8th
Medford, Oregon 97501

Ronald M. Somers
106 E. 4th Street
P. O. Box 618
The Dalles, Oregon 97058

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William H. Young, Director
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P. O. Box 1760
Portland, Oregon 97207

Governor Victor G. Atiyeh
Office of the Governor
State Capitol
Salem, Oregon 97310

Douglas M. Costle, Administrator
Environmental Protection Agency
Washington, D.C. 20460

Donald P. Dubois, Regional Administrator
Environmental Protection Agency, Region X
1200 Sixth Avenue
Seattle, Washington 98101

Re Supplemental Notice of Intent to Sue Under 42 U.S.C. §7604(b)

Ladies and Gentlemen:

By previous notice of May 18, 1979 you were advised that the City of Eugene intends to commence suit to restrain the issuance of open agricultural burning permits in excess of the 50,000 acre level mandated by the present Oregon State Implementation Plan. That notice was based upon the adoption of rules by the EQC on December 15, 1978 which contravened the present SIP restrictions.

According to state law the Department of Environmental Quality has now issued permits for this summer's burning. This letter is to give you notice that the City of Eugene regards that permit issuance and any sub-

EXHIBIT "B"

sequent burning authorization in excess of 50,000 acres to be violative of the Clean Air Act. These actions are within the ambit of our May 18, 1979 Notice and will be the subject of forthcoming litigation under CAA §304.

Very truly yours,

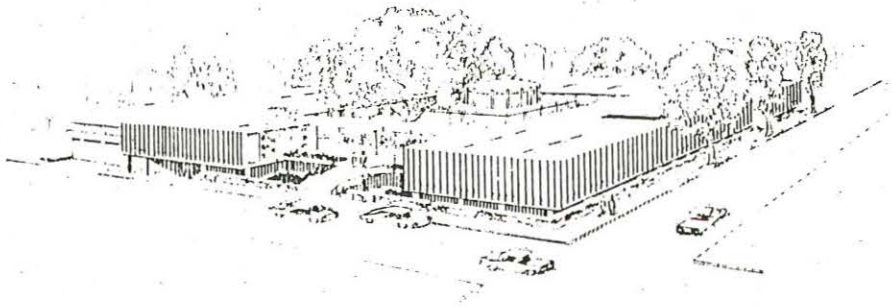
JOHNSON, HARRANG & MERCER
CITY ATTORNEYS

Timothy J. Sercombe

TJS:jlb
cc: Professor John E. Bonine
Honorable James Weaver
Northwest Legal Advocates

bcc: City Manager
City Councilors
Lane Co. Legislative Delegation

CITY OF EUGENE



CIVIL DEPARTMENT — 101 EAST BROADWAY, SUITE 401 — 503/687-5080
EUGENE, OREGON 97401

July 10, 1979

Joe B. Richards, Chairman
Environmental Quality Commission
777 High Street
Eugene, Oregon 97401

Honorable Albert H. Densmore
Medford City Hall
411 West 8th
Medford, Oregon 97501

Ronald B. Somers
106 East 4th Street
P. O. Box 618
The Dalles, Oregon 97058

Jacklyn C. Hallock
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2445 N. W. Irving
Portland, Oregon 97210

Grace S. Phinney
1107 N. W. 36th
Corvallis, Oregon 97330

William H. Young, Director
Dept. of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Re: Enforcement of Present Oregon State Implementation Plan

Ladies and Gentlemen:

By letters of May 18, 1979 and June 19, 1979 you were notified that the City of Eugene intended to commence an action under the Clean Air Act § 304 unless appropriate action was taken to cure the violations of the Act cited therein. As you are aware, the current Oregon State Implementation Plan limits the number of permits for open agricultural burning during the 1979 burning season to 50,000 acres. See, 42 Fed. Reg. 20, 131 (1977) (incorporating the provisions of Or. Laws 1975, Ch. 559). The fee for such permits by the terms of the SIP is $8.00.

It is our understanding that, contrary to the terms of the SIP, permits for the burning of 198,000 acres have already been issued this year and that a lesser fee was charged for each permit. Each grower's allocated acreage has been set on the premise that 180,000 acres is the appropriate ceiling. We suspect that you assume that the Environmental Protection Agency will approve a pending SIP revision which allows the issuance of a greater number of permits. We believe that EPA approval will not be forthcoming because of sub-

EXHIBIT "C"

stantive and procedural difficulties with the revision. In any event, approval, if it occurs, may not be an unconditional, final, formal act of the EPA until after the end of this year's burning season.

For the previous four burning seasons (1975, 1976, 1977, and 1978) the EQC has issued burning permits in excess of the applicable SIP limitation. Last year, a formal Notice of Violation was given to the State of Oregon by the EPA for the excess permits issued in 1977. Your actions in issuing more permits than the SIP allows indicates that violation will occur again this year.

This letter is to formally request that you convene an emergency telephone meeting of the EQC (as provided for under ORS 192.670) to consider the appropriate level of field burning until final agency action by the EPA on the SIP revision request. It is the number of permits issued by the state that is regulated by the SIP, and you have the duty to adhere to the SIP. Thus we ask that the EQC obey the present law and direct the Department of Environmental Quality Director to rescind all permits above 50,000 acres and to reallocate that acreage among those farmers who have registered fields for burning. This order to the DEQ would allow the re-issuance of the present permits only if a formal final EPA approval of a revision request occurs.

The law is clear. The Clean Air Act § 116, 42 U.S.C. § 7416 provides that:

> ". . . [I]f an emission standard or limitation is in effect under an applicable implementation plan . . . [a] State or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard or limitation under such plan or section."

Likewise, CAA § 110(h) provides that a state may not change a plan except by approved revision. See, Air Pollution Variance Bd. v. Western Alfalfa, 416 U.S. 861, 863 (1974); St. Joe Minerals Corp. v. EPA, 508 F.2d 743, 748 (3rd Cir. 1975). See, also, "Criteria for Proposing Approval of Revisions to Plans for Nonattainment Areas", 43 Fed. Reg. 21673, 21674 (1978).

The present obligation of the EQC has been formalized by Opinions of the Attorney General. 38 Op. Atty Gen. 1736, 1738-39 (1978); 38 Op. Atty Gen 1901, 1904 (1978). In the latter opinion the Attorney General holds that:

> "Thus, action by the state to permit field burning in excess of the acreage specified in the Oregon SIP would continue the state in violation of the CAA. If the state cannot obtain EPA approval of a revised plan

permitting burning of the 180,000 acres specified in ORS 468.475(2)(b), then provisions of the plan as presently approved clearly prevail. The mandate of ORS 468.475(2) and (5) would be nullified, preempted by limitations set forth in the SIP, and the state would have no authority to permit burning of more than 50,000 acres in 1978. Such preemption would arise under the Supremacy Clause of the United States Constitution, which provides:

> 'This Constitution, and the Laws of the United States which shall be made in pursuance thereof; . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.' US Const. Art VI, Cl.2.

"We point out that the EQC has an obligation to do its utmost to comply with both ORS 468.475 and the State Implementation Plan . . . . However, until EQC does in fact receive approval from the EPA to burn in excess of the 50,000 acres specified in the SIP as presently approved, EQC is subject to the limits set out in that plan, notwithstanding the directive of ORS 468.475.

". . . .

"We reiterate that the SIP as presently approved sets the limits which EQC must follow in issuing field burning permits. That limit is presently 50,000 acres. Therefore, until EQC receives approval from EPA to raise that limit, EQC may not authorize burning of more than 50,000 acres."

If you refuse to give assurance that you will comply with the SIP, we will take appropriate legal action. It is our belief and hope that your future actions will conform to law. Moreover, we hope you will act fairly and inform all concerned of how your agency intends to respond to this situation. Because you have authorized burning last week upon illegal permits, we must act promptly. We intend to commence action to require you to obey the law on July 17, 1979, and request a decision from you prior to that date which will obviate the need for legal action.

Very truly yours,

JOHNSON, HARRANG & MERCER
Attorneys for City of Eugene

By: Stanton F. Long

SFL:jw

STATE OF OREGON)
) ss.
County of LANE)

I, A. Keith Martin,
swear or affirm that I am the Assistant City Manager of the City of Eugene, Petitioner
and I believe the foregoing Petition to be true.

/s/ A. Keith Martin

Subscribed on oath or affirmation before me this 17th day of July, 1979.

/s/ Stanton F. Long
Notary Public for Oregon
My Commission Expires: 10-24-80

I certify that the foregoing Petition, Order and Citation
is a true and complete copy of the original.

DATED: July 17, 1979

Of Attorneys for Petitioner

I certify that on the _____ day of _____, 19___, I personally served a true and complete copy of this _____
on _____
by leaving the copy with his clerk in his absence at his office at _____
_____.

Of Attorneys for _____

I certify that on the _____ day of _____, 19___, I personally delivered a true and complete copy of this _____
to _____.

Of Attorneys for _____

I certify that on _____, I served the foregoing _____
_____ on each of the parties listed below by depositing, in the United States Post Office at Eugene, Oregon, for each, a true and complete copy thereof enclosed in a sealed envelope with postage paid, addressed to the respective attorney for each party, as shown below, at that attorney's regular office address.

_____ attorney for _____
_____ attorney for _____
_____ attorney for _____

Of Attorneys for _____

JOHNSON, HARRANG & MERCER
101 EAST BROADWAY, SUITE 400
EUGENE, OREGON 97401

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR MARION COUNTY

CITY OF EUGENE, An Oregon Municipal Corporation,

Petitioner,

-vs-

THE STATE OF OREGON ENVIRONMENTAL QUALITY COMMISSION, by and through its members, JOE B. RICHARDS, RONALD M. SOMERS, ALBERT H. DENSMORE, FRED BURGESS, and THE STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, by and through its Director, WILLIAM H. YOUNG,

Respondents.

Case No. 113770

PEREMPTORY WRIT OF MANDAMUS

TO: Honorable Albert H. Densmore, Member
Environmental Quality Commission
Medford City Hall - 411 West 8th
Medford, Oregon 97501

WHEREAS, a Petition, duly verified, has been filed in this Court by the Petitioner above named, and from said Petition it appears:

I

Petitioner, City of Eugene, is an Oregon Municipal Corporation organized and existing under and by virtue of an Act of the Twenty-Third Legislative Assembly of the State of Oregon in Regular Session filed in the office of the Secretary of State, February 18, 1905, entitled "An Act to Incorporate the City of Eugene", and subsequent Charter amendments. The City of Eugene is located within the boundaries of Lane County, Oregon.

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

II

Respondents Joe B. Richards, Ronald M. Somers, Albert H. Densmore, and Fred Burgess are members of the Oregon Environmental Quality Commission created pursuant to ORS 468.010. Respondent William H. Young is the Director of the Department of Environmental Quality. All of the Respondents exercise their functions as state officers within Marion County.

III

The Oregon Environmental Quality Commission (EQC) is charged by law pursuant to ORS 468.015 to create policies and regulations to be administered by the Oregon Department of Environmental Quality (DEQ). Pursuant to ORS 468.458 the DEQ has a nondiscretionary duty to issue permits for the open agricultural burning of straw and stubble residue from perennial and annual grass seed crops.

IV

Under the Clean Air Act, 42 U.S.C. § 7410, each state is required to adopt and submit to the Environmental Protection Agency Administrator a plan which provides for the implementation, maintenance and enforcement of primary and secondary national ambient air quality standards. Such plans must contain, inter alia, sufficient emission limitations, schedules, and timetables of compliance with such limitations for air polluters to insure attainment and maintenance of such air quality standards. These state implementation plans (SIP) once submitted and approved are binding upon the states until any revisions thereto are approved

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by the EPA Administrator.

V

The Oregon State Implementation Plan was revised April 18, 1977 (42 Fed. Reg. 20, 131 (1977)) incorporating the provisions of Or Laws 1975, Ch 559 (codified as ORS 468.455 through 468.485). See, 40 CFR 52.1970(c)(23)(1978). Or Laws 1975, § 11, (ORS 468.475) prohibited the EQC from issuing more than 50,000 acres of permits for the 1979 burning season. That restriction within the Oregon SIP has not been amended or revised since that time.

VI

On May 4, 1979, the Department of Environmental Quality submitted a State Implementation Plan revision request pertaining to field burning to the Environmental Protection Agency Region X. By this request Oregon seeks an increase in the number of allowable permits for field burning to a maximum of 180,000 acres, as well as certain operational rule modifications. As of the date of filing of this Petition, EPA has taken no action with respect to this request. Should such request be tentatively approved there will be a period of time before such revision is effective inasmuch as notice of formal rulemaking procedure is necessary before EPA action becomes final. Until such time as the revision becomes final, the current SIP restrictions are operative.

VII

The Environmental Quality Commission adopted rules allowing the issuance of permits for the burning of 198,000 acres

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
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for the 1979 burning season at the EQC meeting of December 15, 1978. Pursuant to such rules, the DEQ issued 198,000 acres of permits in May, 1979.

VIII

Under the Clean Air Act § 116, 42 U.S.C. § 7416, if an emission limitation is in effect under an applicable implementation plan, a state may not adopt or enforce any less stringent emission limitation. Under the Clean Air Act § 110(h), 42 U.S.C. § 7410(h), the State may take no action modifying the requirements of an implementation plan except for certain discrete categories of actions, i.e., plan revisions. The issuance of 198,000 acres of burning permits for the 1979 burning season is a less stringent emission limitation than the limitation to 50,000 acres and does not fall within the excepted categories of § 110(h) of the Act.

IX

Respondents in authorizing and issuing permits allowing the burning of more than 50,000 acres of grass seed and cereal grain fields during the period July 1, 1979 to October 31, 1979 acted in contravention of an emission limitation mandated under the applicable State Implementation Plan which disallows the issuance of greater than 50,000 acres of permits. By such actions Defendants violated the Clean Air Act §§ 110(h) and 116.

X

Petitioner is adversely affected by such actions of Respondents. The Eugene-Springfield area has been designated as

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a non-attainment area in meeting federal air quality standards for particulate matter. An increase in burning from 50,000 to 180,000 acres will cause further emissions of 20,000 tons of particulates into the airshed which includes the Eugene-Springfield area. Respondents are now charging a fee of $2.50 per acre for each burning permit, whereas the present SIP requires a charge of $8.00 per acre. If a limit of 50,000 acres is in effect during this burning season the sum collected from the present charges for such permits will be insufficient to fund Respondents' smoke management program.

XI

By letters of May 18, 1979, June 19, 1979, and July 10, 1979, copies of which are attached hereto, marked Exhibits "A", "B", and "C" respectively, and by this reference incorporated herein, Petitioner has requested Respondents to comply with applicable law, but Respondents have refused to do so. Petitioner has further requested the Attorney General to initiate a mandamus action to compel such compliance but the Attorney General has declined to do so.

XII

Petitioner has no plain, adequate or speedy remedy at law.

And Judge Val D. Sloper, having ordered the Writ issued on the 17th day of July, 1979:

NOW, THEREFORE, IN THE NAME OF THE STATE OF OREGON, You are commanded immediately after your receipt of this Writ to

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

comply with the terms of the present Oregon State Implementation Plan with respect to open agricultural burning until such time as that plan is revised by final agency action of the United States Environmental Protection Agency, and you are further commanded to then and there return this Writ with the proper certificate attached.

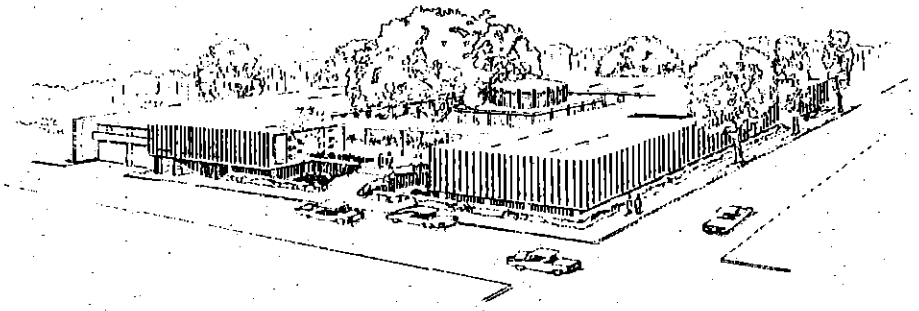
ISSUED this 17th day of July, 1979.

EDWIN P. MORGAN
CIRCUIT COURT CLERK

By D. French

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

CITY OF EUGENE



CIVIL DEPARTMENT — 101 EAST BROADWAY, SUITE 401 — 503/687-5080
EUGENE, OREGON 97401

May 18, 1979

Joe Richards, Chairman
Environmental Quality Commission
777 High Street
Eugene, Oregon 97401

The Honorable Albert H. Densmore
Medford City Hall
411 W. 8th
Medford, Oregon 97501

Ronald M. Somers
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Grace S. Phinney
1107 N.W. 36th
Corvallis, Oregon 97330

William H. Young, Director
Department of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Re: Notice of Intent to Sue Under 42 U.S.C. §7604(b)

Ladies and Gentlemen:

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We wish to advise you that the City of Eugene will commence an action under the Clean Air Act §304, 42 U.S.C. §7604(a)(1) against the individual members of the EQC and the operating head of the Department of Environmental

EXHIBIT "A"

Quality unless appropriate action is taken. Declaratory and injunctive relief will be sought. In giving this notice the City of Eugene does not waive the contention that no notice of intent to sue is needed by reason of its prior notice of April 12, 1978.

Very truly yours,

JOHNSTON, HARRANG & MERCER
CITY ATTORNEYS

Stanton F. Long

SFL:jlb

cc: Douglas M. Costle, Administrator
Environmental Protection Agency
Washington, D.C. 20460

Donald P. Dubois, Regional Administrator
Environmental Protection Agency, Region X
1200 Sixth Avenue
Seattle, Washington 98101

Governor Victor G. Atiyeh
Office of the Governor
State Capitol
Salem, Oregon 97310

Lane County Legislative Delegation

Professor John Bonine
School of Law
University of Oregon
Eugene, Oregon 97403

Honorable James Weaver
Congressman, 4th District
U.S. House of Representatives
1238 Longworth House Office Building
Washington, D.C. 20515

June 19, 1979

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED

Joe Richards, Chairman
Environmental Quality Commission
777 High Street
Eugene, Oregon 97401

The Honorable Albert H. Densmore
Medford City Hall
411 W. 8th
Medford, Oregon 97501

Ronald M. Somers
106 E. 4th Street
P. O. Box 618
The Dalles, Oregon 97058

Jacklyn C. Hallock
c/o Ted Hallock Insurance
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William H. Young, Director
Department of Environmental Quality
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Douglas M. Costle, Administrator
Environmental Protection Agency
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1200 Sixth Avenue
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Re Supplemental Notice of Intent to Sue Under 42 U.S.C. §7604(b)

Ladies and Gentlemen:

By previous notice of May 18, 1979 you were advised that the City of Eugene intends to commence suit to restrain the issuance of open agricultural burning permits in excess of the 50,000 acre level mandated by the present Oregon State Implementation Plan. That notice was based upon the adoption of rules by the EQC on December 15, 1978 which contravened the present SIP restrictions.

According to state law the Department of Environmental Quality has now issued permits for this summer's burning. This letter is to give you notice that the City of Eugene regards that permit issuance and any sub-

EXHIBIT "B"

sequent burning authorization in excess of 50,000 acres to be violative of the Clean Air Act. These actions are within the ambit of our May 18, 1979 Notice and will be the subject of forthcoming litigation under CAA §304.

Very truly yours,

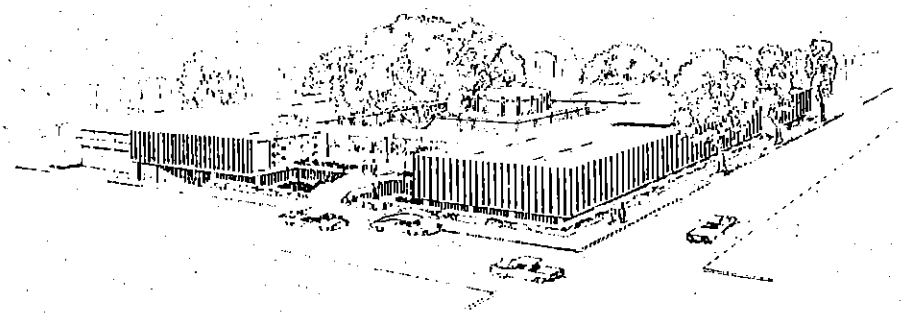
JOHNSON, HARRANG & MERCER
CITY ATTORNEYS

Timothy J. Sercombe

TJS:jlb
cc: Professor John E. Bonine
Honorable James Weaver
Northwest Legal Advocates

bcc: City Manager
City Councilors
Lane Co. Legislative Delegation

CITY OF EUGENE



CIVIL DEPARTMENT — 101 EAST BROADWAY, SUITE 401 — 503/687-5080
EUGENE, OREGON 97401

July 10, 1979

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William H. Young, Director
Dept. of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Re: Enforcement of Present Oregon State Implementation Plan

Ladies and Gentlemen:

By letters of May 18, 1979 and June 19, 1979 you were notified that the City of Eugene intended to commence an action under the Clean Air Act § 304 unless appropriate action was taken to cure the violations of the Act cited therein. As you are aware, the current Oregon State Implementation Plan limits the number of permits for open agricultural burning during the 1979 burning season to 50,000 acres. See, 42 Fed. Reg. 20, 131 (1977) (incorporating the provisions of Or. Laws 1975, Ch. 559). The fee for such permits by the terms of the SIP is $8.00.

It is our understanding that, contrary to the terms of the SIP, permits for the burning of 198,000 acres have already been issued this year and that a lesser fee was charged for each permit. Each grower's allocated acreage has been set on the premise that 180,000 acres is the appropriate ceiling. We suspect that you assume that the Environmental Protection Agency will approve a pending SIP revision which allows the issuance of a greater number of permits. We believe that EPA approval will not be forthcoming because of sub-

EXHIBIT "C"

stantive and procedural difficulties with the revision. In any event, approval, if it occurs, may not be an unconditional, final, formal act of the EPA until after the end of this year's burning season.

For the previous four burning seasons (1975, 1976, 1977, and 1978) the EQC has issued burning permits in excess of the applicable SIP limitation. Last year, a formal Notice of Violation was given to the State of Oregon by the EPA for the excess permits issued in 1977. Your actions in issuing more permits than the SIP allows indicates that violation will occur again this year.

This letter is to formally request that you convene an emergency telephone meeting of the EQC (as provided for under ORS 192.670) to consider the appropriate level of field burning until final agency action by the EPA on the SIP revision request. It is the number of permits issued by the state that is regulated by the SIP, and you have the duty to adhere to the SIP. Thus we ask that the EQC obey the present law and direct the Department of Environmental Quality Director to rescind all permits above 50,000 acres and to reallocate that acreage among those farmers who have registered fields for burning. This order to the DEQ would allow the re-issuance of the present permits only if a formal final EPA approval of a revision request occurs.

The law is clear. The Clean Air Act § 116, 42 U.S.C. § 7416 provides that:

> ". . . [I]f an emission standard or limitation is in effect under an applicable implementation plan . . . [a] State or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard or limitation under such plan or section."

Likewise, CAA § 110(h) provides that a state may not change a plan except by approved revision. See, Air Pollution Variance Bd. v. Western Alfalfa, 416 U.S. 861, 863 (1974); St. Joe Minerals Corp. v. EPA, 508 F.2d 743, 748 (3rd Cir. 1975). See, also, "Criteria for Proposing Approval of Revisions to Plans for Nonattainment Areas", 43 Fed. Reg. 21673, 21674 (1978).

The present obligation of the EQC has been formalized by Opinions of the Attorney General. 38 Op. Atty Gen. 1736, 1738-39 (1978); 38 Op. Atty Gen 1901, 1904 (1978). In the latter opinion the Attorney General holds that:

> "Thus, action by the state to permit field burning in excess of the acreage specified in the Oregon SIP would continue the state in violation of the CAA. If the state cannot obtain EPA approval of a revised plan

permitting burning of the 180,000 acres specified in ORS 468.475(2)(b), then provisions of the plan as presently approved clearly prevail. The mandate of ORS 468.475(2) and (5) would be nullified, preempted by limitations set forth in the SIP, and the state would have no authority to permit burning of more than 50,000 acres in 1978. Such preemption would arise under the Supremacy Clause of the United States Constitution, which provides:

> 'This Constitution, and the Laws of the United States which shall be made in pursuance thereof; . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.' US Const. Art VI, Cl.2.

"We point out that the EQC has an obligation to do its utmost to comply with both ORS 468.475 and the State Implementation Plan . . . . However, until EQC does in fact receive approval from the EPA to burn in excess of the 50,000 acres specified in the SIP as presently approved, EQC is subject to the limits set out in that plan, notwithstanding the directive of ORS 468.475.

". . . .

"We reiterate that the SIP as presently approved sets the limits which EQC must follow in issuing field burning permits. That limit is presently 50,000 acres. Therefore, until EQC receives approval from EPA to raise that limit, EQC may not authorize burning of more than 50,000 acres."

If you refuse to give assurance that you will comply with the SIP, we will take appropriate legal action. It is our belief and hope that your future actions will conform to law. Moreover, we hope you will act fairly and inform all concerned of how your agency intends to respond to this situation. Because you have authorized burning last week upon illegal permits, we must act promptly. We intend to commence action to require you to obey the law on July 17, 1979, and request a decision from you prior to that date which will obviate the need for legal action.

Very truly yours,

JOHNSON, HARRANG & MERCER
Attorneys for City of Eugene

By: Stanton F. Long

SFL:jw

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR MARION COUNTY

CITY OF EUGENE, An Oregon Municipal Corporation,

Petitioner,

-vs-

THE STATE OF OREGON ENVIRONMENTAL QUALITY COMMISSION, by and through its members, JOE B. RICHARDS, RONALD M. SOMERS, ALBERT H. DENSMORE, FRED BURGESS, and THE STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, by and through its Director, WILLIAM H. YOUNG,

Respondents.

Case No. 113770

PEREMPTORY WRIT OF MANDAMUS

TO: Honorable Albert H. Densmore, Member
Environmental Quality Commission
Medford City Hall - 411 West 8th
Medford, Oregon 97501

WHEREAS, a Petition, duly verified, has been filed in this Court by the Petitioner above named, and from said Petition it appears:

I

Petitioner, City of Eugene, is an Oregon Municipal Corporation organized and existing under and by virtue of an Act of the Twenty-Third Legislative Assembly of the State of Oregon in Regular Session filed in the office of the Secretary of State, February 18, 1905, entitled "An Act to Incorporate the City of Eugene", and subsequent Charter amendments. The City of Eugene is located within the boundaries of Lane County, Oregon.

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

II

Respondents Joe B. Richards, Ronald M. Somers, Albert H. Densmore, and Fred Burgess are members of the Oregon Environmental Quality Commission created pursuant to ORS 468.010. Respondent William H. Young is the Director of the Department of Environmental Quality. All of the Respondents exercise their functions as state officers within Marion County.

III

The Oregon Environmental Quality Commission (EQC) is charged by law pursuant to ORS 468.015 to create policies and regulations to be administered by the Oregon Department of Environmental Quality (DEQ). Pursuant to ORS 468.458 the DEQ has a nondiscretionary duty to issue permits for the open agricultural burning of straw and stubble residue from perennial and annual grass seed crops.

IV

Under the Clean Air Act, 42 U.S.C. § 7410, each state is required to adopt and submit to the Environmental Protection Agency Administrator a plan which provides for the implementation, maintenance and enforcement of primary and secondary national ambient air quality standards. Such plans must contain, inter alia, sufficient emission limitations, schedules, and timetables of compliance with such limitations for air polluters to insure attainment and maintenance of such air quality standards. These state implementation plans (SIP) once submitted and approved are binding upon the states until any revisions thereto are approved

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by the EPA Administrator.

V

The Oregon State Implementation Plan was revised April 18, 1977 (42 Fed. Reg. 20, 131 (1977)) incorporating the provisions of Or Laws 1975, Ch 559 (codified as ORS 468.455 through 468.485). See, 40 CFR 52.1970(c)(23)(1978). Or Laws 1975, § 11, (ORS 468.475) prohibited the EQC from issuing more than 50,000 acres of permits for the 1979 burning season. That restriction within the Oregon SIP has not been amended or revised since that time.

VI

On May 4, 1979, the Department of Environmental Quality submitted a State Implementation Plan revision request pertaining to field burning to the Environmental Protection Agency Region X. By this request Oregon seeks an increase in the number of allowable permits for field burning to a maximum of 180,000 acres, as well as certain operational rule modifications. As of the date of filing of this Petition, EPA has taken no action with respect to this request. Should such request be tentatively approved there will be a period of time before such revision is effective inasmuch as notice of formal rulemaking procedure is necessary before EPA action becomes final. Until such time as the revision becomes final, the current SIP restrictions are operative.

VII

The Environmental Quality Commission adopted rules allowing the issuance of permits for the burning of 198,000 acres

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for the 1979 burning season at the EQC meeting of December 15, 1978. Pursuant to such rules, the DEQ issued 198,000 acres of permits in May, 1979.

VIII

Under the Clean Air Act § 116, 42 U.S.C. § 7416, if an emission limitation is in effect under an applicable implementation plan, a state may not adopt or enforce any less stringent emission limitation. Under the Clean Air Act § 110(h), 42 U.S.C. § 7410(h), the State may take no action modifying the requirements of an implementation plan except for certain discrete categories of actions, i.e., plan revisions. The issuance of 198,000 acres of burning permits for the 1979 burning season is a less stringent emission limitation than the limitation to 50,000 acres and does not fall within the excepted categories of § 110(h) of the Act.

IX

Respondents in authorizing and issuing permits allowing the burning of more than 50,000 acres of grass seed and cereal grain fields during the period July 1, 1979 to October 31, 1979 acted in contravention of an emission limitation mandated under the applicable State Implementation Plan which disallows the issuance of greater than 50,000 acres of permits. By such actions Defendants violated the Clean Air Act §§ 110(h) and 116.

X

Petitioner is adversely affected by such actions of Respondents. The Eugene-Springfield area has been designated as

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a non-attainment area in meeting federal air quality standards for particulate matter. An increase in burning from 50,000 to 180,000 acres will cause further emissions of 20,000 tons of particulates into the airshed which includes the Eugene-Springfield area. Respondents are now charging a fee of $2.50 per acre for each burning permit, whereas the present SIP requires a charge of $8.00 per acre. If a limit of 50,000 acres is in effect during this burning season the sum collected from the present charges for such permits will be insufficient to fund Respondents' smoke management program.

XI

By letters of May 18, 1979, June 19, 1979, and July 10, 1979, copies of which are attached hereto, marked Exhibits "A", "B", and "C" respectively, and by this reference incorporated herein, Petitioner has requested Respondents to comply with applicable law, but Respondents have refused to do so. Petitioner has further requested the Attorney General to initiate a mandamus action to compel such compliance but the Attorney General has declined to do so.

XII

Petitioner has no plain, adequate or speedy remedy at law.

And Judge Val D. Sloper, having ordered the Writ issued on the 17th day of July, 1979:

NOW, THEREFORE, IN THE NAME OF THE STATE OF OREGON, You are commanded immediately after your receipt of this Writ to

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
101 EAST BROADWAY
EUGENE, OREGON 97401
TELEPHONE (503) 485-0220

comply with the terms of the present Oregon State Implementation Plan with respect to open agricultural burning until such time as that plan is revised by final agency action of the United States Environmental Protection Agency, and you are further commanded to then and there return this Writ with the proper certificate attached.

ISSUED this 17th day of July, 1979.

EDWIN P. MORGAN
CIRCUIT COURT CLERK

By /S/ D. FRENCH

JOHNSON, HARRANG & MERCER
ATTORNEYS AND COUNSELORS AT LAW
400 SOUTH PARK BUILDING
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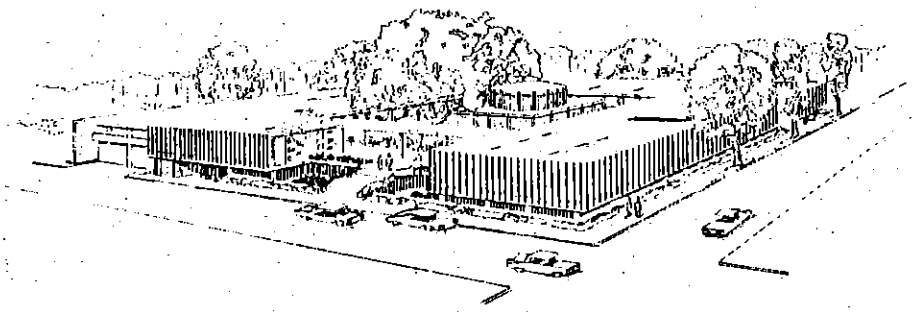
CITY OF EUGENE



CIVIL DEPARTMENT — 101 EAST BROADWAY, SUITE 401 — 503/687-5080
EUGENE, OREGON 97401

May 18, 1979

Joe Richards, Chairman
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777 High Street
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William H. Young, Director
Department of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Re: Notice of Intent to Sue Under 42 U.S.C. §7604(b)

Ladies and Gentlemen:

On December 15, 1978, the Environmental Quality Commission adopted rules allowing the issuance of permits for agricultural open burning during 1979 for more than 50,000 acres. Under the present State Implementation Plan the Environmental Quality Commission may not by order issue permits for the burning of more than 50,000 acres. 40 Fed. Reg. 20131 (April 18, 1977). According to state law, the Department of Environmental Quality will issue permits by June 1, 1979 for the burning of acres in excess of this limitation.

Where the Environmental Protection Agency has approved an applicable implementation plan the State may not adopt or enforce a less stringent one. See, Air Pollution Variance Bd. v. Western Alfalfa, 416 U.S. 861, 863 (1974); St. Joe Minerals Corp. v. Environmental Pro. Agcy., 508 F2d 743, 748 (3rd Cir. 1975). Clean Air Act §§110(h), 116, 42 U.S.C. §§7410(h), 7416. The adoption of rules relaxing present SIP controls and emission limitations on field burning by the EQC violated the Clean Air Act §§110(h) and 116. Accordingly, its members are amenable to suit under §304 of the Act.

We wish to advise you that the City of Eugene will commence an action under the Clean Air Act §304, 42 U.S.C. §7604(a)(1) against the individual members of the EQC and the operating head of the Department of Environmental

EXHIBIT "A"

Quality unless appropriate action is taken. Declaratory and injunctive relief will be sought. In giving this notice the City of Eugene does not waive the contention that no notice of intent to sue is needed by reason of its prior notice of April 12, 1978.

Very truly yours,

JOHNSTON, HARRANG & MERCER
CITY ATTORNEYS

Stanton F. Long

SFL:jlb

cc: Douglas M. Costle, Administrator
Environmental Protection Agency
Washington, D.C. 20460

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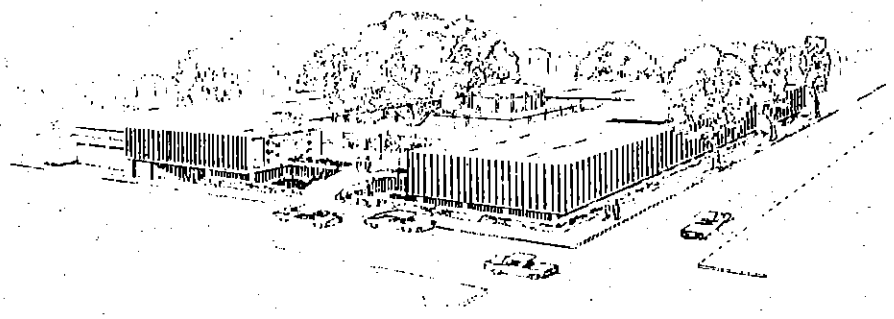

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stantive and procedural difficulties with the revision. In any event, approval, if it occurs, may not be an unconditional, final, formal act of the EPA until after the end of this year's burning season.

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This letter is to formally request that you convene an emergency telephone meeting of the EQC (as provided for under ORS 192.670) to consider the appropriate level of field burning until final agency action by the EPA on the SIP revision request. It is the number of permits issued by the state that is regulated by the SIP, and you have the duty to adhere to the SIP. Thus we ask that the EQC obey the present law and direct the Department of Environmental Quality Director to rescind all permits above 50,000 acres and to reallocate that acreage among those farmers who have registered fields for burning. This order to the DEQ would allow the re-issuance of the present permits only if a formal final EPA approval of a revision request occurs.

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"We point out that the EQC has an obligation to do its utmost to comply with both ORS 468.475 and the State Implementation Plan . . . . However, until EQC does in fact receive approval from the EPA to burn in excess of the 50,000 acres specified in the SIP as presently approved, EQC is subject to the limits set out in that plan, notwithstanding the directive of ORS 468.475.

". . . .

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Very truly yours,

JOHNSON, HARRANG & MERCER
Attorneys for City of Eugene

By: Stanton F. Long

SFL:jw

CRUISE BOATS ON THE WILLAMETTE RIVER

Ladies and gentlemen, although we are here to discuss the docking permit for Mr. Lefler's boating operation, I am sure it is apparent that it is his operation that is in question. I do not know Mr. Lefler and have never talked to him. I am here entirely on my own because I want to see that justice is done. I want to make my position clear at the outset that I see nothing that is hazardous to other people on the river; I see virtually no air or even noise pollution of any significance and I certainly see no damage to the environment by the operation of his boat.

First of all: SAFETY. Mr. Lefler's boat is, I am sure, a safe vessel and operated by a responsible person. There is no reason to consider it hazardous to other boaters or people on the river. Being a jet boat, the wake it kicks up is relatively small and visibility for the operator is excellent. I have witnessed two upsets on this powerful river in my canoe trips and I know the river is dangerous. From a safety standpoint, I can see where Lefler's boat could be of assistance to stranded or injured people. These operations may actually make the river safer since he would be travelling the river regularly, and may be able to offer assistance when needed.

People have talked about the possibility of excessive noise and the damage to wildlife along the river. I want to tell you of my observations on this. We took a canoe trip down the Willamette to Harrisburg recently; a group of us in three canoes and a kayak. We had turned into the mouth of one of those beautiful quiet sloughs that lie along the river and were resting for a while. I have been a bird watcher all of my life and since it was spring there were many birds singing; a robin high in one of the cottonwoods by the river and other birds in the lower brush. Mr. Lefler's boat happened to come by at that time, and I watched to see the effect of it. In about 15 or 20 seconds the sound of the boat had completely died away, and most significant of all, the birds didn't even stop singing! The boat had absolutely no effect on wildlife and the noise was no greater that most any other sportsman's power boat. He passed us again on his return trip and the wake from his boat didn't bother us in the canoes.

My family and I have canoed on the Willamette since 1954, for 25 years. I love that river, and incidentally I am also an avid fly fisherman. But I think I am broad-minded enough that I want to see the river kept open for use by as many people as will use it wisely and with respect.

Now, the time will come when I shall not be strong enough to handle a canoe on that river, and I might want to see it again in safety from a boat like Mr. Lefler's. Is this to be denied me? We make great pious preachings about helping the disabled and the senior citizens. Oh,no, we don't want to discriminate against them! But if we refuse to permit a tour boat like this, it means that only the young and strong, the innertube crowd and the water born hot-rodders can enjoy this great river.

IN SUMMARY:

I believe that Mr. Lefler should be able to dock his boat at a place convenient for his customers inside the city limits, and as long as he treats other boaters and the river with respect, he should be able to continue his operation.

William E. Sweetland
42 Ridgewood Drive
Eugene, Oregon 97405

Re: River Rd. – Santa Clara

EQC Hearing July 27, 1979

Written "testimony" –

comments submitted through the Eugene DEQ office.

July 26, 1979

Department of Environmental Quality (EQC)
Willamette Valley Region
16 Oakway Mall
Eugene, Oregon 97401

Re: River Road-Santa Clara septic tank moratorium

We would like to urge the commission to maintain the moratorium in the River Road-Santa Clara area. We feel that until a complete analysis on the groundwater is available no new construction should be allowed. The possible health danger to those of us living just north of Beacon Drive through pollution of our wells is a real concern.

Yours truly,

Vivienne A. Bullock
Charles and Vivienne Bullock
2245 River Loop 1

Robt A Fryddell
David Voegtlin
2100 River Loop #1

Candy E Vigil
Jesse and Candy Vigil
2241 River Loop 1

Lynette Shelley
2060 River Loop #1

Vera Williamson
2217 River Loop 1

Denise M. Gribbin
2011 River Loop #1

James R. Harris
2205 River Loop #1

Cheryl Swedberg
2032 River Loop

Robert C. Bullock
2215 River Loop #1

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
JUL 26 1979
EUGENE DISTRICT OFFICE

July 26, 1979

Hearing Officer
Department of Environmental Quality

Dear Sir:

My name is Hayden Haley, 844 Freemont Ave., Eugene, Oregon, residing in the River Road area. I am a registered voter in the Santa Clara Precinct #7. I am representing the Irving Christian Church, 90341 Prairie Road, Eugene. They are the owners of three and two-thirds acres of property at 300 Irvington Drive, Eugene. This property is within the boundaries of the River Road - Santa Clara Septic Tank Moratorium.

In view of the fact that no conclusive evidence of harmful contamination has been presented, we urge the moratorium be lifted and the area proceed in the manner recommended by the River Road - Santa Clara Task Force to solve the area sanitation problems.

Our application for sewage disposal has been pending for nearly two and one-half years. Our present church location is surrounded by industry and the Southern Pacific Railroad. We have no room to expand or improve our present facilities. We therefore respectfully request that our permit be granted so that we may proceed with one of the alternatives for sewage disposal that are available.

Sincerely,

Hayden A. Haley

To be read into the record

lane county

July 26, 1979

Environmental Quality Commission
P. O. Box 1760
Portland, OR 97207

I have analyzed the Director's report on agenda item K dealing with our request to lift the moratorium on the River Road and Santa Clara area. The Director's recommendation provides only partial response to our request, but does provide some needed relief to the citizen we represent.

If you adopt the Director's recommendation request the following:

1) The Environmental Quality Commission schedule a public hearing on the moratorium no later than January 1980, and

2) The Environmental Quality Commission direct DEQ staff to provide study status reports during November and December 1979 EQC meetings, and

3) The Environmental Quality Commission direct DEQ staff to assess and report on any cost effective and environmentally sound alternatives to sanitary sewers for areas such as River Road/ Santa Clara, and

4) The Environmental Quality Commission declares support of continued use of septic tanks and disposal fields in this area unless a health hazard is proven or the groundwater is not safe for consumption.

I still feel there should be total removal of the septic tank and disposal field moratorim as no health hazard has been proven, but if you adopt the Director's recommendation, request you accept my additions to the Director's recommendations.

Sincerely,

Harold H. Rutherford
Lane County Commissioner

HHR:eo

July 15, 1979

Oregon Environmental Quality Commission
P.O. Box 1760
Portland, Oregon 97207

Re: article, local paper, Public to get briefing on septic tank problem: N.W. of Eugene — the River Road/Santa Clara area

The "year-long study concludes that additional work is needed to determine whether the septic tank pollution is significant enough to be classified as a health hazard." seems completely extraneous. The hydrogeologists meeting on July 17, 1979 and the explanation and question answering can only be thought to be an effort to sell the local area on more extraneous groundwater tests.

The article considers the possibility of the Eugene leaking sewers as part of the over-all problem with groundwater in this area down-flow from Eugene. In which case "remedial action will be difficult and probably expensive since it may involve the location and repair of seepages from sanitary sewers in a large up gradient area. This process carries no guarantee of success."

That statement seems true. It can make no difference in the total water-table pollution. It will only affect the local areas of pollution. The new Eugene/Springfield sewering plant will have an outflow five miles down river, toward Junction City. The Metropolitan Wastewater Management Commission's publication, the Sanitarian Gazette, states that "sites A-1 and A-2 are prime agricultural land now under cultivation." It will not be prime agricultural ground for very long. 25 tons of dry muck and 200,000 gallons per day being dumped upon and/or held in lagoons and/or anarobically reduced to a dark gray pea soup with solids content of from three to five percent. And having 1.5 to 5 percent nitrogen in this sludge is so very similar to the wastes going in to the drain field of a septic tank system, in the over-all considerations, that placing either or both areas on "sanitary sewer lines" would only be stating a transfer of ground water contamination from the area's present septic tank areas down flow. It would go toward Junction City and west — under any and all considerations.

The total context seems to be to shove the local problems down-flow to cause contamination of other areas. This area is contaminated in the ground water, so just leave it this way. And, do continue the building moratorium forever, to keep local ground water and down flow areas contaminations to a minimum. Placing these areas, RR/S.C., on "sanitary sewers" will not help to spread out the ground water pollutions of people and industry. Teaching better personal health habits, to all the citizens, are the only options against a general and ever-widing area of health hazards.

John C. Neely, Jr. - 1600 Horn Lane — Eugene, Ore. 97404

7/27/79

May I have a ~~few~~ few minutes?

Commissioner Weinstein

ITEM: E. Please read into the record. 7/27/79

To the Corps of Engineers: Environmental Quality Commiss.

As residents of the City of Eugene, we urge you not to allow mechanized boats on the Willamette River. We support the already-voiced concerns in regard to water and noise pollution and also agree that motor or jet boats would constitute a hazard to other craft using the river, to the fisherman, the swimmer, and the many others sitting by the side of the river or biking along the trails.

You say that encouraging such an activity will bring revenue into the city. To that we respond that any money generated will not be nearly enough to compensate for the damages done. The purity of the water would be destroyed; the beauty of the parks would be violated. Our river would become an amusement park, a place for frenzied play instead of a place to meditate and reflect upon one's past and plan for the future.

How can we plan for the future when a hideous yellow boat zooms by teaming with bodies, sunglasses, and cameras and we are made too aware of what man's future will be with his obsession for consumption of energy and his need for artificial entertainment.

Trading posts! Snake pits! Jet boat tours! Such stuff billboards are made of.

Karen M Jordan
1455 East 23rd Avenue

Tom Link
3995 Bailey Hill Rd

Joyce Hasty
1952 Elk St
Eugene

Diane Ambler
1445 E. 23rd

Barry R. Jordan
1455 E. 23rd Ave.

Colleen Lee
1217 Sequoia St.

Ralph Dumont
Salvation Army Lodge

Josh Frick
1332 W. 18th #6

Ron Williams
PO Bx 1824
Eugene OR 97440

Susie Goss
2555 Portland St. #1

July 79

September 27, 1979

Mr. Ron Marg
U.S. Army Corps of Engineers
Portland District
Box 2946
Portland, Oregon 97208

Your request to Mr. Michael Downs regarding the petition to the Environmental Quality Commission (EQC) to designate a quiet area along the Willamette River in Eugene was referred to me for reply.

On July 27, 1979, the EQC adopted the Director's recommendation to not designate the Willamette River between Eugene and Harrisburg a quiet area and instructed DEQ staff to examine the extent of EQC jurisdiction in this matter and possible changes to the noise regulations to accommodate areas such as this. The staff was also instructed to look into the jurisdiction of other agencies in this matter.

A portion of the EQC minutes of July 29 dealing with this item are enclosed.

Sincerely,

Carol A. Splettstaszer
EQC Recording Secretary

/cs

Enclosure

R. W. MacROSTIE, MANAGER

MEETINGS SECOND MONDAY
EACH MONTH
8 O'CLOCK P.M.

Deschutes Valley Water District

PHONE 475-2194
ROUTE 1, BOX 17 • MADRAS, OREGON 97741

July 23, 1979

Environmental Quality Commission
P. O. Box 1760
Portland, Oregon 97207

Subject: Bend Sewage Facility Project

Dear Sirs:

Deschutes Valley Water District requests the EQC's attention to the enclosed statement that will be sent to our Congressmen and EPA. We feel that you should be fully aware of our viewpoint and position.

Deschutes Valley Water District believes the underground identification of aquifers has been grossly inadequate to prove beyond doubt that injection of treated effluent would have no effect upon our source of domestic water.

Economic factors are recongnized as a significant segment of any sewerage project. But, how can anyone place a value on the degradation of the pristine water of Opal Springs.

We respectfully request the denial of any project for underground injection of effluent and request the revocation of the temporary permit issued November 1977 by the EQC.

Respectfully yours,

Robert W. MacRostie,
Manager

RWM:km

To: EPA - Region Ten

SUBJECT: Bend Sewage Disposal

Deschutes Valley Water District Board of Commissioners at their March meeting moved to take whatever steps necessary to prevent degradation of our water supply at Opal Springs. We feel that any injection of treated sewage in the Bend area may lower the water quality and may force us to treat our supply to meet Safe Drinking Water Act standards.

Aquifer identification surveys compiled by a number of State and Federal agencies have given us a general underground flow chart. The flow is from the south to the north exiting into the Crooked River Canyon from the High Bridge to Opal Springs and beyond. Some 900 cu. ft./sec. flows into Crooked River above Opal Springs. Opal Spring's flow is 240 cu. ft. per sec.

Deschutes Valley-Water District cannot believe we may be forced to take legal action to prevent possible degradation of our Domestic water supply. State and Federal laws prohibit anyone from degradating anothers domestic water source. State and Federal agencies have been formed to promulgate rules and regulations and enforce the law. Why then are we forced to consider legal action against the very agencies enpowered to prevent degradation of a domestic water supply?

The years of disposal well use in our area has jeopardized the integrity of domestic water supplies by possible contamination of the aquifers from which those supplies are drawn. To consider a concentrated disposal well field capable of handling 15 cu. ft. per sec. is contrary to the basic reason for sewage systems.

We must remind you that water of sufficient quality for domestic use without expensive treatment is extremely scarce in Eastern Oregon. We will not condone nor allow any project that may contaminate, degradate or pollute our supply. We oppose the temporary permit issued the City of Bend by DEQ for underground disposal. We will take whatever action needed to protect our water supply.

Respectfully,

Robert W. MacRostie,
Manager

Pollution Control Bond Fund Loans
Consideration of Alternative Security Proposals
July 18, 1980

In July 1971, the EQC adopted the following policy regarding loans from Pollution Control Bond funds relating to sewer construction projects:

> "It was moved by Mr. Harms, seconded by Mr. McMath and carried that, except for purchase of bonds which will be considered on an individual basis, it be the policy of the Commission to limit loans to $50,000 with a 20-year term as maximum for repayment of the indebtedness and that there be a pledge of specific revenue for repayment. In the discussion of this motion it was concluded that special consideration of larger loans might possibly be given in hardship cases."

Two loans have been made by the Department for sewer construction accepting revenue bonds for collateral. Metro was allowed the pledge of solid waste facility user fees as security for a loan of 8 million dollars upon a showing of ability to control the flow of solid waste, and to generate large sums of revenue from a relatively small part of the gate fee. In addition, Metro argued that issuance of G.O. bonds would require two elections (tax base and bonds) and jeopardize timely implementation of the resource recovery plan.

Attached is a request by Marion County and a resolution of the Oregon Sanitary Service Institute to allow PCB financing similar to Metro. Lincoln County and others have verbally made the same request. Time delays and the unlikely passage of bond elections are reasons put forth for accepting alternative funding approaches.

On the Water Quality side, diminishing federal construction grant dollars is shifting the financial burden back to the users and local governments for needed projects. There is also strong reluctance of voters to support financing additional capacity of sewerage systems for future growth.

There appears to be a legitimate need for new and innovative (and sound) approaches to financing public utility projects. The staff is presently evaluating the immediate requests mentioned above. Questions include legal authority of local government to enter into long-term contracts, the kinds of binding agreements available, how to set them up and their security, maintenance of reserve funds for revenue shortfall and impact, if any, of new loan securities on state bond sales.

It is our intent to bring recommendations in this matter to the EQC as soon as possible. We would like to know of particular areas of interest or suggestions the Commission may have in the review. In appreciation of the limited expertise in municipal financing of the Department, it might be very useful to retain the services of a financial consultant in this matter.

/dro

MARION COUNTY

BOARD OF COMMISSIONERS

COURTHOUSE, SALEM, OREGON, 97301

COMMISSIONERS
Randall Franke, Chairman
Pat McCarthy
Harry Carson, Jr.

EXECUTIVE OFFICER
Harold F. Brauner

LEGAL COUNSEL
Frank C. McKinney

TELEPHONE 588-5212
AREA CODE 503

June 18, 1980

William H. Young
Department of Environmental Quality
522 S.W. 5th
Portland, Oregon 97204

Dear Mr. Young:

Marion County respectfully requests that it be given approval to secure a loan from the State Pollution Control Fund through the commitment of fees and assignment of other assets.

Specifically, Marion County proposes to secure such a loan by:

1. An assignment of any values residing in land, facilities or fixtures associated or related to the waste disposal/ recovery facilities to be constructed or acquired.

2. A contractual assignment of required sums of monies collected in tipping fees; including assignment of the county authority to both establish and collect fees.

3. A contractual assignment of required sums of monies from those revenues, if any, produced by marketing of either energy or materials produced from the solid waste disposal/ recovery facility; and

4. An assignment of collection fees as currently levied on all collectors in the county, along with assignment of county authority to both establish and collect such fees.

This request is based upon an urgent need for Marion County to proceed quickly with needed solid waste disposal facilities.

A bond issue as a funding means is inappropriate due both to an unacceptable time delay, and to the very negative prospects for success of a bond election (in view of the financial conditions in Marion County).

On the other hand, Marion County has a solid, well-established, franchise system covering both collectors and disposal sites. Collected disposal fees, under this system, exceeded $850,000 in 1979. Collected fees, paid to public authorities by collection firms, exceeded $300,000 in that same year.

Marion County has a dedicated and extremely active waste study program in progress, including energy recovery and landfill concepts. We expect to choose a system by August of this year, and to proceed with implementation later this year. This action is most necessary if Marion County, and parts of Polk County, are to have a satisfactory disposal facility available when Brown's Island Landfill, our central current facility, is closed in July, 1983.

Although the exact amount of funds needed will not be available until August 1, 1980 we expect the sum to be in the range of 5 to 15 million dollars. To insure continued and timely progress, we seek confirmation that State funds can be made available to Marion County when needed.

Sincerely,

BOARD OF COMMISSIONERS

Randall Franke

Randall Franke
Chairman

RF:if

cc: Larry Trumbull

Oregon Sanitary Service Institute
4645 18th Pl. S., Salem, Oregon 97302 Phone 399-7784

Research
Standards
Service

June 5, 1980

To: Bill Young, Director, DEQ

Re: Paying Back Pollution Bonds

Whereas voters are turning down both capital construction for solid waste (Lane and Tillamook Counties for example) and for operating expenses (Lane for example), and

Whereas some counties have a difficult relationship with voters for totally different reasons and are uniformly adjudged incapable of passing bonding for capital construction (Marion for example), and

Whereas there is a growing need for capital construction financed by the pollution control bonds; and

Whereas Metro (formerly MSD) was allowed to pledge tipping fees and resource recovery sales without bonding for up to $100,000,000 or a substantial portion of that price for the proposed Publishers Plant, and

Whereas the amount to be used by Metro exceeds potential requests for all or most of the rest of the state;

Now, therefore, be it resolved that the DEQ and EQC be requested to permit repayment on the following basis:

(1) The land, plant, facility, fixtures or others be pledged.

(2) The gate fee and resource recovery revenue be pledged to first repay the loan and interest.

(3) DEQ be given a right of entry and authority to physically take over and operate the gate in the manner of MSD-Metro to assure that the first use of revenues be to repay the loan principal and interest.

Whether in resolution form or other, this question is expected to come out of the Marion County SWAC Finance Committee of which John Borden and I are members, tonight. I am proposing that the entire Committee and Board of Commissioners forward the request to you and to the EQC. We expect that similar requests will be coming in from other local government units.

Respectfully submitted,

Roger W. Emmons, Ex. Director

(Photocopies to Carol + Mike + EQC)

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

July 11, 1980

Mr. Wm. H. Young, Director
Department of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

RE: Fred Hughes

Dear Bill:

Regarding Fred Hughes' motion to reconsider the BPA substation variance, I recommend the matter be placed on the August agenda and that Mr. Hughes be so notified.

Very truly yours,

JOE B. RICHARDS

JBR:lmm

cc: Mr. Hughes

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
JUL 14 1980
OFFICE OF THE DIRECTOR

Contains Recycled Materials

DEQ-46

July 8, 1980
P.O.B. 452
Corvallis, Or.
97330

Joe Richards
c/o Bill Young
E.Q.C.
P.O.B. 1760
Portland, Or.
97207

Dear Mr. Richards
This letter is to inform you that I am formally asking for a reconsideration of an E.Q.C. decision. The decision regards a variance permit granted to the B.P.A. on ~~Sat~~ June 20, 1980 to operate in excess of state nightime noise standards. I live directly adjacent to their (B.P.A.) substation so I am being affected by this nuisance. I spoke at the hearing in opposition to this variance permit. I am now compiling research and data which I intend to submit to the E.Q.C within 30 days which I feel will show beyond the shadow of a doubt why this permit should not be granted.
Therefore I ask you and your commission to

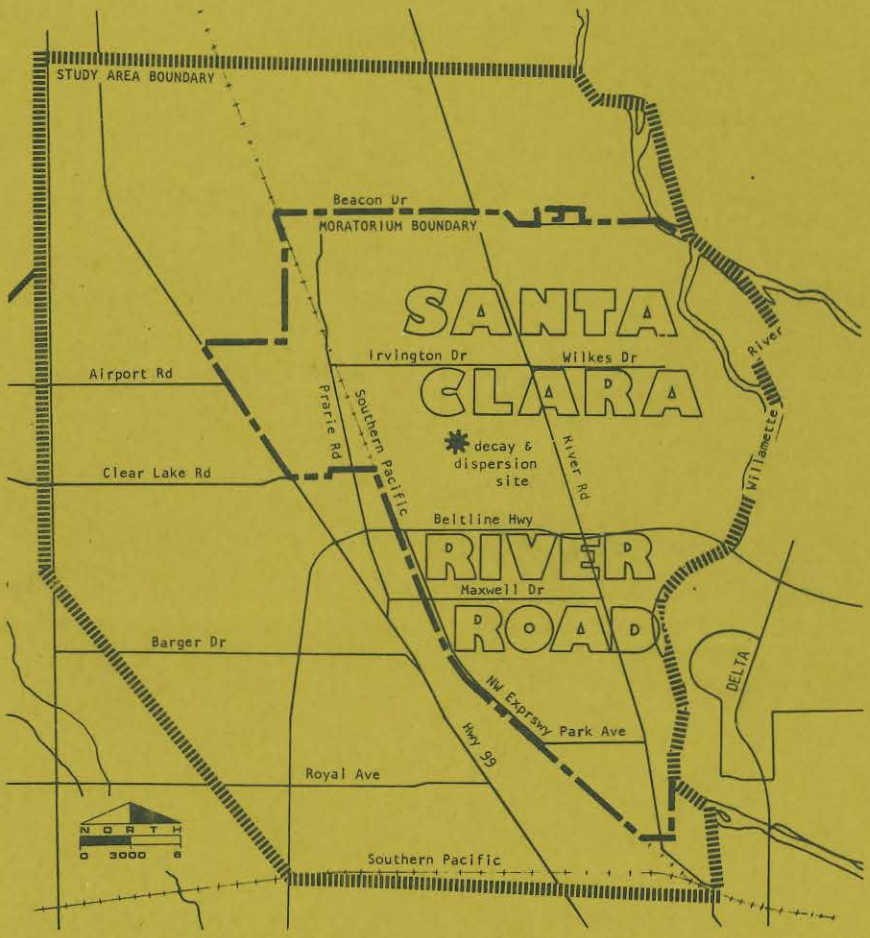
reconsider this matter after reading my report. Thankyou for your time.

Sincerely

Fred Hughes

RIVER ROAD/SANTA CLARA GROUNDWATER STUDY

INTERIM REPORT



July, 1979

LCOG Lane Council of Governments

Lane County Environmental Management

Environmental Geology & Groundwater, Inc.

Prepared and published July, 1979

by

Lane Council of Governments

125 8th Ave. East

Eugene, Oregon 97401

Executive Director: Tom Jenkinson

CREDITS

Report Preparation:

Roy Burns, Lane County Environmental Management
Gerritt Rosenthal, L-COG
Randy Sweet, Environmental Geology & Groundwater, Inc.

Report Production:

Wes Hanna, Production Supervisor
Bette Whiting, Production Assistant

ERRATA
STAFF SUMMARY

Page 3 #2	"meanders" for "meaners"
Page 3 #3	add "and" after "...leachate)"
Page 4 #7	delete "in" in lst line
Page 4 #8	delete "aday" in line 5
Page 6 #3	Oregon Administrative Rules Ch. 340-71-030 (1c)
Page 9 #2	"sampling" for smapling"
Page 16 Par. 1	should read "..seasonal variations in water level, response..."
Page 20	"Lane County" add "(ORS 454.725)" after "contracted" in line 2
Page 22 Par. 4	"nitrosamines" for "nitorsamines"
Page 23 Par. 4	"pumping" for pumbping"
Page 25 #2 Par. 3	add "not" after "also" in line 4

RIVER ROAD/SANTA CLARA GROUNDWATER STUDY

INTERIM REPORT

STAFF SUMMARY

LANE COUNCIL OF GOVERNMENTS
125 East 8th Avenue
Eugene, Oregon 97401

3 JULY 1979

TABLE OF CONTENTS

FIRST SECTION: STAFF SUMMARY

INTERIM REPORT
RIVER ROAD/SANTA CLARA GROUNDWATER STUDY
STAFF SUMMARY

I. INTRODUCTION

The Staff Summary is one element of the Interim Report. Its intent is to provide an interpretation of the technical analysis presented in the "Consultant's Summary." The "Staff Summary" will also address the relationship between the data analysis and the various social and political concerns and options for this area. A third portion of the "Interim Report" will be an "Appendix" which will present examples of data outputs and analysis information.

II. FINDINGS

The findings to date can be grouped into four categories: 1) "Study Approach", 2) "Technical Results," 3) "Administrative Findings," and 4) "Questions to be Answered." There is some overlap between these levels of analysis. "Questions to be Answered" remains a major category, as predicted at the Interim Report stage.

A. Study Approach

1. The Study design is generally adequate to address the major issues of shallow aquifer contamination in the River Road and Santa Clara.

2. The study is proceeding on schedule. Technical analytical problems have been encountered and solved.

3. Initial hydrology modeling has been completed and the model (consultant-modified "Pinder's Iterative Digital Model") appears adequate and accurate as an approach for the shallow levels of the RR/SC aquifer.

4. The dispersion and decay analysis has been successfully completed at one site, and values for hydrologic conductance (K) and effective soil porosity(s) have been obtained.

5. Vandalism of testing sites, though a problem, was not so severe as to significantly interfere with analysis needs.

B. Technical Results

1. The general groundwater flow in the River Road and Santa Clara areas is to the northwest as originally predicted. However, localized subsurface channelization produces variations in the direction of flow from point to point.

2. The major cause of local channelization appears to be old flood courses and meaners and old, buried surface drainages.

3. During winter periods, the most significant contributor to shallow aquifer volume or level change is rainfall. Imported water (in the form of septic leachate) upgradient inflow to the area (from the south and southeast) is a minor contributor of groundwater volume.

4. Groundwater response to rainfall is rapid when soils are saturated. Significant rises in the water table occur within 24 hours of the rainfall.

5. The large gravel pit near Beltline Highway causes local diversion of waterflow and local depression of the water-table.

6. The Beltline Highway does not appear to act as a barrier to southeast-northwest movement of groundwater.

7. Water table levels rose to within in 4 feet of the ground surface in several locations this year. Rainfall from October through December, 1978, was considerably below average while rainfall from January through May, 1979, was slightly above average.

8. Dispersion test site results indicate that both test nutrients (nitrate) and test bacteria (coliforms) can move rapidly with the groundwater away from injection sites. In some cases the speed of movement may be up to 20 feet in 3.5 hours a day. Exact rates of flow, dilution rates, predicted directions and ultimate distances of travel will be presented in Technical Appendix B - Dispersion Decay Analysis--July, 1979.

9. The movement of nutrients through the groundwater appears to be largely influenced by local subsurface channelizations.

10. The movement of bacteria through the groundwater appears to be the result of both subsurface channelizations and macropore transmission (i.e., mini-channels caused by roots, insect holes, etc.)

11. Tagged E. Coli bacteria were observed to survive at least 20 days in the aquifer zone.

C. Administrative Findings

1. Violations of nutrient (NO_3-nitrate) concentration and bacterial level standards are found at various sites during the winter period.

2. The overall nitrate concentration in the area appears to exceed that in background tests areas, and the pattern of excessive bacterial levels is not incompatible with the influence of subsurface waste disposal.

3. Preliminary data indicate that about 300 residents in the study area rely on subsurface groundwater supply for domestic water. No systematic testing of these wells has been performed.

4. The 1990 General Plan Update is currently considering an option in which the northwest section of the study area will be deleted from the urban service are. This area is approximately 461 acres.

5. At the present time, land within the RR/SC study area is developed with an average residential lot size of 9,000-13,000 sq. ft. (0.2-0.3 acres). The overall density is 3-to-5 residential units per acre.

6. The RR/SC Task Force considered various waste disposal alternatives for the area and concluded that sewering was the most likely, but not the only, option for future waste disposal in the River Road portion of the area. For the Santa Clara area, it was concluded that the formation of a special district would enable this area to explore several options, including sewers and alternative waste disposal.

7. The Lane County Commissioners voted in April, 1979, to request lifting of the Environmental Quality Commission moratorium on new subsurface systems in the Study Area. Information from the Interim Report was not available at that time.

8. As a result of Public Hearings held by the Department of Environmental Quality and Oregon Environmental Quality Commission, it was concluded by the DEQ that the necessity of a moratorium on new construction in the RR/SC area should be reconsidered when the Groundwater Study was complete. Subsequent action by the EQC determined that a rule-making hearing would be held on this issue as soon as possible after concerned parties have had a chance to study this Interim Report. The hearing is scheduled for July 27, 1979, at 1:30 p.m., in Harris Hall, Eugene, Oregon.

9. The Metro Wastewater Management Commission is proceeding with the construction of the Metropolitan Wastewater Facility. This plant is designed and sized to serve the expected populations of the RR/SC areas, and the costs of major interceptors to serve these areas are still in the construction budget.

D. Questions to Be Answered

The groundwater study is not complete at this time. Only one-half of a water year depicting the rising water table has been monitored. Analysis to date has covered only general hydrology without analysis of nutrient movement for the general study area. Dispersion and decay testing have been completed, and a complete analysis is expected during July, 1979 (Appendix B - Technical Report). Well tests were completed in February. The following items are questions which the Final Report may be expected to address (except as indicated) but which cannot be answered at this time.

1. What interaction exists between the shallow and deep aquifers? What proportion of the shallow aquifer migrates out of the study area, and what proportion percolates? The questions of the characteristics of

the deeper groundwater layers, their flow, quality and sources, as well as the definition of where "shallow" stops and "deep" begins, cannot be addressed by this study with the existing monitoring sites. Study design limits were established for the shallow aquifer.

2. What are the actual dispersion and decay characteristics of nutrients and bacteria from existing drainfields of different ages?

3. What portions of the Study Area are susceptible to a shallow aquifer depth and, thus, not acceptable for a site disposal as per ORS? This may be answered once a complete model is available.

4. Where are the major subsurface flow channels and paths of greatest water movement? The completed mapping should address this question as well as the rates of change of velocity and direction of flow through an annual rising/falling cycle.

5. What is the net yearly and summertime relationship of the Willamette River to the shallow aquifer and how does this compare to upgradient input (underflow), rainfall, and water imports (septic drains, lawn watering and irrigation)?

6. Based on dispersion and decay information, what is the projected "zone of influence" of nitrate enrichment downgradient from the Study Area under present development conditions? How large is this area if the area develops to density?

7. If River Road is sewered in 5 years, what is the "zone of influence" of nitrate concentrations, and will this lower nitrate concentrations?

8. Do travel rates and soil viability indicate bacterial contamination to be a problem downgradient of the Urban Service Area?

9. Are present bacterial patterns conclusive evidence of existing subsurface septic system contamination?

10. What additional sources of nutrient and bacterial contamination exist, and are they significant?

11. How many residences are currently using groundwater for domestic supply in and downgradient of the Study Area, and are these supples of acceptable quality?

12. Are excessive nitrate concentrations a seasonal phenomenon occurring only during periods of high water table?

13. If aquifer contamination levels exceed Federal Drinking Water Standards and the shallow aquifer is lost to benefical use, does a state agency or local agency have culpability? If special development standards are implemented, do additional costs accrue to new development, government, or existing development?

14. Is seepage from presently sewered areas a significant contributor to groundwater nutrient and bacterial levels?

This is only a partial list of the most significant questions. The analysis of prevention and control options and the adequacy of this study to determine the feasibility of these options are discussed in a later chapter.

III. RECOMMENDATIONS

The following recommendations are meant to provide assistance for decision making in the pursuit of the remainder of this study and the initiation of further studies. The recommendations are:

1. The present monitoring program should be continued through the end of the water year (October, 1979). This is necessary to provide the maximum benefits from the modeling analysis.

2. The present smapling analysis program should be evaluated for improvements in testing and for potential cost reduction. The testing for one or more parameters, such as chloride, ammonia or sulfate, may be eliminated and, in addition, alterations in testing frequency may be possible.

3. The remaining study effort, model analysis and Final Report should be aimed at addressing the "Questions to be Answered."

4. Lane County and L-COG staff should begin the process of identifying areas of concern and should proceed with the development of technical and financial options for the abatement of suspected health hazards.

5. Lane County staff should begin the process of identifying and testing domestic supply wells within the Study Area as permitted by funding and staff availability.

6. The public information effort in the RR/SC area should be focused to inform people of the results of analysis to date.

7. Consideration should be given to the study of the movement of tracer bacteria in functioning residential septic system drainfields. This would involve the selection of test sites, the addition of monitoring wells and injection of tracer bacteria in drainfield systems of different ages.

8. Since rainfall is the single largest contributor to shallow subsurface water supply, the installation of stormwater collection systems should be evaluated for impact on aquifer dilution and winter water table levels.

9. The designation of the Study Area as a "Principal Source Aquifer" for the downgradient rural areas and for Junction City should be considered.

10. The location and testing of existing deep wells for comparison of shallow and deep aquifer characteristics should be considered.

11. The consultant recommendations as listed in the "Consultant Summary, Chapter V" should be accepted by all appropriate jurisdictions.

12. The Lane County Commissioners, Oregon DEQ, and EQC should affirm that the information to date indicates a condition of "inconclusive data" as opposed to "a definite health hazard does or does not exist."

The above recommendations clearly indicate a staff analysis that final decisions on the methods of dealing with the groundwater conditions cannot be fully resolved at this time. It is staff opinion that enough indications have been shown of impacts of septic disposal on groundwater quality in this area to make it unwise not to pursue study completion and full modeling analysis.

IV. INTERIM REPORT DESCRIPTION AND LIMITATIONS

The purpose of the Interim Report was to determine whether the Study was appropriate in terms of design and to evaluate the general aquifer characteristics for anomalies that would require reevaluation and, further, whether preliminary analysis gave clear indications of problems or the absence thereof. In addition, the Interim Report was to be a decision point on whether deep aquifer analysis was needed and to provide guidance on the amount and type of additional data that would be needed. It was not expected that the Interim Report would provide definitive answers on the existence, extent or severity of contamination problems.

The study appears adequate to answer the questions it was designed to answer and the testing is largely on schedule. The analytical results show indications of problems, but the evidence is not conclusive, and the analysis is still not complete.

There is not a clear indication of whether a deep well analysis program (as originally envisioned in the study) is needed. The need for a deep aquifer analysis effort is related to the need of choosing special well standards as a management solution. Although special well standards remain an option, it is not yet clear over what areas these standards may be needed, nor whether such a solution is practical from cost and administrative viewpoints.

V. WORK TO BE COMPLETED

The following list of work activities is projected for the period from July to December, 1979, and relates, in part, to the "Unanswered Questions" listed in Chapter II. Descriptions of the purpose of each work activity are also included.

1. Continued Data Collection - Hydrologic and quality monitoring is expected to extend through September, 1979, in order to provide data for modeling of aquifer characteristics during a lowering water table period. This will indicate vertical movement and dilution of nutrients more clearly and provide a full water year's aquifer surface mapping.

2. Pollutant Inventory - Location and mapping of all significant pollutant water sources will enable a quantification of the contribution of septic leachate relative to overall loading.

3. Analysis of Nutrient Concentration Accumulation Patterns Using the Model - Predictions will be made of the areas of influence of nitrate concentration in and downgradient of the Study Area. This will be done for several development patterns including (a) present conditions, (b) increased development density, and (c) sewering of River Road.

4. Evaluation of Bacterial Contamination - Using full-year data, an attempt will be made to correlate bacteria dispersion information and observed patterns of occurrence. Efforts will be made to delineate potential zones or localized areas of contamination.

5. Evaluation of Alternatives - A description of the available alternatives and their potential benefits will be developed. This description will include a brief evaluation of cost, and social, political and environmental factors for several scenarios. Any additional data needs will be indicated. This listing will be initiated following completion of the Interim Report and will be completed in the Final Report.

6. Final Report Preparation - This report will summarize the total data analysis and attempt to answer questions raised in the Interim Report. Work on the Final Report will not be started until all necessary monitoring and modeling analysis is completed, probably in October, 1979.

7. Public Involvement - Immediate efforts will consist of slide presentations and meetings held to present and explain the information in the Interim Report. During preparation of the Final Report, feedback from citizens on the study and decision alternatives will be solicited, and this information will be used in evaluation of options and making final recommendations.

VI. CONSULTANT SUMMARY EXPLANATION

A. Purpose

The Consultant Summary portion of the Interim Report is intended at this stage to address several issues, including:

1. Adequacy of Study Design and monitoring data network, including alterations that were necessary.

2. Technical data needs remaining or needed to expand the study results.

3. An evaluation of the study's accuracy and reliability.

4. An evaluation of the usability of the modeling system, and

5. A summary of the dispersion and decay analysis to be presented in total in Technical Appendix B, July, 1979.

What is presented here is a short synopsis of the Consultant Summary.

B. Technical Description

The technical portion of the groundwater study has four major aspects:

1. Hydrologic modeling and determination of general aquifer characteristics;

2. Local bacterial dispersion and decay analysis;

3. Localized determination nutrient (NO_3) dispersion and decay; and

4. General area nutrient (NO_3) movement and accumulation analysis plus projections of nutrient buildup.

The model analysis is primarily used in determination of hydrologic characteristics, but it is partially dependent on information from the nutrient dispersion analysis, and the modeling results will be directly applicable to the nutrient accumulation analysis. Each of these study aspects is described in more detail in following sections.

C. The Model Description

The modeling approach is useful in defining general aquifer responses to changes in the amount of water added to or removed from the aquifer. The model uses information from test

points located throughout the area to tie local site variations into a composite description of groundwater fluctuations. The specific modeling information obtained then allows a detailing of water table contours, seasonal variation water level response to precipitation and river level, and information on the direction, rate and impacts of underflow, imported water and storm drainage.

Briefly stated, information on well capacity, draw down characteristics and response to rainfall for an array of points is combined with measured values for hydrologic conductance (K) and effective water table porosity (S) to solve a series of equations incorporating Pinder's model for each test site. This model balances known additions ad removals of water to produce the observed water table change. The "K" and "S" values are taken from field tests at 15 test sites. In general, since inputs such as rain, septic systems, underflow and removals, such as loss to the river, transpiration, evaporation, and well withdrawal of water are known or can be estimated, the model develops patterns for velocity and direction of flow.

The results for each point in the test array or grid are compared and the product is a printout and general map of groundwater level and flow.

Once a complete picture of the pattern of water table response is known, the entire aquifer can be treated as the integrated unit it really is and a specific analysis can account for induced changes, such as sewering, increase or decrease in population, heavy or light rainfall years, major new water withdrawals or additions and related conditions.

The complete model is then useful not only to evaluate and predict the results of specific activities but also to provide the necessary information on direction flow velocity, dilution and dispersion necessary to evaluate nutrient accumulation and movement.

D. Local Bacterial Dispersion

The purpose of this analysis is to evaluate the potential for rapid "macropore" migration of coliform bacteria in the groundwater and to determine the length of bacterial viability (survival period). The term "macropore" refers to the presence of variable small channels by which groundwater and bateria may pass rapidly through the soil. Such pores may be caused by a variety of conditions such as coarse gravel lenses, root channels, buried logs and small animal holes.

Tests were conducted by injecting specially labeled fecal coliform bateria into a drainfield trench (at the Shirley Road site in Santa Clara) and then testing for the presence of organisms at various times at a series of downgradient sampling points. The rate of travel as well as the decrease in numbers from one site to another were studied. Additionally, the concentration of those bacteria which were stored in the groundwater in a semi-permeable chamber were tested periodically to correlate survival in the existing groundwater environment. The results of these experiments indicated that "macropore" transmission can occur at rates of up to 20 feet in 2.5 hours. Bacterial survival was determined to be at least 20 days.

The injections of bacteria for dispersion were performed twice (April and May) and monitored for several weeks following each injection. The results of this analysis are to be presented in "Technical Appendix B - Dispersion and Decay Analysis."

E. Local Nutrient Dispersion and Decay Analysis

In a manner similar to bacterial dispersion procedures, ammonium nitrate (NH_4 NO_3) was injected into the dispersion trench in Santa Clara and the rate of movement and change of NO_3 concentrations was monitored over several weeks. The injections was done at two different concentrations in order to verify the results. The data from these tests provide values for nutrient dilution, dispersion and downgradient movement which are important both to the model and to predict downgradient zones of nitrate concentration.

Results indicated that, because of subsurface channels, this nutrient movement can be rapid, and dipersion may be affected by subsurface channelizations. These results are analyzed in detail in "Technical Appendix B - Dispersion and Decay Analyis" which will be available in July, 1979.

F. General Nutrient Accumulation and Movement

This aspect of the analysis is not complete. It will utilize the information from the model on the flow velocity and direction for each test site, plus information on nutrient loading from septic systems, rainfall runoff and other pollutant sources in order to determine levels predicted and areas of high nitrate concentrations. This analysis will also provide prediction of the changes in concentration in these accumulation zones as the groundwater moves northwest through and out of the study area.

By adjusting the model assumptions, it will be possible to predict the impact of specific proposed management options

such as an increase in development density or a change in pollution sources in portions of the Study Area.

This nutrient accumulation analysis aspect is dependent on both a complete hydrologic model and a full pollutant inventory. Results are not expected until December, 1979 after the monitoring phase is complete in October, 1979.

VII. OTHER CONSIDERATIONS

A. Health Hazard Determination/Public Involvement

As indicated previously, the Interim Report cannot make a finding on the existence or absence of a health hazard. There are two reasons for this: 1) the analysis is incomplete at this time, and 2) the responsibility for such a decision lies with public agencies with authority to define and enforce such a decision.

Guidance on these decisions is the role of this groundwater study, with the advice and comments of the staffs of L-COG and Lane County, and the residents of River Road, Santa Clara, and the rural areas downgradient of the Study Area.

The transmission of information and the coordination of decision making on River Road/Santa Clara groundwater protection is a complex process.

The study is highly technical, involving natural processes that are not fully understood even by the "experts." Data interpretations require a considerable degree of familiarity with the analysis techniques. The U.S. Environmental Protection Agency has correctly foreseen that the presentation of information in a manner meaningful to a diverse public audience is a critical task of both L-COG and Lane County. The slide presentations to date on study design and initiation, plus this Interim Report are attempts to make this information accessible to the public. It is hoped that enough information can be made available to encourage and support continued active public participation.

A second factor is the question of responsibility and impacts. In the present situation it is entirely possible that any real health hazards may have impacts on groups or individuals outside the Study Area. The population that may be closest to any potential problems is also partially insulated from these problems by the provision of imported domestic water. We do not presently know how many people (or in which areas) are currently using domestic groundwater supplies.

Although the study to date indicates that there are impacts of septic waste disposal on groundwater, it may well be that the jurisdictional bodies (Lane County, DEQ, EQC) will have to make a determination of when an impact is "acceptable" or "not acceptable" for decision planning purposes. It is the staff's opinion that at least three, and perhaps four areas should be identified when analyzing the data to date: River Road, Santa Clara, northerly rural areas and, possibly, the industrial/residential areas west of Prairie Road. The decision-making bodies should keep these distinctions in mind when considering the data, local testimony, impacts, and the potential application of remedies.

B. Jurisdictional Concerns

It is worth noting at this point the multitude of agencies and jurisdictions that will have to be consulted in developing alternatives.

LANE COUNTY - responsible for the general public health, safety and welfare, and specifically contracted with managing state pollution (septic) control regulations. Lane County has authorization to initiate formation of districts, to establish citizen groups, and to pass resolutions on the implementation of control options. Although a member of the Metropolitan Wastewater Management Commission, Lane County is not normally a provider of sewerage or water services. Inasmuch as it was the Lane County Board of Commissioners that originally requested a development moratorium and subsequently requested the lifting of this moratorium, it is obvious that this elected body closest to the affected citizens will continue to demonstrate a direct concern for the needs of the local residents.

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY - charged with maintaining the quality of the water of the state through wastewater management. The DEQ recommends rules and policies to the EQC and legislature for adoption. The DEQ has little control over local jurisdictional boundaries.

OREGON ENVIRONMENTAL QUALITY COMMISSION - this body holds public hearings on, and sets rules governing, disposal of septage wastes such as new installation moratoria or control standards. The EQC is the agency responsible for making a Health Hazard determination.

OREGON STATE HEALTH DIVISION - charged with administration of Oregon Revised Statutes on health hazard declaration in ORS ch. 222. Has a relationship to Federal Drinking Water Regulation.

OREGON STATE WATER RESOURCES DEPARTMENT - shares a dual responsibility with the Department of Environmental Quality on protecting groundwater in the State. They would also need to adopt any special well standards that would be proposed for aquifer protection.

CITY OF EUGENE - has taken a position that the provisions of urban services (sewerage) to the River Road and Santa Clara areas, if performed, should be provided by the closest general purpose government, that is, Eugene, and have noted that the City will not provide these services without annexation or the agreement to future annexation. These considerations put constraints on sewerage options.

LANE COUNTY LOCAL BOUNDARY COMMISSION - at the drafting of this report, this state agency may cease to exist due to legislation activity. If it survives, the following description is of assistance: A local arm of a state agency charged with enforcing State laws on the setting of service district responsibilities and boundaries. These laws require certain service districts to acquire nearby city approval before establishment and also govern determinations of fact regarding the needs and adequacy of certain district formations. Obviously, the Boundary Commission is vested with authority that may restrict certain options.

METROPOLITAN WASTEWATER MANAGEMENT COMMISSION - set up by a "Joint Powers Agreement" between Eugene, Lane County and Springfield, this Commission is constructing a facility in the area for treatment of sewage wastes. The facility is sized to serve the population of River Road and Santa Clara and costs of major interceptors to these areas are also included. The MWMC is independent of groundwater concerns since failure of RR/SC to sewer will merely extend their plant life for other areas. However, the land application of sewage sludges or treated wastewater is a potential source of groundwater recharge which might become significant in the future. The decisions on these disposal options are now being made.

EUGENE WATER AND ELECTRIC BOARD - provides water to the area and, hence, provides imported recharge water. EWEB is constrained from supplying water beyond the Urban Service Area but remains the local source of non-well water supply to the area.

CITY OF JUNCTION CITY - obtains its water from wells 3-to-4 miles downgradient of the Study Area. Junction City has a need to identify any impact presented to those wells and take measures to protect the groundwater supplying its wells. Information of assistance should be forthcoming in part from this study.

L-COG - is charged with the general study progress, ensuring adequate local government cooperation and providing opportunities for public information and feedback. L-COG is also responsible for ensuring that Consultant work meets criteria of accuracy and reliability.

U.S. ENVIRONMENTAL PROTECTION AGENCY - has provided 75 percent of the study funding, monitors overall program and budget progress, and strongly encourages the implementation of groundwater programs.

All user and management groups, both in the Study Area and downgradient in rural areas, need to be considered in terms of their health, safety, water needs, and waste disposal demands in evaluating the data and impacts, and in the definition and implementation of corrective actions. Not all agencies listed will be directly involved in each decision option, but they should all be kept informed of general progress as the study continues in order to minimize intergovernmental conflicts.

C. Implementation Concepts

It is premature to identify the wide range of alternatives for action. A problem has not been positively identified and a decision as to the directions to proceed has not been made. No particular "scenario" stands out as "most likely," but it seems reasonable that some directions will have to be taken, either to accommodate new growth, to protect sensitive areas to prevent health hazards, or to simply assure people that conditions do not warrant great concern.

It seems an inescapable conclusion at this time that discharge of septic wastes to the shallow RR/SC aquifer is having noticeable and measurable effects. Whether these are "significant" in terms of a health hazard related to groundwater is still unclear. It is desirable to list conceptual alternatives to be kept in mind during the analytical process. Actual directional decisions should not be expected until a determination of "hazard" is made by a responsible agency. The conceptual alternatives are of three basic types:

REMOVAL OF WASTE SOURCE

The wastes are primarily soluble nutrients (nitrate) and coliform bacteria or viruses. Removal of waste sources will consider primariy the removal of nitrates and coliforms. The possible problems associated with other toxic organics, such as nitorsamines or chlorinated organics that may form in septage and leach into groundwater, were not studied in this report, but should be kept in mind if further testing programs are developed.

1. Septic Wastes Removal by Sewering

This is undoubtedly the best-known and discussed alternative. As mentioned previously, the new metro treatment facility includes capacity for both River Road and Santa Clara. Sewering can be provided separately to River Road, Santa Clara, or the Prairie Road-Highway 99 Industrial area, either in block units or in a piecemeal fashion. The costs will be substantial, and estimates of these costs were made in 1976-77 for both sewering and treatment for River Road and Santa Clara.

b. Home Use Fertilizers (nitrates) - there is little information on this subject, and more data would be desirable. Reduction of excessive residential use of soluble nitrate (nitrogen) is a possibility.

c. Industrial Discharges - it does not appear that these discharges are a major source of nitrates or bacteria. If significant sources are found, discharge permits may be revised to eliminate these wastes by improvements in treatment or recycling.

d. Rainfall (nitrates and bacteria) - data to date indicate this is not a significant source of contamination. Rainfall is a useful dilution source. Potential changes in storm sewer policies are discussed below under the section on "Other Alternatives," page 25.

e. Underflow (nitrates and/or bacteria) - flow into the area from already-sewered areas doesn't appear to be a major problem at shallow levels because its volume contribution is limited. Should this source prove significant, remedial action will be difficult and probably expensive since it may involve the location and repair of seepages from sanitary sewers in a large up-gradient area. This process carries few guarantees of success.

PROTECTION OF WATER SUPPLIES

Conceptually, if the shallow aquifer is not a suitable and safe domestic source, a major option is to go to deeper water table supplies or provide imported water to all users that might be affected.

1. Use of Deeper Aquifer Sources

The most difficult aspects of this option relate to the lack of necessary data for rule development. There is little information on the depths and degree of interaction between shallow and deeper groundwater. In addition, the quality of those deeper waters is relatively untested. Regional hydrology theory predicts that there should be a net flow upward of regional water that "buoys" the shallow groundwater.

Special well standards would have to be considered to make sure this option is practical and a great deal of engineering design work and testing would be needed to "prove" the system. Current recommendations are to begin a program of location and monitoring of existing deep wells in order to provide information on these questions.

The biggest question surrounding sewering, other than cost, is that of annexation potential to the City of Eugene. The City position is that sewering should be done by the City, but only accompanying an agreement to annex at some future date. The River Road/Santa Clara Task Force has stated that sewering is desirable for River Road, and annexation may be the only route, but public sentiment does not favor annexation. In Santa Clara there is less support for sewering and more hostility to annexation.

Sewering of the area west of Prairie Road separately has been discussed little. It would be costly, and pressure lines may be needed. Questions of extension to nearby industrial areas and of connection rights of dwellings along transmission routes would have to be addressed.

It is still too early to accurately predict the impact of sewering of River Road on groundwater quality, but this prediction will be made before the completion of the study in late 1979. In general, however, sewering of River Road and, to lesser extent, Santa Clara, could be expected to significantly lower pollutant loadings to the shallow aquifer.

2. Alternative Systems

Although the River Road/Santa Clara Task Force studied and rejected the mass applications of alternatives to sewering due to administrative difficulty and public acceptance, it remains true that certain alternatives such as composting or human waste pumbping are technically possible. The selective removal of the human waste portion of septage accounts for only 20-30 percent of the water volume but over 90 percent of the nitrate and a large proportion of the bacterial contaminant load in septage. Removal of the human waste component could be expected to significantly reduce nitrate and bacterial loadings to the aquifer.

3. Other Source Removals

Although data to date do not indicate the following sources of waste are major problems, their removal should be considered:

a. Agricultural Fertilizer (nitrates) - application of agricultural nitrate is expected to be reduced significantly inside the urban service area as growth fills in development sites, reducing the agricultural land area. It is unlikely that major reductions in nitrogen application rates can be expected on lands that remain in the current patterns of production.

Other aspects of this approach that need investigation include:

- designation of Special Well Standards application areas.

- legal and practical questions of jurisdiction and enforceability over private users.

- questions of liability and responsibility for replacement costs of existing supplies.

- the needs to establish long-range monitoring programs, public awareness programs, etc.

2. Importation of Domestic Water

Presently, water is imported from the McKenzie River via EWEB and the local water districts to provide water supply to most users in the area. As noted previously, preliminary estimates are that approximately 200 users still rely on groundwater inside the Urban Service Area while virtually all residences downgradient use groundwater for domestic use.

The technical questions of supply of imported water to remaining residences in the Study Area are not difficult, but public information efforts would be necessary to locate and encourage non-users to connect to the existing systems. However, Statutory authority may or may not be available to require such connections.

Provision of water supply to areas outside the Urban Service Area would open policy questions of urban services provision that would require special planning. The technical limits to such "downgradient" provision have also been studied. Extension of water service areas would require consideration of special district formation and other administrative arrangements.

Perhaps the biggest problem with this option is that it avoids a confrontation with the basic waste disposal questions and continues policies that led to the present situation.

OTHER ALTERNATIVES

1. Storm Sewers

The use or non-use of storm sewers in the River Road and Santa Clara areas poses several oppositely balanced

tradeoffs. Rainfall is the largest source of shallow aquifer water and, hence, a significant dilution factor. On the other hand, the infiltration of rainfall, especially during wet years, causes rises of the water table up and into the leachate systems in some areas and may impair their functioning. At present, much of River Road and Santa Clara is not storm-sewered. A continuation of that condition avoids a great deal of local expense (although localized programs might be needed to deal with local flooding) and will continue to provide the shallow aquifer with a high level of supply for dilution and groundwater movement.

On the other hand, provision of storm sewers could decrease the infiltration by 10-30 percent. This reduction of infiltration might lower dilution 10-20 percent or more and result in higher pollutant levels but may also lower the water table sufficiently to increase the effectiveness of septic drainfields, thus providing better treatment.

The current study will attempt to evaluate the impact of storm sewer provision on water table levels for different seasonal conditions. This information may assist on the related impact questions.

2. Public Information

Public information is not only indispensable to an evaluation of the options already discussed, but also has important benefits in its own right, particularly in situations where contamination may affect only local areas. Public information and testing programs may help to spot unacceptable wells and alert users to possible concerns. Since local subsurface channelization may cause very localized problems, it is possible that relocation of existing supply wells in some cases may present an economical option short of public water or deep wells.

3. Other Data Gathering Programs

Additional study of groundwater characteristics is not at present a reliable approach to overall groundwater protections. However, certain options are somewhat dependent on appropriate technical data availability, and the following "gaps" in our knowledge are indicated:

- deep aquifer information on quality and quantity would be useful principally to explore special well construction options.

- information on bacterial and nutrient infiltration from "functioning" leachate systems would be useful in further evaluation of present contamination data.

- A well-testing program to cover people not on imported public water supply would provide information on existing problems of enrichment and might have health protection benefits, and

- testing of groundwater for other related contaminants, such as toxic organics, would extend our knowledge of the effectiveness of subsurface systems for general and high density residential uses.

SUMMARY

It is intended that the options listed in this chapter will be further explored as the data analysis is completed and that, pending a ruling on the actual condition of hazard, scenarios will be developed for comparing several of these options and evaluating them in the Final Report (due January, 1980).

CONSULTANT SUMMARY

RIVER ROAD/SANTA CLARA DATA ANALYSIS

INTERIM STATUS REPORT

CONSULTANT SUMMARY

JUNE 25, 1979

BY: H. RANDY SWEET
PRINCIPAL GEOLOGIST/HYDROGEOLOGIST

WITH: MICHAEL UNGS AND
TERRY RAHE

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SUMMARY AND RECOMMENDATIONS

The RR/SC Ground Water Analysis is proceeding on schedule. Major tasks in the consultant contract have been carried out as programmed in the Study Design (Sweet, et. al., 1978).

Ground-water quality analyses and related long range projections in the RR/SC area have historically been carried out under "non-average" water year conditions (Sweet, 1978). The 1978-79 water year has also proven to not be an "average" condition. However, development and application of the iterative digital model for aquifer evaluation has allowed for determination and distribution of the critical aquifer constants, i.e. hydraulic conductivity and specific yield, for the shallow alluvial aquifer. Additional model runs incorporating these constants with "average" water year conditions should allow for the establishment of steady state, i.e. time approaches infinity, aquifer conditions.

Detailed analyses of the steady state hydrology model with the inclusion of various NO_3-N loading data relating to specific pollutant loads; dispersion and decay rates as determined at the Shirley Site; and distribution of pollutant sources as determined by projected development scenarios will allow for projection of long term impacts to ground-water quality within and immediately down-gradient from the RR/SC study area. In order to complete these analyses, the study should proceed including the following recommendations.

1. Continue the present monitoring with a reduced intensity of water quality sampling and/or testing for the balance of the water year.

2. Locate and count the number of individual domestic water supply systems in and immediately down-gradient from the study area which are dependent upon a ground-water supply.

3. Develop a list of potential structural and non-structural alternatives to the current or projected practices in the study area and modify the balance of the study design and data accumulation to evaluate them, such as:

    a) determine the acceptable NO_3-N concentration planning limit for the study area as well as the down-gradient zone of influence;

b) delineate possible down-gradient zones of influence through analysis of existing water table maps for possible principal or sole source aquifer classification; and

c) consider addition of selected deep wells to the monitoring program to evaluate the possibility of developing a special well standard.

4. Inject marker bacteria into existing disposal system(s) near known bacterially contaminated monitoring wells for sampling and analysis.

5. Complete pollutant inventory and projected development/waste loading scenarios as planned.

6. Review ongoing infiltration and inflow study of Eugene to refine pollutant inventory, underflow and potential impacts to the RR/SC study area.

GENERAL OBSERVATIONS

Study Progress

Lane Council of Governments received grant approval from the Environmental Protection Agency to proceed with a Ground-Water Analysis of the River Road-Santa Clara (RR/SC) Area, (Figure 1) to be partially funded under Sec. 208 of Public Law 92-500 in July, 1978. Environmental Geology and Ground Water was subsequently retained to develop a Study Design (completed September, 1978); locate and/or install monitoring stations (completed November, 1978); and is currently involved in the data analysis portion of the study. The consultants data analysis contract is on schedule and Table 1 indicates the percent completion of the various tasks included in the contract.

TABLE 1

Percent Completion of Consultant Study Tasks

	Task	Approx. % Comp.
A-1	Staff Assistance	100
2	Pol. Source Inv.	90
B-1,2	D & D Analysis	100
3	D & D Rpt.	50
C-1	Model Debug	100
2	Int. Analysis	90
D	Public Presentation	50
E-1,2	Final Anal. & Rpt.	0

FIGURE 1

RIVER ROAD/SANTA CLARA GROUNDWATER STUDY AREA

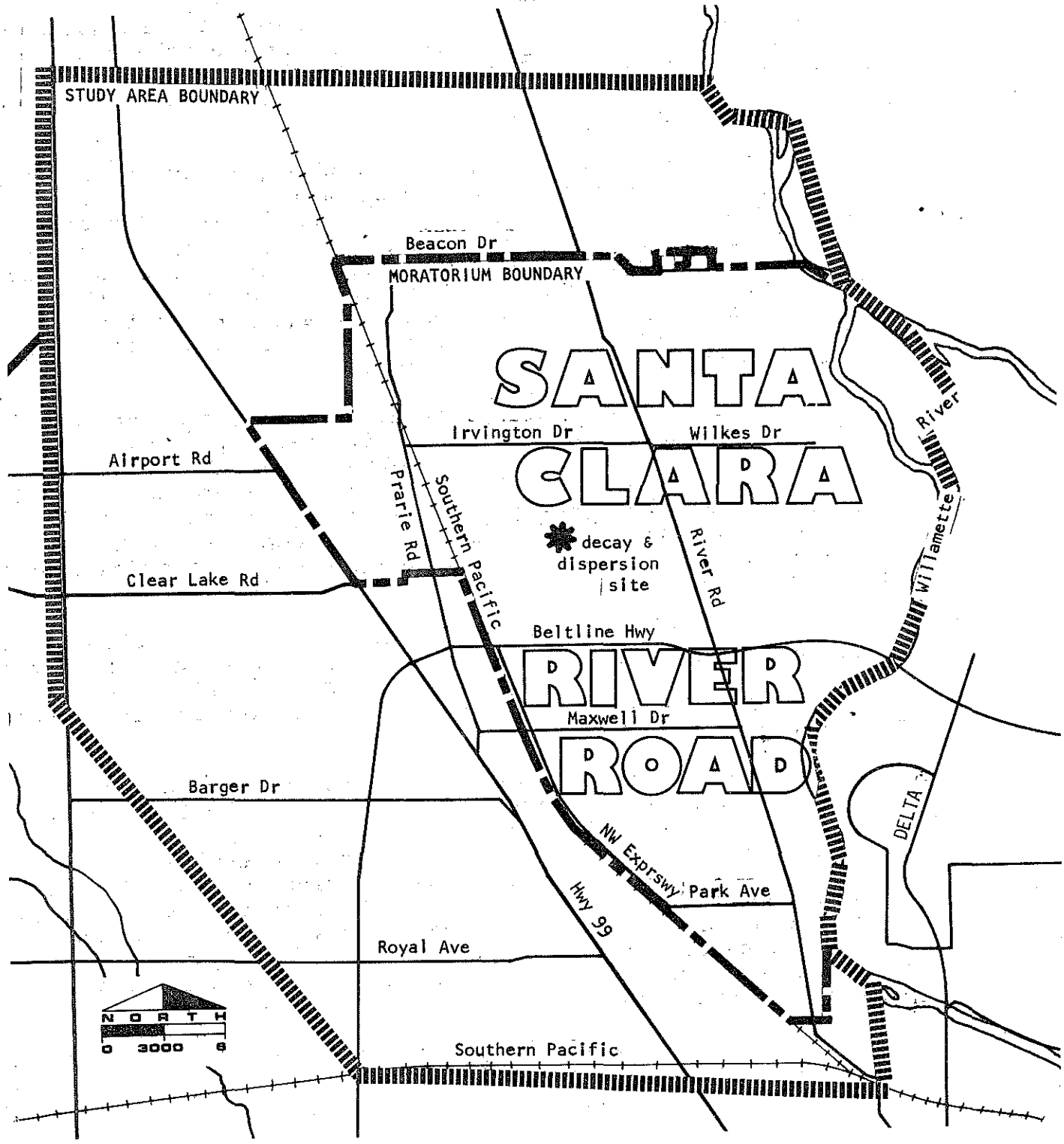


Figure 2 shows the projected schedule for various tasks included in the original Study Design. This report is to provide a technical data update and information necessary for the July 1, 1979, Phase I decision regarding adequacy of study design and any needs for study refinements. As noted on Figure 2, final data analysis and reporting are scheduled for completion by December, 1979.

Contingencies and Solutions

A historical problem in ground-water investigations in the RR/SC area has been the deviation of study period weather patterns from "average" conditions (Sweet, 1978). Figure 3 is a graph showing long term average vs. study period to-date precipitation. Again, average conditions have not been recognized. However, use of the hydrologic modeling techniques in this study have made the determination of necessary aquifer constants possible. Therefore, aquifer response to effect any recharge condition, e.g. precipitation, can be simulated.

A number of field problems have been encountered during the course of the study. Several wells had excessive turbidity following drilling and initial development. This problem was partially due to the low water table during September and October drilling and development and the associated difficulties in over pumping the wells for development. Increased well development as the water table rose with some sequenced flushing/pumpout work alleviated the problem.

Vandalism of the well installed at A-III following two sampling periods resulted in its loss to the study. In response to citizen requests the contingency funds and effort allocated for replacement of such an occurrence were expended in placement of a new up-gradient well at K-X.

Use of existing wells selected for incorporation in the study encountered a number of problems. Sampling was the major problem at these wells. Four wells (G-VII; H-V; K-VII; J-VIII) were never sampled due to plugged boreholes, sand backfills and/or difficult plumbing problems limiting access. At three existing wells (K-VII; 2; J-VI; J-VIII) sampling had to be discontinued as one was damaged, two had new pumps installed and owners requested their withdrawal from the program. Seven of 18 or nearly 40 percent of the existing wells scheduled have been lost to the study thus far.

The peristaltic pump used for well sampling encountered Problems. The high friction loss in the small diameter tubing

FIGURE 2

STUDY SCHEDULE

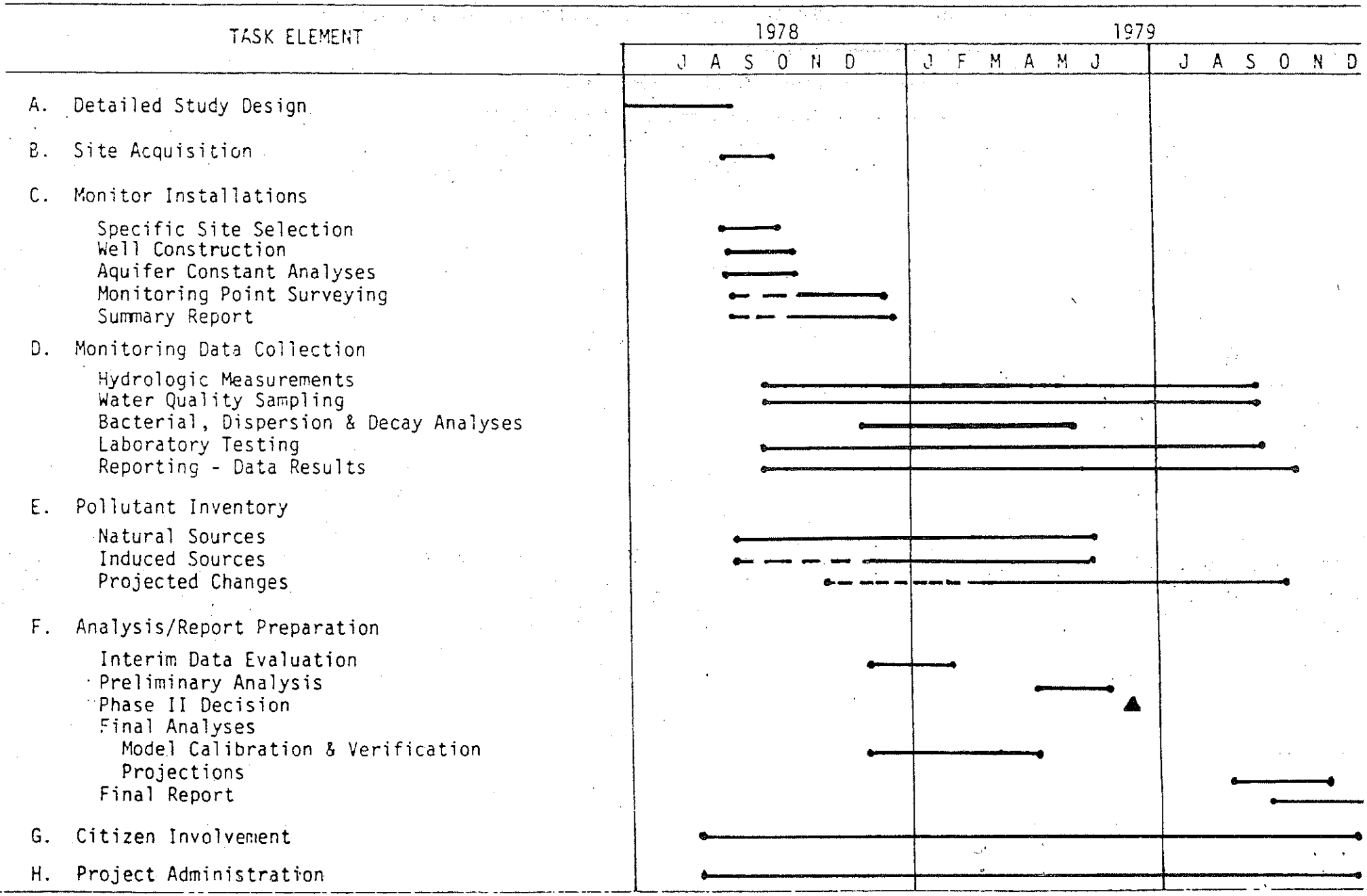
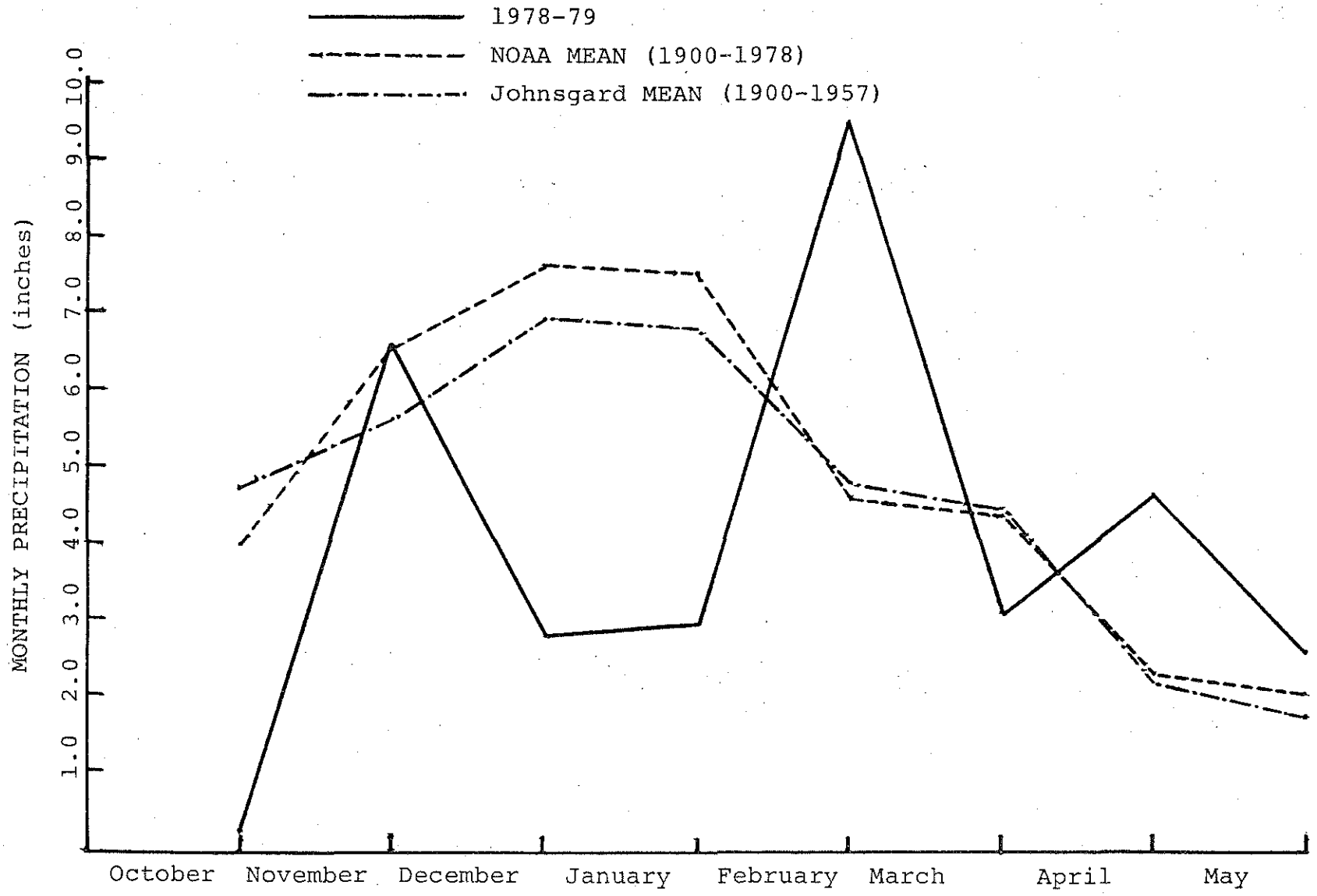


FIGURE 3

LONG TERM VS. 1978-79 WATER YEAR MONTHLY PRECIPITATION



on the pump apparently limited its lift capacity to seven feet. This also resulted in an electrical overload to the inverter on the field vehicle. Therefore, a simple manual pitcher pump with one-half to one and one-quarter inch poly tubing has been substituted to obtain well samples.

Laboratory testing of water samples encountered problems with the previously mentioned clay turbidity in samples. Sample filtration resulted in added preparation time prior to testing. Filtration was necessary for the NO_3+NO_2 cadmium reduction and the Cl colormetric titration tests. Bacterial samples could not be filtered prior to testing so lower volumes of sample were run through the membrane filter. This lower volume resulted in less refined data for those samples with low counts or concentrations of bacteria.

The Shirley Street dispersion and decay site experienced several problems. The drive point well placed at the site required redevelopment as the water table rose, due to turbidity problems as noted above. Initial layout of the site was based upon earlier regional water table maps. Following installation it was found that the local shallow water table gradient was toward the east or about 90 to 120 degrees away from the regional trend. This required the addition of nine new sampling piezometers in order to measure and sample downgradient ground-water flow. The number of piezometer nests (29) and the need to maintain sterile sampling conditions for bacterial tests precluded the use of standard steel security casings at the site. No problems were encountered with vandalism at the site until late in the study (May 27-28, 1979) when many of the shallow piezometers were vandalized. Several were repaired to allow limited continued sampling of the ongoing injection run. No additional injection runs were initiated and the site was abandoned.

HYDROLOGY

Geologic Findings

The previously cited studies have described the published geological references to the study area. Unfortunately, the earlier geologic mapping efforts tended to skip over the flatter alluvial areas of the Willamette Valley. During the selection of monitoring sites a topographic rise adjacent to a low waterfall in the Willamette River was examined. This rise is apparently an extension or separate basaltic butte associated with those mapped to the south and east. It is located in the

southeast part of the study area. This resistant basaltic unit has definitely influenced the depositional patterns within the local alluvial deposits.

Technical Appendix A which was completed November 17, 1978, gives the exact locations and includes detailed boring log data for the monitoring sites which were installed. This geological information will be used to develop cross-sections and interpretations for the final report.

Hydrogeology

Earlier work covering or including the current study area are referenced in Study Design. These studies were primarily designed to inventory the quantity and spot check the quality of ground water available for water supply in the Upper Willamette Valley. The Dickinson (1972) study dealt specifically with the study area but problems with monitoring site selection made the quantitative projection of results questionable.

Field work involving the determination of hydraulic conductivity and specific yield was completed during the wetter winter months as planned. Short term pump tests as well as dart tests were used to measure water level response and subsequently calculate hydraulic conductivities. This data will be included in the final Technical Appendix. A listing of the measured as well as the current computer generated values is included in Appendix A of this report.

Model Status

Ground-water quality studies in the RR/SC area have experienced a great deal of difficulty in long term projections due to climatic extremes, e.g. extremely wet or drought years. Modeling of aquifer response to measured perturbations provides a method of calculating and distributing aquifer constants. Once the aquifer constants have been accurately defined, one cannot only use them to predict the long term, i.e. steady state, response to natural recharge but also to simulate various management practices. Such management practices may include the quantity and spatial distribution of waste water discharge, delineation of critical ground-water recharge areas as related to storm drainage; and/or other structural-non-structural alternatives.

A modified version of Pinders (1969) finite difference model has been developed to model the "areal" or horizontal movement of the RR/SC water-table aquifer. The computer solves the "inverse problem" whereby one computes the aquifer parameters,

e.g. hydraulic conductivity (K) and specific yield (S), given a set of observations, e.g. water table elevations. The model uses an implicit alternating direction (ADI) solution technique. The sensitivity equations used in the solution of the inverse problem are taken from McElwee, et. al. (1978). In addition, the iterative technique used to compute the "optimal" values of the aquifer constants is based on the least squares estimation algorithm of Marquardt (1963).

A schematic representation of the hydrology model is given in Figure 4. In this figure, there are nine processes indentified. Each of the nine steps are explained below in greater detail:

1) The program starts with Pinder's hydrology model. The program predicts the water table elevations, h^m, for selected nodes and at specified time intervals on the m^{th} iteration.

2) The predicted values of h^m are passed to the sensitivity matrix routine.

3) Sensitivity matrices, $[\frac{\partial h}{\partial K}]$ and $[\frac{\partial h}{\partial S}]$ are generated. These represent the change in head due to a unit change in K and S. A matrix is generated for each node, each time interval, and for each aquifer constant.

4) The sensitivity matrices and predicted heads are transferred to the Marquardt routine.

5) The Marquardt routine computes the optimal change, ΔK, ΔS, in the aquifer constants by minimizing Δh, where $\Delta h = h - h^m$. The ΔK and ΔS values minimize Δh in a least-squares error manner.

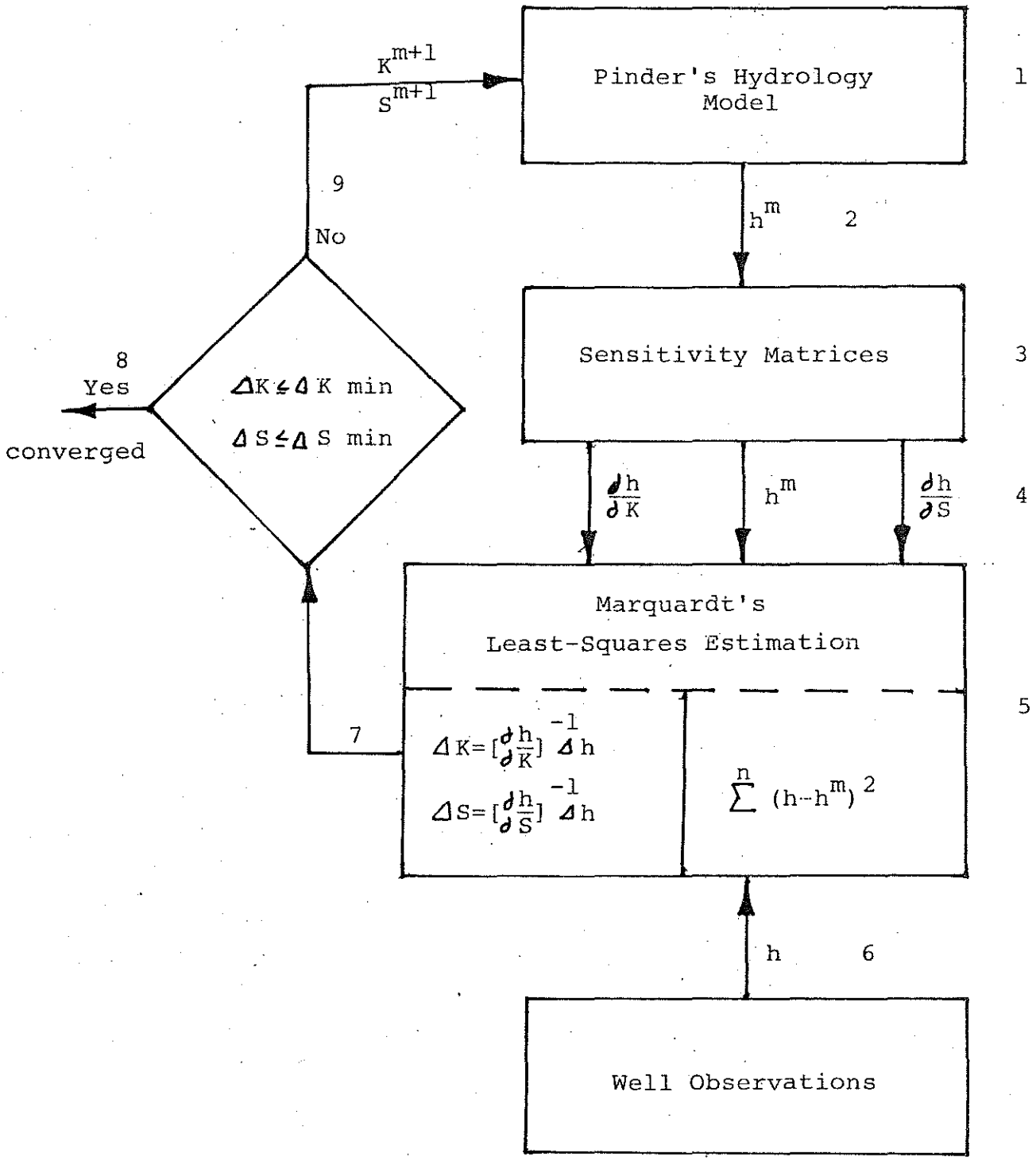
6) Water well observations, h, are provided at selected nodes and at specified time intervals, e.g. collected once a month.

7) The computed change in K and S are checked for convergence. The new aquifer constants are computed as $K^{m+1}=K^m+\Delta K$ and $S^{m+1}=S^m+\Delta S$.

8) If the current and previous computed values of K and S vary less than some minimum, e.g. one percent, convergence is assumed and the aquifer constants have been determined.

FIGURE 4

HYDROLOGY MODEL FLOW CHART



9) If there is a large variation in the new values of K and S, the iteration procedure is repeated, i.e. steps 1 through 8.

Additional detail of the hydrology model variables is given in Table 2.

The hydrology model has been utilized to calibrate the aquifer constants using the past seven months of observed data (10/78 to 5/79). An example printout of the program is given in Appendix A along with the output generated during a typical iteration. Final calibration of the model will require drainage of the aquifer throughout the ensuing dry seasons, i.e. to the end of the 1978-79 water year.

BACTERIAL DISPERSION AND DECAY

Site Design

The Shirley Street decay and dispersion site has been previously referenced in the Study Design. The site was established for the purpose of quantifying the manner in which bacterial ground-water pollution is transported by the ground water and the rate at which the potential pathogens can be expected to decay or dieoff. A tracer strain of Escherichia coli was introduced into the site and ground-water samples were collected from the down-gradient wells.

The E. coli strain utilized in the decay and dispersion site was labeled by making it resistant to levels of nalidixic acid which are normally toxic to non-resistant strains. The validity of this tracer technique has been established through research conducted by Hagedorn, et. al. (1978) and Rahe (1979). Readily available laboratory media were utilized to select for the E. coli group while the antibiotic resistance was used to separate the tracer organisms from other members of that group. Certain gram positive organisms were observed to grow under these selective conditions. However, the colonies were easily distinguished from the tracer organisms on the laboratory plates by the absence of colony coloration.

Refinements

Early results from the Shirley Street decay and dispersion site indicated that the direction of bacterial movement was not as it would be predicted by previous regional ground-water studies. As a result of this observation, additional wells,

TABLE 2

HYDROLOGY MODEL VARIABLES

The following processes are incorporated in the hydrology model.

PROCESS	COMMENT
Willamette River	constant head boundary adjusted to river profile on East
aquifer underflow	based on the initial water table elevations (10/78) and it forms the extreme West, North, South boundary conditions
rainfall	three day average
stormwater runoff	percent of rainfall that is exported
imported water	import by RR/SC Water Districts, monthly average
evapotranspiration	monthly average, Thornthwaite formula
pump/slug tests	used to define K and S values at 15 different nodes
hydrology observations	observed at over 65 locations, monthly

see Figure 5, were installed A' - I'. These piezometers were installed as a single slotted pipe which was constructed as described earlier in the Study Design. The excavations were prepared with a 3.25 inch hand auger to a depth of 6.5 or 7.0 feet depending upon distance from the injection trench.

An additional modification to the original design was made with the installation of a control chamber well. This well consisted of a ten foot section of four inch slotted PVC pipe (0.01 in. milled slots) installed to a depth of eight feet. The well served as a means of suspending a chamber containing antibiotic labeled bacteria in the ground-water environment. This chamber was sampled on the same time schedule as the other observation points at the site. This data provides a controlled dieoff or decay rate independent of filtration or dispersion.

Summary and Observations

A total analysis of bacterial dispersion and decay data is to be included in Technical Appendix B with a draft report due July 15, 1979. Following is a brief summary of the procedure and initial data review.

Samples of ground water collected from the wells prior to the injection of the tracer bacteria indicated that there were no gram negative organisms present on the site which would grow on the selective media utilized in this study. Subsequently, microorganisms were observed to move in highly localized flow patterns to a distance of at least twenty feet in as little as 3.5 hours, see Figure 6. Preliminary evaluation of the data indicates that this movement may be related to transport in macropores under saturated conditions. A time of first arrival and peak passage can be identified on Figure 6. The rate and distance of bacterial movement support the introduction of the tracer bacteria into selected existing drainfields near piezometers or wells which have exhibited high bacterial counts. This could provide more applicable data as to the potential impacts of bacterial movement from existing drainfields into the shallow ground-water flow system.

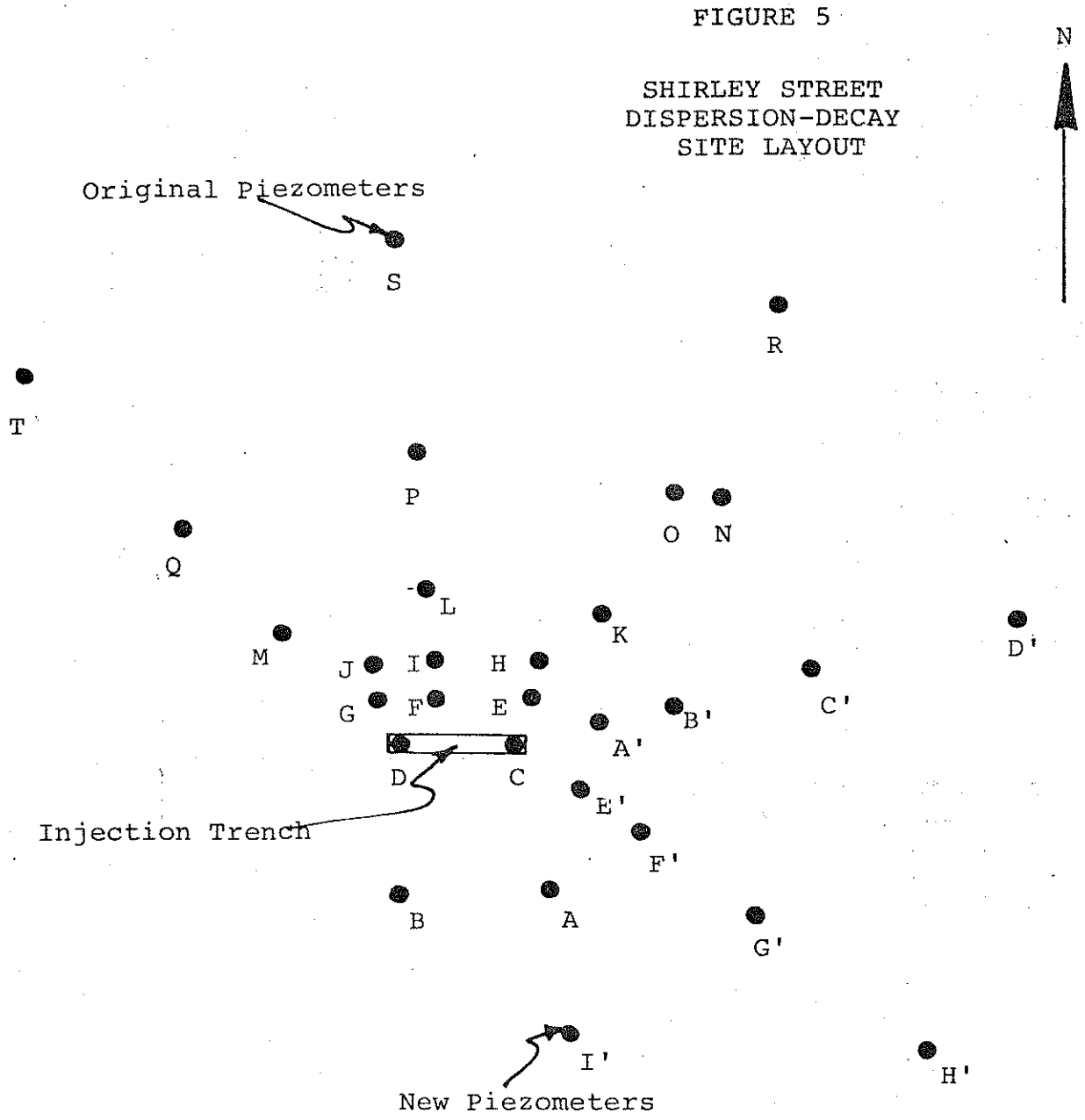
NO_3-N DISPERSION AND DECAY

Study Design and Layout

The site described in the bacteria dispersion and decay analysis including the refinements was also used to determine

FIGURE 5

SHIRLEY STREET
DISPERSION-DECAY
SITE LAYOUT



Scale 1" = 24'

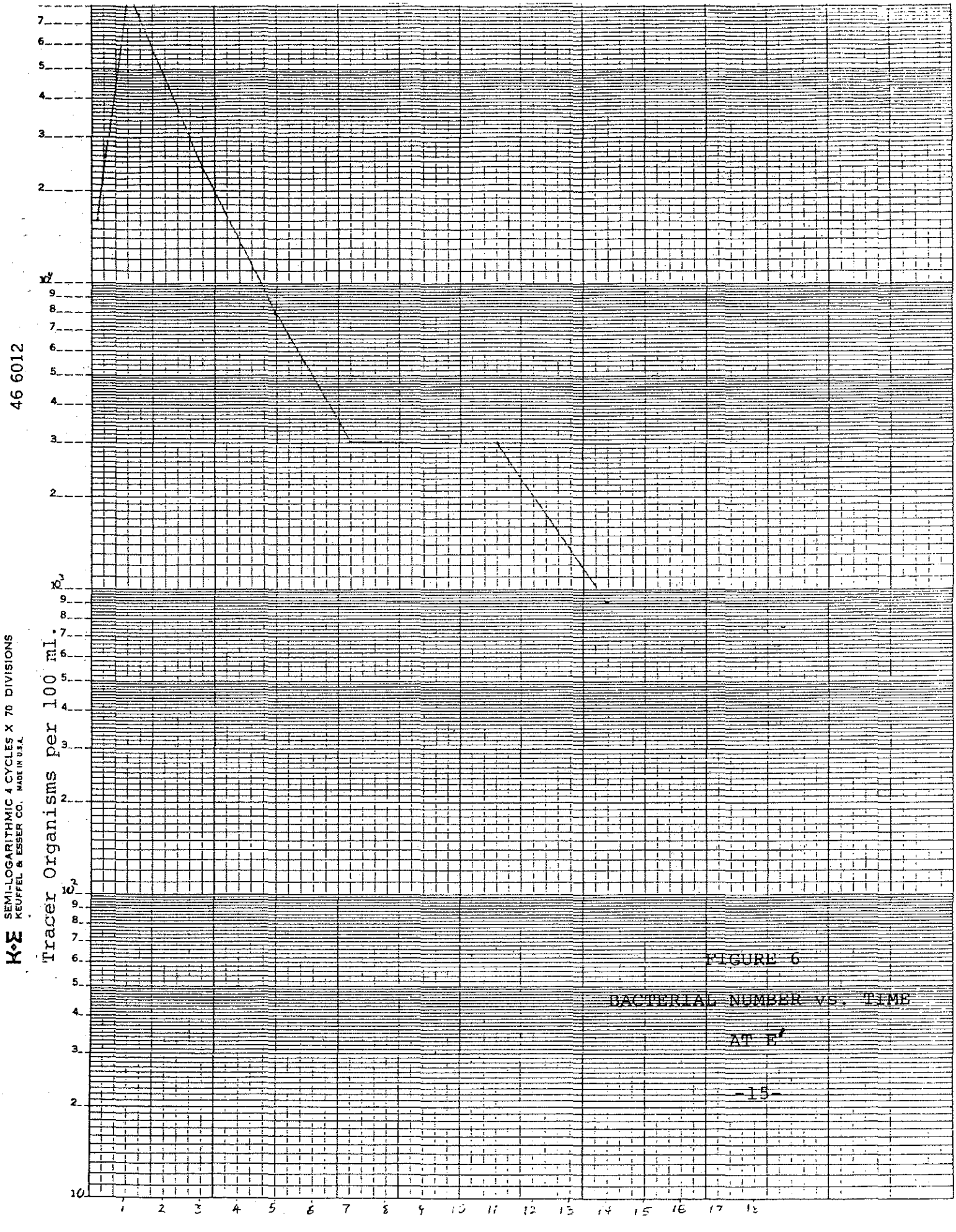


FIGURE 6

BACTERIAL NUMBER vs. TIME

AT E'

the nitrate-nitrogen (NO_2-N) dispersion and decay rates, see Figure 5. Two injections of tech grade 34-0-0 ammonium nitrate NH_4 NO_3 were carried out. The first injection included 16 liters of water with 16.9 g/l NH_4-N and a like concentration of NO_3-N. The second injection was 15 gal. of water with 33.3 g/l of NH_4-N and a like concentration of NO_3-N.

Sampling at the site was similar to that for bacterial samples. A Bausch & Lomb kit was calibrated by comparing split samples with standard cadmium reduction laboratory methods. Use of the kit subsequently reduced the testing time.

Undisturbed horizontal core samples were removed from test pit walls at the site following completion of sampling. These cores are being tested at the Oregon State University Soil Testing Laboratory to determine saturated hydraulic conductivity and effective porosity or specific yield. This data will be combined with measured gradient information to calculate the pore velocities necessary for final dispersion and decay determinations.

Summary and Observations

A total analysis of NO_3-N dispersion and decay is to be included in Technical Appendix B with a draft report due July 15, 1979. Following is a brief summary of analysis procedure and observations to date.

The one dimension mass transport equations and model described in the Study Design are being applied to the Shirley Site "mini-analysis" together with a standard slug test model in order to calculate apparent dispersion and decay. This same methodology will be incorporated into the final area wide determinations of existing projected solute mass transport.

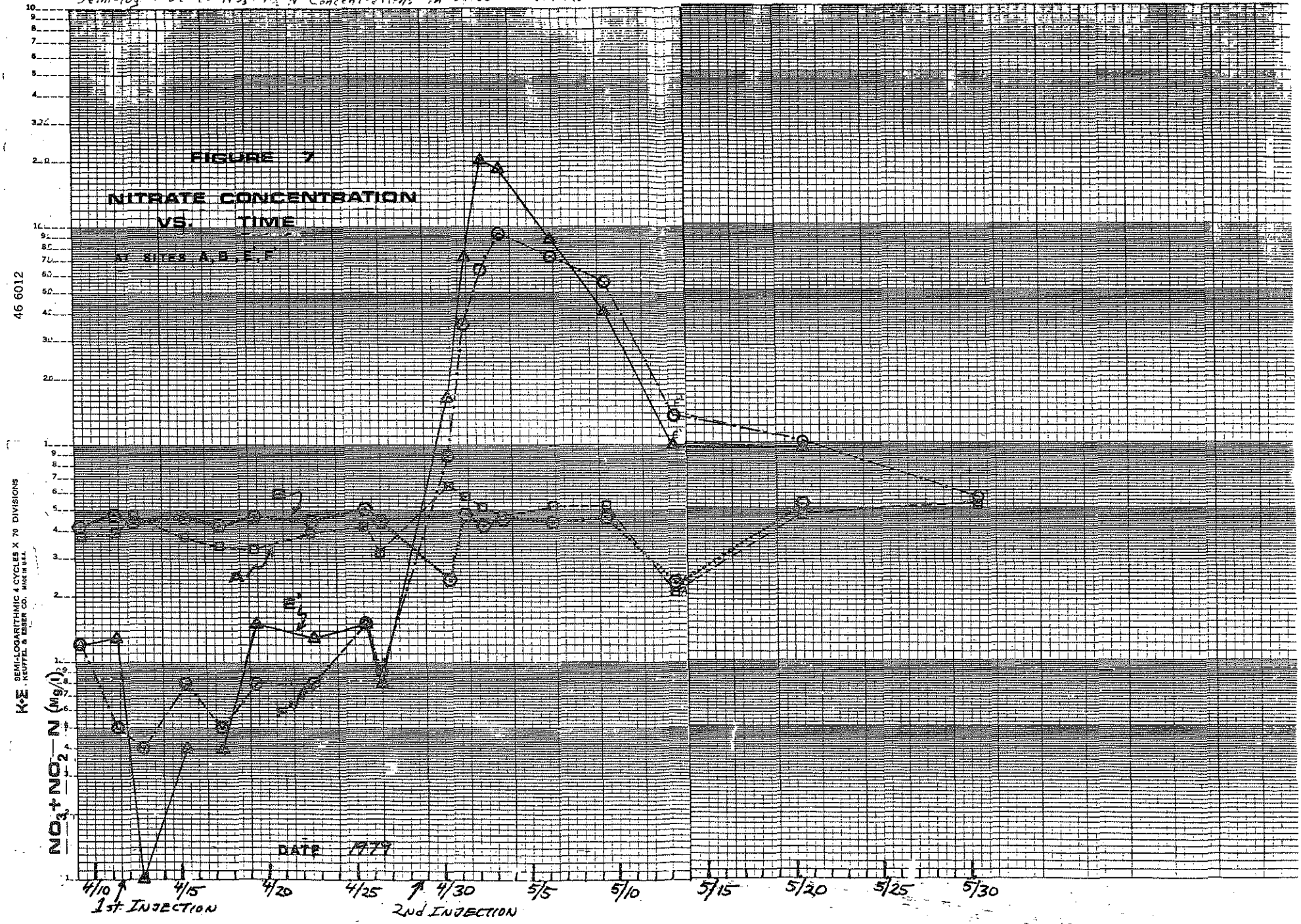
Movement of NO_3-N away from the injection trench with distinct peaks passing piezometers E' and F' can be seen on Figure 7. The rate appears to be somewhat slower than that shown on Figure 6 for bacteria. This may be due to selective macropore movement by the bacteria and/or retardation of nitrogen in the ammonium ion form. Cho (1971) has described this phenomina in clayey unsaturated, e.g. subtrench, soils. Further investigation of this potential is being conducted.

Semi-log plot of NO_3+NO_2-N Concentrations in selected wells

FIGURE 7

NITRATE CONCENTRATION VS. TIME

AT SITES A, B, E, F



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K•E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS
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REFERENCES

Cho, C.M., 1971, Convective transport of ammonium with nitrification in soil: Can. J. Soil Sci. 51: p. 339-350.

Hagedorn, C., D. T. Hansen, G. H. Simonson, 1978, Bacterial survival in soil under conditions of saturated flow: J. of Env. Qual., v. 7, p. 55-59.

McElwee, C. and M. Yukler, 1978, Sensitivity of ground-water models with respect to variations in transmissivity and storage: Water Resources Res., v. 14, n. 3. p. 451-459.

Marquardt, D.W., 1963, An algorithm for least-squares estimation of nonlinear parameters. J. Soc. Indust. Appl. Math, v. 11, n. 2, p. 431-441.

Pinder, G.F., 1969, An iterative digital model for aquifer evaluation: U.S.G.S. Open-File Rpt., 44 pp. plus listing.

Rahe, T.M., C. Hagedorn, E. L. McCoy and G. F. Kling, 1979, Transport of antibiotic-resistant Escherichia coli through Western Oregon hillslope soils under conditions of saturated flow: J. Env. Qual., v. 7, n. 4, p. 487-494.

Sweet, H.R., 1978, Ground-water contamination evaluation, River Road-Santa Clara, Oregon: Rpt. to Lane Co. Board of Commissioners, 91 p.

Sweet, H.R. with T. J. Rahe, 1978, River Road/Santa Clara ground-water analysis, monitoring array data base (preliminary report); Technical Appendix A: Rpt. to L-COG, 17 p. plus data sheets and plates.

Sweet, H.R., T. Rahe and M. Ungs, 1978, River Road-Santa Clara ground-water analysis, detailed study design: Rpt. to L-COG, 62 p.

APPENDIX

RIVER ROAD/SANTA CLARA GROUND-WATER EVALUATION

INITIAL CONDITIONS(DAY = 0) STARTS ON 10/21/78

INPUT PARAMETERS

LENGTH OF INITIAL TIME STEP IN DAYS = .200E+00
MAXIMUM PERMITTED PERIOD OF PUMPING IN DAYS = .162E+03
MAXIMUM PERMITTED NUMBER OF TIME STEPS= 200
FLUX DUE TO VERTICAL LEAKAGE FROM A CONFINING LAYER IN F/D= 0.
NUMBER OF NODES IN COLUMN OF MATRIX= 12
NUMBER OF NODES IN ROW OF MATRIX= 12
NUMBER OF ITERATION PARAMETERS= 5
ERROR CRITERIA FOR CLOSURE= .100E-02
MULTIPLIER FOR THICKNESS OF CONFINING LAYER= 1.000E+00
MULTIPLIER FOR STORAGE COEFFICIENT= 1.000E+00
MULTIPLIER FOR BOTTOM ELEVATION= 1.000E+00
MULTIPLIER FOR HYDRAULIC CONDUCTIVITY= 1.000E+00
MULTIPLIER FOR TRANSMISSIVITY= 1.000E+00
NUMBER OF TIME STEPS BETWEEN PRINTOUTS= 2
MAXIMUM PERMITTED NUMBER OF ITERATIONS 3
HYDRAULIC CONDUCTIVITY OF CONFINING BED 0.
SPECIFIC STORAGE OF CONFINING BED 0.
MULTIPLIER FOR PUMPING RATE FACR = .1000E+01

CELL WIDTH IN THE X DIRECTION(ACROSS THE PAGE) (FEET)

.556E+04 .556E+04 .478E+04 .330E+04 .260E+04 .264E+04 .244E+04 .242E+04 .224E+04 .148E+04 .124E+04 .124E+04

CELL LENGTH IN THE Y DIRECTION (DOWN THE PAGE) (FEET)

.676E+04 .676E+04 .628E+04 .912E+04 .324E+04 .250E+04 .300E+04 .286E+04 .252E+04 .204E+04 .172E+04 .172E+04

SPECIFIC YIELD (DIMENSIONLESS)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00
A	.150E+00	.150E+00	.300E+00	.150E+00	.300E+00	.300E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00
B	.150E+00	.150E+00	.263E+00	.150E+00	.500E-01	.150E+00	.163E+00	.300E+00	.280E+00	.260E+00	.260E+00	.260E+00
C	.150E+00	.150E+00	.100E+00	.120E+00	.100E+00	.250E+00	.200E+00	.150E+00	.130E+00	.260E+00	.260E+00	.260E+00
D	.150E+00	.150E+00	.150E+00	.150E+00	.100E+00	.150E+00	.200E+00	.300E+00	.300E+00	.300E+00	.260E+00	.260E+00
E	.150E+00	.150E+00	.150E+00	.290E+00	.150E+00	.125E+00	.100E+00	.100E+00	.150E+00	.260E+00	.260E+00	.260E+00
F	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.200E+00	.120E+00	.120E+00	.100E-02	.260E+00	.260E+00	.260E+00
G	.150E+00	.150E+00	.300E+00	.150E+00	.183E+00	.150E+00	.150E+00	.150E+00	.120E+00	.100E-02	.260E+00	.260E+00
H	.150E+00	.150E+00	.150E+00	.150E+00	.158E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00	.260E+00	.260E+00
J	.150E+00	.150E+00	.150E+00	.150E+00	.125E+00	.150E+00	.153E+00	.150E+00	.300E+00	.638E-01	.260E+00	.260E+00
K	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.139E+00	.988E-01	.100E+00	.260E+00
-K	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00

CONSTANT HEAD NODES

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01	-.100E+01	-.100E+01
A	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01	-.100E+01	-.100E+01
B	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01
C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01
D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01
F	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01
G	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01
H	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01	-.100E+01
J	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01	-.100E+01
K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-.100E+01

HYDRAULIC CONDUCTIVITY (FEET/DAY)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.183E+02	.150E+02	.320E+01	.126E+03	.150E+03	.127E+03	.127E+03	.127E+03	.127E+03	.127E+03	0.
B	0.	.150E+02	.156E+02	.150E+02	.158E+02	.150E+02	.150E+03	.150E+03	.150E+03	.127E+03	.127E+03	0.
C	0.	.129E+02	.150E+02	.150E+02	.540E+01	.454E+02	.292E+02	.127E+03	.320E+01	.127E+03	.127E+03	0.
D	0.	.150E+02	.150E+02	.150E+02	.750E+01	.150E+02	.346E+02	.101E+02	.100E+01	.150E+03	.127E+03	0.
E	0.	.150E+02	.150E+02	.150E+03	.150E+02	.100E+01	.350E+02	.150E+02	.150E+02	.127E+03	.127E+03	0.
F	0.	.150E+02	.150E+02	.150E+02	.150E+02	.127E+03	.320E+01	.150E+02	0.	.127E+03	.127E+03	0.
G	0.	.150E+02	.100E+01	.150E+02	.100E+01	.150E+02	.320E+01	.150E+02	.480E+01	0.	.127E+03	0.
H	0.	.150E+02	.150E+02	.150E+02	.150E+03	.150E+02	.150E+02	.193E+02	.150E+02	.127E+03	.127E+03	0.
J	0.	.150E+02	.150E+02	.150E+02	.338E+01	.150E+02	.150E+03	.150E+02	.100E+01	.100E+01	.127E+03	0.
K	0.	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.274E+01	.217E+01	.209E+02	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

ELEVATION OF IMPERMEABLE BASE OF AQUIFER(FEET)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	.252E+03	.252E+03	.255E+03	.260E+03	.258E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03
A	.252E+03	.252E+03	.255E+03	.260E+03	.258E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03	.260E+03
B	.258E+03	.258E+03	.261E+03	.265E+03	.271E+03	.271E+03	.271E+03	.273E+03	.273E+03	.273E+03	.273E+03	.273E+03
C	.267E+03	.267E+03	.270E+03	.275E+03	.276E+03	.276E+03	.277E+03	.279E+03	.281E+03	.283E+03	.283E+03	.283E+03
D	.280E+03	.280E+03	.280E+03	.280E+03	.282E+03	.280E+03	.280E+03	.289E+03	.288E+03	.288E+03	.288E+03	.288E+03
E	.281E+03	.281E+03	.281E+03	.281E+03	.283E+03	.285E+03	.287E+03	.289E+03	.291E+03	.294E+03	.294E+03	.294E+03
F	.282E+03	.282E+03	.282E+03	.284E+03	.286E+03	.289E+03	.291E+03	.291E+03	.296E+03	.296E+03	.296E+03	.296E+03
G	.283E+03	.283E+03	.283E+03	.286E+03	.289E+03	.286E+03	.293E+03	.296E+03	.300E+03	.305E+03	.305E+03	.305E+03
H	.288E+03	.288E+03	.288E+03	.288E+03	.288E+03	.291E+03	.295E+03	.303E+03	.303E+03	.303E+03	.303E+03	.303E+03
J	.290E+03	.290E+03	.290E+03	.290E+03	.291E+03	.295E+03	.300E+03	.303E+03	.306E+03	.310E+03	.319E+03	.319E+03
K	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.309E+03	.315E+03	.315E+03
-K	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.305E+03	.309E+03	.315E+03	.315E+03

ELEVATION OF GROUND SURFACE(FEET)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.348E+03	.350E+03	.360E+03	.357E+03	.359E+03	.355E+03	0.	0.	0.	0.	0.
B	0.	.357E+03	.361E+03	.368E+03	.370E+03	.367E+03	.370E+03	.371E+03	.372E+03	0.	0.	0.
C	0.	.366E+03	.369E+03	.375E+03	.375E+03	.375E+03	.376E+03	.378E+03	.380E+03	.380E+03	0.	0.
D	0.	.368E+03	.369E+03	.380E+03	.381E+03	.381E+03	.385E+03	.386E+03	.387E+03	.373E+03	0.	0.
E	0.	.370E+03	.372E+03	.381E+03	.383E+03	.380E+03	.386E+03	.388E+03	.390E+03	.394E+03	0.	0.
F	0.	.372E+03	.377E+03	.382E+03	.384E+03	.385E+03	.390E+03	.390E+03	.395E+03	0.	0.	0.
G	0.	0.	.383E+03	.385E+03	.388E+03	.386E+03	.392E+03	.396E+03	.400E+03	0.	0.	0.
H	0.	0.	0.	.390E+03	.388E+03	.395E+03	.400E+03	.402E+03	.406E+03	0.	0.	0.
J	0.	0.	0.	.385E+03	.391E+03	.392E+03	.400E+03	.400E+03	.406E+03	.409E+03	0.	0.
K	0.	0.	0.	0.	.391E+03	.390E+03	.400E+03	.405E+03	.406E+03	.408E+03	.411E+03	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

DISCHARGE(+)/RECHARGE(-) FROM AQUIFER(FEET/DAY)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
F	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
G	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
J	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

INITIAL WATER TABLE ELEVATION (FEET)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	.334E+03	.334E+03	.334E+03	.334E+03	.337E+03	.340E+03	.342E+03	.344E+03	.344E+03	.344E+03	.344E+03	.344E+03
A	.343E+03	.344E+03	.349E+03	.346E+03	.348E+03	.346E+03	.352E+03	.353E+03	.353E+03	.353E+03	.353E+03	.353E+03
B	.348E+03	.352E+03	.356E+03	.358E+03	.359E+03	.360E+03	.363E+03	.359E+03	.359E+03	.359E+03	.362E+03	.362E+03
C	.350E+03	.356E+03	.360E+03	.363E+03	.366E+03	.368E+03	.368E+03	.368E+03	.369E+03	.369E+03	.370E+03	.370E+03
D	.361E+03	.364E+03	.367E+03	.370E+03	.372E+03	.371E+03	.371E+03	.371E+03	.371E+03	.370E+03	.376E+03	.376E+03
E	.364E+03	.367E+03	.370E+03	.373E+03	.373E+03	.374E+03	.375E+03	.376E+03	.376E+03	.377E+03	.329E+03	.379E+03
F	.365E+03	.366E+03	.370E+03	.373E+03	.375E+03	.378E+03	.378E+03	.378E+03	.382E+03	.383E+03	.383E+03	.383E+03
G	.368E+03	.369E+03	.371E+03	.374E+03	.376E+03	.379E+03	.382E+03	.384E+03	.385E+03	.387E+03	.387E+03	.387E+03
H	.368E+03	.370E+03	.372E+03	.375E+03	.378E+03	.332E+03	.386E+03	.390E+03	.390E+03	.390E+03	.389E+03	.389E+03
J	.370E+03	.373E+03	.376E+03	.378E+03	.382E+03	.386E+03	.389E+03	.391E+03	.392E+03	.392E+03	.390E+03	.390E+03
K	.375E+03	.378E+03	.381E+03	.384E+03	.385E+03	.388E+03	.391E+03	.393E+03	.394E+03	.394E+03	.391E+03	.391E+03
-K	.380E+03	.383E+03	.386E+03	.388E+03	.388E+03	.390E+03	.393E+03	.395E+03	.396E+03	.396E+03	.392E+03	.392E+03

NUMBER OF DWELLING UNITS PER CELL THAT ARE IN THE RIVER ROAD WATER DISTRICT

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
E	0.	0.	0.	0.	0.	.105E+03	.790E+02	0.	0.	0.	0.	0.
F	0.	0.	0.	0.	0.	.210E+02	.422E+03	.439E+03	.394E+03	.420E+02	0.	0.
G	0.	0.	0.	0.	0.	.200E+01	.271E+03	.364E+03	.309E+03	.430E+02	0.	0.
H	0.	0.	0.	0.	0.	0.	.120E+02	.223E+03	.317E+03	.780E+02	0.	0.
J	0.	0.	0.	0.	0.	0.	0.	.400E+01	.246E+03	.540E+02	0.	0.
K	0.	0.	0.	0.	0.	0.	0.	0.	.900E+01	.900E+01	0.	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

NUMBER OF DWELLING UNITS PER CELL THAT ARE IN THE SANTA CLARA WATER DISTRICT

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
B	0.	0.	0.	0.	0.	.620E+02	.149E+03	.267E+03	.930E+02	0.	0.	0.
C	0.	0.	0.	0.	.400E+02	.455E+03	.558E+03	.681E+03	.335E+03	.590E+02	.300E+01	0.
D	0.	0.	0.	0.	0.	.211E+03	.501E+03	.355E+03	.235E+03	.300E+02	0.	0.
E	0.	0.	0.	0.	0.	.700E+01	.340E+03	.141E+03	.170E+02	.143E+03	.180E+02	0.
F	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
G	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
J	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

PERCENT OF PRECIPITATION THAT IS LOST TO RUNOFF(DECIMAL PERCENT)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.400E+00	.250E+00	.250E+00	.250E+00	.250E+00	.200E+00	.200E+00	0.	0.	0.	0.
B	0.	.400E+00	.300E+00	.300E+00	.350E+00	.350E+00	.400E+00	.400E+00	.300E+00	0.	0.	0.
C	0.	.400E+00	.400E+00	.350E+00	.300E+00	.400E+00	.400E+00	.400E+00	.400E+00	.300E+00	0.	0.
D	0.	.400E+00	.400E+00	.450E+00	.450E+00	.400E+00	.400E+00	.400E+00	.400E+00	.350E+00	0.	0.
E	0.	.450E+00	.400E+00	.450E+00	.450E+00	.500E+00	.500E+00	.600E+00	.600E+00	.350E+00	.500E-01	0.
F	0.	.450E+00	.500E+00	.500E+00	.500E+00	.450E+00	.400E+00	.450E+00	.500E+00	0.	0.	0.
G	0.	.450E+00	.500E+00	.600E+00	.600E+00	.500E+00	.400E+00	.400E+00	.500E+00	.700E+00	0.	0.
H	0.	.500E+00	.400E+00	.600E+00	.600E+00	.600E+00	.600E+00	.500E+00	.400E+00	.700E+00	0.	0.
J	0.	.500E+00	.450E+00	.550E+00	.600E+00	.600E+00	.700E+00	.600E+00	.600E+00	.600E+00	0.	0.
K	0.	.500E+00	.400E+00	.450E+00	.550E+00	.550E+00	.600E+00	.650E+00	.700E+00	.700E+00	.500E+00	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

WATER IMPORTED BY RIVER ROAD WATER DISTRICT (DAYS AND CUBIC FEET/DAY/DU)

0. -.364E+02 .400E+02 -.333E+02 .710E+02 -.359E+02 .102E+03 -.297E+02 .130E+03 -.403E+02 .161E+03 -.325E+02

WATER IMPORTED BY SANTA CLARA WATER DISTRICT (DAYS AND CUBIC FEET/DAY/DU)

0. -.37?E+02 .400E+02 -.369E+02 .710E+02 -.334E+02 .102E+03 -.329E+02 .130E+03 -.423E+02 .161E+03 -.297E+02

MEAN EVAPOTRANSPIRATION RATE (DAYS AND FEET/DAY)

0. .538E-02 .400E+02 .278E-02 .710E+02 .188E-02 .102E+03 .134E-02 .130E+03 .208E-02 .161E+03 .357E-02
.191E+03 .556E-02

PRECIPITATION RATE (DAYS AND FEET/DAY)

0. -.892E-01 .300E+01 0. .600E+01 -.167E-02 .900E+01 -.614E-01 .120E+02 -.278E-03 .150E+02 -.158E-01
.180E+02 -.128E-01 .210E+02 0. .240E+02 -.556E-03 .270E+02 -.275E-01 .300E+02 -.636E-01 .330E+02 0.
.360E+02 -.167E-02 .390E+02 -.61?E-01 .420E+02 -.194E-02 .450E+02 -.331E-01 .480E+02 -.389E-02 .510E+02 -.356E-01
.540E+02 -.111E-02 .570E+02 -.250E-02 .600E+02 -.556E-03 .630E+02 -.222E-02 .660E+02 0. .690E+02 0.
.720E+02 0. .750E+02 -.555E-03 .780E+02 -.278E-03 .810E+02 -.528E-01 .840E+02 -.917E-02 .870E+02 0.
.900E+02 -.361E-02 .930E+02 -.550E-03 .960E+02 -.944E-02 .990E+02 -.639E-02 .102E+03 0. .105E+03 -.111E-02
.108E+03 -.944E-01 .111E+03 -.317E-01 .11?E+03 -.289E-01 .117E+03 -.253E-01 .120E+03 -.258E-01 .123E+03 -.161E-01
.126E+03 -.122E-01 .129E+03 -.289E-01 .132E+03 -.228E-01 .135E+03 -.639E-02 .138E+03 -.111E-02 .141E+03 0.
.144E+03 -.194E-01 .147E+03 -.125E-01 .150E+03 0. .153E+03 0. .156E+03 -.242E-01 .159E+03 -.278E-03
.162E+03 0.

NODES AT WHICH THE SENSITIVITY OF DRAWDOWN IS TO BE COMPUTED WRT TO K AND S AT TIME(1) = .3500E+02 (DAYS)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0	0	0	0	0	0	0	0	0	0	0	0
A	0	1	0	1	1	0	0	0	0	0	0	0
B	0	1	1	0	1	0	0	0	1	0	0	0
C	0	1	1	1	1	1	1	1	0	0	0	0
D	0	0	0	0	1	0	1	0	1	0	0	0
E	0	0	0	0	0	0	1	1	1	0	0	0
F	0	0	0	0	0	1	1	1	1	0	0	0
G	0	0	0	0	1	0	0	0	1	0	0	0
H	0	0	0	0	1	0	0	1	0	0	0	0
J	0	0	0	0	1	0	1	0	1	1	0	0
K	0	0	0	0	0	0	0	0	1	1	0	0
-K	0	0	0	0	0	0	0	0	0	0	0	0

NODES AT WHICH HYDRAULIC CONDUCTIVITY IS TO BE COMPUTED

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0	0	0	0	0	0	0	0	0	0	0	0
A	0	0	0	4	3	3	0	0	0	0	0	0
B	0	3	0	0	0	3	3	3	3	0	0	0
C	0	0	4	4	0	0	0	3	3	3	0	0
D	0	0	0	3	0	3	0	3	3	3	0	0
E	0	0	0	3	0	0	0	3	3	3	0	0
F	0	0	0	0	0	3	3	3	0	0	0	0
G	0	3	3	0	3	3	3	0	0	0	0	0
H	0	0	0	0	3	0	0	0	3	0	0	0
J	0	0	0	0	0	0	3	0	3	3	0	0
K	0	0	0	0	0	0	0	0	3	5	0	0
-K	0	0	0	0	0	0	0	0	0	0	0	0

NODES AT WHICH SPECIFIC YIELD IS TO BE COMPUTED

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0	0	0	0	0	0	0	0	0	0	0	0
A	0	0	5	0	0	5	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	0	0	0	0	0
K	0	0	0	0	0	0	0	0	0	0	0	0
-K	0	0	0	0	0	0	0	0	0	0	0	0

DEFINITION OF CODES USED IN THE ABOVE

CODE=0 SKIP THIS NODE
CODE=1 ALL NODES ARE CONSIDERED AS NEIGHBORS(MAXI)
CODE=2 3I X 3J NEIGHBORS, 9 TOTAL IN THIS MINI
CODE=3 5I X 3J NEIGHBORS(NORTH-SOUTH), 15 TOTAL IN THIS MINI
CODE=4 3I X 5J NEIGHBORS(EAST-WEST), 15 TOTAL IN THIS MINI
CODE=5 5I X 5J NEIGHBORS, 25 TOTAL IN THIS MINI

OBSERVED WATER TABLE ELEVATION(FEET) AT TIME(4) = 111.00 (DAYS)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.350E+03	0.	0.	.352E+03	.349E+03	0.	0.	0.	0.	0.	0.
B	0.	.356E+03	.360E+03	0.	.369E+03	.365E+03	.364E+03	.360E+03	.361E+03	0.	0.	0.
C	0.	.364E+03	.369E+03	.364E+03	.374E+03	.371E+03	.370E+03	.371E+03	0.	.375E+03	.372E+03	0.
D	0.	0.	0.	0.	.378E+03	0.	.374E+03	.373E+03	.373E+03	.371E+03	0.	0.
E	0.	0.	0.	0.	0.	0.	.379E+03	.379E+03	.377E+03	.378E+03	0.	0.
F	0.	0.	0.	0.	0.	.383E+03	.381E+03	.382E+03	.382E+03	0.	0.	0.
G	0.	0.	.374E+03	0.	.380E+03	.383E+03	0.	0.	.388E+03	.388E+03	0.	0.
H	0.	0.	0.	0.	.385E+03	0.	0.	.394E+03	0.	0.	0.	0.
J	0.	0.	0.	0.	.385E+03	0.	.394E+03	0.	.394E+03	0.	.392E+03	0.
K	0.	0.	0.	0.	0.	0.	0.	0.	0.	.397E+03	0.	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

OBSERVED WATER TABLE ELEVATION(FEET) AT TIME(6) = 162.00 (DAYS)

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.345E+03	0.	0.	.351E+03	.349E+03	0.	0.	0.	0.	0.	0.
B	0.	.356E+03	.359E+03	0.	.360E+03	.365E+03	.363E+03	.360E+03	0.	0.	0.	0.
C	0.	.363E+03	.367E+03	.372E+03	.374E+03	.371E+03	.369E+03	.371E+03	.369E+03	.369E+03	0.	0.
D	0.	0.	0.	.375E+03	.377E+03	.378E+03	.377E+03	.374E+03	.374E+03	.372E+03	0.	0.
E	0.	0.	0.	.377E+03	0.	0.	.380E+03	.380E+03	.378E+03	.376E+03	0.	0.
F	0.	0.	0.	0.	0.	.382E+03	.382E+03	.382E+03	0.	0.	0.	0.
G	0.	0.	.374E+03	0.	.379E+03	.384E+03	.385E+03	0.	.388E+03	0.	0.	0.
H	0.	0.	0.	0.	.383E+03	0.	0.	.394E+03	.393E+03	0.	0.	0.
J	0.	0.	0.	0.	.384E+03	0.	.392E+03	0.	0.	.396E+03	0.	0.
K	0.	0.	0.	0.	0.	0.	0.	0.	.396E+03	.397E+03	0.	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

MARQUARDTS METHOD OF COMPUTING THE LEAST-SQUARES ESTIMATE OF NONLINEAR PARAMETERS

WHERE THE FOLLOWING PARAMETERS ARE DEFINED AS

```
     K =  39
     M =   1
     N =  235
ITRMAX =   4
EPSLN  =  .1000E-01
    NU =  .1000E+02
   TAU =  .1000E-02
```

INITIAL VALUE OF UNKNOWN PARAMETERS

```
B0( 1) =  .3200E+01  =  K( A, 3) (FEET/DAY)
B0( 2) =  .1259E+03  =  K( A, 4) (FEET/DAY)
B0( 3) =  .1500E+03  =  K( A, 5) (FEET/DAY)
B0( 4) =  .1500E+02  =  K( B, 1) (FEET/DAY)
B0( 5) =  .1500E+02  =  K( B, 5) (FEET/DAY)
B0( 6) =  .1500E+03  =  K( B, 6) (FEET/DAY)
B0( 7) =  .1200E+03  =  K( B, 7) (FEET/DAY)
B0( 8) =  .1500E+03  =  K( B, 8) (FEET/DAY)
B0( 9) =  .1500E+02  =  K( C, 2) (FEET/DAY)
B0( 10) =  .1500E+02  =  K( C, 3) (FEET/DAY)
B0( 11) =  .1270E+03  =  K( C, 7) (FEET/DAY)
B0( 12) =  .3200E+01  =  K( C, 8) (FEET/DAY)
B0( 13) =  .1270E+03  =  K( C, 9) (FEET/DAY)
B0( 14) =  .1500E+02  =  K( D, 3) (FEET/DAY)
B0( 15) =  .1500E+02  =  K( D, 5) (FEET/DAY)
B0( 16) =  .1011E+02  =  K( D, 7) (FEET/DAY)
B0( 17) =  .1000E+01  =  K( D, 8) (FEET/DAY)
B0( 18) =  .1500E+03  =  K( D, 9) (FEET/DAY)
B0( 19) =  .1500E+03  =  K( E, 3) (FEET/DAY)
B0( 20) =  .1500E+02  =  K( E, 7) (FEET/DAY)
B0( 21) =  .1500E+02  =  K( E, 8) (FEET/DAY)
B0( 22) =  .1270E+03  =  K( E, 9) (FEET/DAY)
B0( 23) =  .1270E+03  =  K( F, 5) (FEET/DAY)
B0( 24) =  .3200E+01  =  K( F, 6) (FEET/DAY)
B0( 25) =  .1500E+02  =  K( F, 7) (FEET/DAY)
B0( 26) =  .1500E+02  =  K( G, 1) (FEET/DAY)
B0( 27) =  .1000E+01  =  K( G, 2) (FEET/DAY)
B0( 28) =  .1000E+01  =  K( G, 4) (FEET/DAY)
B0( 29) =  .1500E+02  =  K( G, 5) (FEET/DAY)
B0( 30) =  .3200E+01  =  K( G, 6) (FEET/DAY)
B0( 31) =  .1500E+03  =  K( H, 4) (FEET/DAY)
B0( 32) =  .1500E+02  =  K( H, 8) (FEET/DAY)
B0( 33) =  .1500E+03  =  K( J, 6) (FEET/DAY)
B0( 34) =  .1000E+01  =  K( J, 8) (FEET/DAY)
B0( 35) =  .1000E+01  =  K( J, 9) (FEET/DAY)
B0( 36) =  .2738E+01  =  K( K, 8) (FEET/DAY)
B0( 37) =  .2170E+01  =  K( K, 9) (FEET/DAY)
B0( 38) =  .3000E+00  =  S( A, 2)
B0( 39) =  .3000E+00  =  S( A, 5)
```

OBSERVED DRAWDOWN(FEET)

HYDRAULIC CONDUCTIVITY (FEET/DAY) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	.183E+02	.150E+02	.320E+01	.126E+03	.150E+03	.127E+03	.127E+03	.127E+03	.127E+03	.127E+03	0.
B	0.	.150E+02	.156E+02	.150E+02	.158E+02	.150E+02	.150E+03	.150E+03	.150E+03	.127E+03	.127E+03	0.
C	0.	.129E+02	.150E+02	.150E+02	.540E+01	.454E+02	.292E+02	.127E+03	.320E+01	.127E+03	.127E+03	0.
D	0.	.150E+02	.150E+02	.150E+02	.750E+01	.150E+02	.346E+02	.101E+02	.100E+01	.150E+03	.127E+03	0.
E	0.	.150E+02	.150E+02	.150E+03	.150E+02	.100E+01	.350E+02	.150E+02	.150E+02	.127E+03	.127E+03	0.
F	0.	.150E+02	.150E+02	.150E+02	.150E+02	.127E+03	.320E+01	.150E+02	0.	.127E+03	.127E+03	0.
G	0.	.150E+02	.100E+01	.150E+02	.100E+01	.150E+02	.320E+01	.150E+02	.480E+01	0.	.127E+03	0.
H	0.	.150E+02	.150E+02	.150E+02	.150E+03	.150E+02	.150E+02	.193E+02	.150E+02	.127E+03	.127E+03	0.
J	0.	.150E+02	.150E+02	.150E+02	.338E+01	.150E+02	.150E+03	.150E+02	.100E+01	.100E+01	.127E+03	0.
K	0.	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.150E+02	.274E+01	.217E+01	.209E+02	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

SPECIFIC YIELD (DIMENSIONLESS) ON ITERATION NUMBER

-A	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00
A	.150E+00	.154E+00	.300E+00	.150E+00	.300E+00	.300E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00	.260E+00
B	.150E+00	.150E+00	.263E+00	.150E+00	.500E-01	.150E+00	.163E+00	.300E+00	.280E+00	.260E+00	.260E+00	.260E+00
C	.150E+00	.150E+00	.100E+00	.120E+00	.100E+00	.250E+00	.200E+00	.150E+00	.130E+00	.260E+00	.260E+00	.260E+00
D	.150E+00	.150E+00	.150E+00	.150E+00	.100E+00	.150E+00	.200E+00	.300E+00	.300E+00	.300E+00	.260E+00	.260E+00
E	.150E+00	.150E+00	.150E+00	.298E+00	.150E+00	.129E+00	.100E+00	.100E+00	.150E+00	.260E+00	.260E+00	.260E+00
F	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.200E+00	.120E+00	.120E+00	.100E-02	.260E+00	.260E+00	.260E+00
G	.150E+00	.150E+00	.300E+00	.150E+00	.183E+00	.150E+00	.150E+00	.150E+00	.120E+00	.100E-02	.260E+00	.260E+00
H	.150E+00	.150E+00	.150E+00	.150E+00	.158E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00	.260E+00	.260E+00
J	.150E+00	.150E+00	.150E+00	.150E+00	.125E+00	.150E+00	.153E+00	.150E+00	.300E+00	.638E-01	.260E+00	.260E+00
K	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.134E+00	.988E-01	.100E+00	.260E+00
-K	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.150E+00	.260E+00

COMPUTED DRAWDOWN (FEET) AT TIME = 35.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	-.134E+01	-.954E+00	-.204E+01	-.449E+00	-.104E+01	-.134E+00	.345E-04	-.278E-04	-.146E-04	-.416E-04	0.
B	0.	-.142E+01	-.102E+01	-.184E+01	-.421E+01	-.169E+01	.262E+00	-.139E+01	-.733E+00	-.709E-03	.694E-03	0.
C	0.	-.154E+01	-.225E+01	-.210E+01	-.272E+01	-.100E+01	-.136E+01	-.110E+01	-.189E+01	-.119E+01	.440E-04	0.
D	0.	-.140E+01	-.143E+01	-.126E+01	-.178E+01	-.159E+01	-.162E+01	-.970E+00	-.877E+00	-.312E+01	.201E-02	0.
E	0.	-.122E+01	-.137E+01	-.526E+00	-.133E+01	-.146E+01	-.195E+01	-.121E+01	-.152E+00	.121E+02	-.751E-02	0.
F	0.	-.130E+01	-.115E+01	-.112E+01	-.123E+01	-.812E+00	-.241E+01	-.232E+01	0.	.758E-03	.131E-02	0.
G	0.	-.129E+01	-.561E+00	-.777E+00	-.637E+00	-.122E+01	-.177E+01	-.191E+01	-.195E+01	0.	.116E-03	0.
H	0.	-.124E+01	-.168E+01	-.972E+00	-.941E+00	-.731E+00	-.100E+01	-.920E+00	-.171E+01	.188E-03	-.110E-03	0.
J	0.	-.126E+01	-.141E+01	-.120E+01	-.873E+00	-.811E+00	-.366E+00	-.674E+00	-.589E+00	-.195E+01	.270E-04	0.
K	0.	-.119E+01	-.151E+01	-.136E+01	-.117E+01	-.832E+00	-.521E+00	-.560E+00	-.469E+00	-.490E+00	-.185E+00	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

COMPUTED WATER TABLE ELEVATION (FEET) AT TIME = 35.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	334.000	334.000	334.000	334.000	337.000	340.000	342.000	344.000	344.000	344.000	344.000	344.000
A	343.000	345.637	349.954	348.139	348.449	347.639	352.134	353.000	353.000	353.000	353.000	353.000
B	348.000	353.322	357.024	359.644	363.209	361.694	362.238	360.593	359.933	359.001	361.999	362.000
C	350.000	357.140	362.445	365.097	368.520	368.903	368.961	369.304	370.888	370.186	370.200	370.200
D	361.000	365.397	366.428	371.265	373.483	372.587	372.625	371.770	372.277	373.122	375.998	376.000
E	364.000	368.223	371.366	373.526	374.326	375.463	377.355	377.506	375.852	364.915	329.288	379.300
F	365.000	369.299	371.147	374.125	376.226	379.212	380.008	380.521	381.900	382.999	382.999	383.000
G	368.000	370.287	371.561	374.777	376.637	380.215	383.767	385.911	386.846	387.000	387.000	387.000
H	368.000	371.238	373.678	375.972	378.941	382.731	387.001	391.120	391.712	390.000	389.000	389.000
J	370.000	374.281	377.413	379.204	382.673	386.811	389.306	391.674	392.589	393.950	389.600	389.600
K	375.000	379.180	382.506	385.358	386.167	388.882	391.521	393.560	394.409	394.890	391.165	391.000
-K	380.000	383.000	386.000	388.000	389.000	390.000	393.000	395.000	396.000	396.000	392.000	392.000

COMPUTED MAGNITUDE OF PORE VELOCITY(FEET/DAY) AND ITS VECTOR ANGLE(DEGREES) AT TIME = 35.00 (DAYS) ON ITERATION 1
THE ANGLE IS MEASURED POSITIVE CLOCKWISE, STARTING FROM THE HORIZONTAL

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000
A	0.000 0.000	.252 -136.938	.056 -95.845	.053 -85.927	1.256 -96.455	1.307 -81.408	1.546 -146.477	.496 -73.043	.308 -73.922	.178 -89.997	.659 -90.001	0.000 0.000
B	0.000 0.000	.116 -128.779	.073 -124.757	.149 -117.192	.643 -130.225	.216 -50.424	1.364 -114.077	.878 -50.664	.815 -86.579	.778 -67.956	1.775 -157.139	0.000 0.000
C	0.000 0.000	.113 -160.719	.181 -132.567	.088 -133.425	.075 -167.133	.167 -69.474	.147 -87.861	1.447 -96.681	.062 -112.111	1.265 -70.927	.721 -96.766	0.000 0.000
D	0.000 0.000	.258 -101.722	.176 -111.631	.187 -113.559	.113 -120.548	.111 -40.245	.134 -104.270	.019 -19.966	.002 145.582	.292 -163.161	1.529 -154.136	0.000 0.000
E	0.000 0.000	.087 -138.255	.103 -123.361	.357 -134.346	.017 150.224	.009 -115.933	.755 -114.581	.388 -83.979	.195 -56.090	4.514 27.795	20.493 34.009	0.000 0.000
F	0.000 0.000	.016 -145.727	.084 132.449	.090 176.108	.112 -128.100	1.297 -131.091	.017 -81.565	.064 -103.853	0.000 0.000	5.475 -93.021	18.099 -89.613	0.000 0.000
G	0.000 0.000	.031 -79.428	.002 -155.117	.105 -167.675	.003 165.425	.172 173.861	.043 -134.344	.231 -105.820	.057 -96.643	0.000 0.000	3.910 89.749	0.000 0.000
H	0.000 0.000	.055 -139.299	.121 -115.520	.062 -137.671	1.597 -134.512	.206 -143.659	.214 -147.076	.336 -130.643	.192 -76.402	.856 -34.624	.388 -34.168	0.000 0.000
J	0.000 0.000	.192 -111.373	.209 -104.196	.190 -101.146	.071 -126.408	.272 -126.772	1.199 -128.361	.107 149.961	.001 113.989	.035 -113.650	2.374 -.503	0.000 0.000
K	0.000 0.000	.324 -100.827	.326 -101.935	.417 -100.023	.177 -92.931	.160 -150.433	.159 -131.024	.154 -118.836	.025 -97.603	.004 159.497	.861 -15.548	0.000 0.000
-K	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000

COMPUTED DEPTH TO WATER(FROM GROUND SURFACE) (FEET) AT TIME = 35.00 (DAYS) ON ITERATION 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000
A	-100.000	2.023	.226	11.971	8.611	10.861	2.866	-100.000	-100.000	-100.000	-100.000	-100.000
B	-100.000	3.378	4.046	8.156	7.171	5.446	7.332	10.167	12.067	-100.000	-100.000	-100.000
C	-100.000	9.200	6.795	10.003	6.598	6.577	7.279	6.896	9.282	10.184	-100.000	-100.000
D	-100.000	2.603	.572	8.565	7.337	8.363	12.105	14.230	14.913	-.622	-100.000	-100.000
E	-100.000	1.777	.634	7.664	8.674	4.537	9.105	10.674	14.498	28.765	-100.000	-100.000
F	-100.000	2.701	5.853	8.075	7.774	9.688	10.092	9.879	12.950	-100.000	-100.000	-100.000
G	-100.000	-100.000	11.819	10.223	10.973	5.885	8.093	10.369	12.754	-100.000	-100.000	-100.000
H	-100.000	-100.000	-100.000	14.028	8.929	12.269	12.799	10.870	14.118	-100.000	-100.000	-100.000
J	-100.000	-100.000	-100.000	5.796	8.177	5.189	10.724	7.926	13.491	15.010	-100.000	-100.000
K	-100.000	-100.000	-100.000	-100.000	4.833	1.118	8.479	11.440	11.181	13.210	19.815	-100.000
-K	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000

IN THE ABOVE, A VALUE OF -100. INDICATES THAT THE COMPUTATION IS NOT APPLICABLE

COMPUTED DRAWDOWN (FEET) AT TIME = 111.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	-.441E+01	-.310E+01	-.547E+01	-.216E+01	-.454E+01	-.108E+01	-.871E-03	-.106E-02	-.104E-02	-.106E-02	0.
B	0.	-.408E+01	-.339E+01	-.613E+01	-.112E+02	-.540E+01	-.101E+01	-.331E+01	-.194E+01	-.192E-02	-.330E-03	0.
C	0.	-.509E+01	-.719E+01	-.684E+01	-.845E+01	-.349E+01	-.419E+01	-.367E+01	-.589E+01	-.212E+01	-.118E-02	0.
D	0.	-.460E+01	-.475E+01	-.420E+01	-.580E+01	-.513E+01	-.519E+01	-.323E+01	-.286E+01	-.398E+01	.786E-03	0.
E	0.	-.413E+01	-.442E+01	-.206E+01	-.424E+01	-.491E+01	-.604E+01	-.418E+01	.879E+00	.188E+02	-.753E-02	0.
F	0.	-.432E+01	-.390E+01	-.366E+01	-.401E+01	-.296E+01	-.767E+01	-.742E+01	0.	-.462E-04	.290E-03	0.
G	0.	-.428E+01	-.192E+01	-.282E+01	-.229E+01	-.398E+01	-.575E+01	-.617E+01	-.644E+01	0.	-.908E-03	0.
H	0.	-.420E+01	-.540E+01	-.344E+01	-.324E+01	-.276E+01	-.334E+01	-.334E+01	-.482E+01	-.226E-03	-.113E-02	0.
J	0.	-.429E+01	-.475E+01	-.410E+01	-.316E+01	-.281E+01	-.188E+01	-.242E+01	-.205E+01	-.621E+01	-.102E-02	0.
K	0.	-.401E+01	-.489E+01	-.443E+01	-.392E+01	-.302E+01	-.198E+01	-.212E+01	-.188E+01	-.206E+01	-.664E+00	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

COMPUTED WATER TABLE ELEVATION (FEET) AT TIME = 111.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	334.000	334.000	334.000	334.000	337.000	340.000	342.000	344.000	344.000	344.000	344.000	344.000
A	343.000	348.707	352.101	352.570	350.160	350.537	353.084	353.001	353.001	353.001	353.001	353.000
B	348.000	356.576	359.389	364.127	370.187	365.400	363.505	362.514	361.145	359.002	362.000	362.000
C	350.000	360.691	367.392	369.836	374.245	371.392	371.790	371.865	374.890	371.120	370.201	370.200
D	361.000	368.604	371.753	374.205	377.503	376.126	376.186	374.032	374.255	373.964	375.999	376.000
E	364.000	371.125	374.415	375.082	377.244	378.913	381.443	380.476	374.821	358.218	329.288	379.300
F	369.000	372.317	373.896	376.663	379.015	381.362	385.270	385.625	381.900	383.000	383.000	383.000
G	368.000	373.269	372.919	376.623	378.289	382.976	387.747	390.106	391.343	387.000	387.001	387.000
H	368.000	374.203	377.401	378.442	381.242	384.763	389.340	393.543	394.825	390.000	389.001	389.000
J	370.000	377.293	380.747	382.096	385.165	388.807	390.876	393.421	394.054	398.206	389.601	389.600
K	375.000	382.015	385.889	388.431	388.923	391.017	392.977	395.116	395.883	396.458	391.664	391.000
-K	380.000	383.000	386.000	388.000	388.000	390.000	393.000	395.000	396.000	396.000	392.000	392.000

COMPUTED MAGNITUDE OF PORE VELOCITY(FEET/DAY) AND ITS VECTOR ANGLE(DEGREES) AT TIME = 111.00 (DAYS) ON ITERATION 1
THE ANGLE IS MEASURED POSITIVE CLOCKWISE, STARTING FROM THE HORIZONTAL

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000
A	0.000 0.000	.208 -123.202	.051 -110.127	.047 -86.776	1.886 -74.520	1.497 -101.350	1.075 -130.394	.716 -68.333	.307 -91.536	.135 -89.988	.659 -90.001	0.000 0.000
B	0.000 0.000	.097 -101.755	.092 -125.040	.198 -136.522	.951 -142.951	.398 -24.096	1.414 -82.010	.787 -81.136	1.063 -70.119	1.026 -48.112	1.899 -158.712	0.000 0.000
C	0.000 0.000	.151 -103.617	.268 -120.535	.088 -114.601	.102 168.144	.425 -11.794	.231 -119.058	1.461 -88.976	.087 -123.009	2.157 -37.499	.718 -85.925	0.000 0.000
D	0.000 0.000	.247 -104.387	.108 -124.206	.122 -119.411	.116 -148.533	.174 -42.158	.161 -108.437	.045 -1.880	.005 114.989	.132 -16.617	1.252 -147.821	0.000 0.000
E	0.000 0.000	.101 -102.603	.096 -112.901	.022 -5.089	.106 155.243	.008 -123.343	.857 -118.631	.471 -69.878	.344 -5.670	6.971 34.137	17.285 41.539	0.000 0.000
F	0.000 0.000	.024 -114.002	.090 125.010	.110 -140.088	.131 -129.790	.808 -138.003	.059 -147.629	.222 -72.442	0.000 0.000	7.906 -95.544	18.099 -89.613	0.000 0.000
G	0.000 0.000	.070 -23.180	.002 141.085	.143 171.411	.004 112.552	.243 -171.037	.043 -163.647	.149 -112.162	.143 -94.263	0.000 0.000	3.940 97.030	0.000 0.000
H	0.000 0.000	.089 -157.132	.266 -99.001	.087 -96.336	2.124 -125.199	.169 -154.639	.208 -166.924	.261 -146.661	.037 -85.817	2.009 -14.014	.219 -96.480	0.000 0.000
J	0.000 0.000	.201 -115.195	.146 -109.213	.207 -95.073	.065 -123.443	.276 -124.330	.868 -126.780	.133 150.621	.004 84.318	.089 -123.216	4.857 -.246	0.000 0.000
K	0.000 0.000	.314 -105.105	.336 -101.611	.421 -97.794	.212 -89.203	.142 -140.438	.152 -119.891	.163 -124.994	.031 -92.165	.066 95.753	1.116 -15.995	0.000 0.000
-K	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000

COMPUTED DEPTH TO WATER(FROM GROUND SURFACE) (FEET) AT TIME = 111.00 (DAYS) ON ITERATION 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000
A	-100.000	-1.047	-1.921	7.540	6.900	8.163	1.916	-100.000	-100.000	-100.000	-100.000	-100.000
B	-100.000	.124	1.681	3.073	.193	1.740	6.065	6.248	10.855	-100.000	-100.000	-100.000
C	-100.000	5.849	1.848	5.264	.865	4.088	4.450	6.335	5.260	9.250	-100.000	-100.000
D	-100.000	-.604	-2.753	5.615	3.317	4.824	8.544	11.966	12.935	-1.484	-100.000	-100.000
E	-100.000	-1.125	-2.415	6.108	5.756	1.087	5.017	7.704	15.529	35.462	-100.000	-100.000
F	-100.000	-.317	3.104	5.537	4.985	7.538	4.830	4.775	12.950	-100.000	-100.000	-100.000
G	-100.000	-100.000	10.461	8.177	9.321	3.124	4.113	6.134	8.257	-100.000	-100.000	-100.000
H	-100.000	-100.000	-100.000	11.958	6.626	10.237	10.460	8.447	11.005	-100.000	-100.000	-100.000
J	-100.000	-100.000	-100.000	2.904	5.885	3.193	9.214	6.179	12.026	10.754	-100.000	-100.000
K	-100.000	-100.000	-100.000	-100.000	2.077	-1.017	7.023	9.884	9.767	11.642	19.336	-100.000
-K	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000

IN THE ABOVE, A VALUE OF -100. INDICATES THAT THE COMPUTATION IS NOT APPLICABLE

COMPUTED DRAWDOWN (FEET) AT TIME = 162.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	0.	-.562E+01	-.408E+01	-.342E+01	-.302E+01	-.544E+01	-.122E+01	.743E-04	.106E-03	.133E-03	.106E-03	0.
B	0.	-.598E+01	-.449E+01	-.810E+01	-.120E+02	-.638E+01	-.134E+01	-.390E+01	-.199E+01	-.754E-03	.841E-03	0.
C	0.	-.662E+01	-.908E+01	-.887E+01	-.106E+02	-.476E+01	-.535E+01	-.445E+01	-.736E+01	-.171E+01	.771E-04	0.
D	0.	-.588E+01	-.613E+01	-.535E+01	-.714E+01	-.659E+01	-.685E+01	-.437E+01	-.373E+01	-.346E+01	.208E-02	0.
E	0.	-.526E+01	-.354E+01	-.288E+01	-.528E+01	-.629E+01	-.734E+01	-.498E+01	.225E+01	.203E+02	-.621E-02	0.
F	0.	-.350E+01	-.495E+01	-.450E+01	-.502E+01	-.391E+01	-.999E+01	-.967E+01	0.	.117E-02	.146E-02	0.
G	0.	-.546E+01	-.244E+01	-.350E+01	-.281E+01	-.497E+01	-.752E+01	-.811E+01	-.843E+01	0.	.263E-03	0.
H	0.	-.541E+01	-.697E+01	-.440E+01	-.408E+01	-.346E+01	-.413E+01	-.424E+01	-.564E+01	.139E-03	.378E-04	0.
J	0.	-.551E+01	-.617E+01	-.527E+01	-.384E+01	-.340E+01	-.238E+01	-.268E+01	-.270E+01	-.691E+01	.170E-03	0.
K	0.	-.512E+01	-.625E+01	-.501E+01	-.497E+01	-.365E+01	-.227E+01	-.247E+01	-.212E+01	-.206E+01	.291E+00	0.
-K	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

COMPUTED WATER TABLE ELEVATION (FEET) AT TIME = 162.00 (DAYS) ON ITERATION NUMBER 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	334.000	334.000	334.000	334.000	337.000	340.000	342.000	344.000	344.000	344.000	344.000	344.000
A	343.000	349.910	353.077	354.512	351.019	351.442	353.216	353.000	353.000	353.000	353.000	353.000
B	348.000	357.881	360.493	366.100	370.988	366.882	363.837	363.103	361.192	359.001	361.999	362.000
C	350.000	362.219	369.280	371.872	376.439	372.659	372.951	372.651	376.355	370.709	370.200	370.200
D	361.000	369.885	373.135	375.346	378.844	377.592	377.854	375.168	375.135	373.458	375.998	376.000
E	384.000	372.259	375.543	376.881	378.279	380.294	382.740	381.262	373.446	356.723	329.286	379.300
F	365.000	373.499	374.945	377.496	380.023	382.308	387.588	387.870	381.980	382.999	382.999	383.000
G	388.000	374.457	373.442	377.499	378.812	383.974	389.523	392.189	393.328	387.000	387.000	387.000
H	366.000	375.409	378.965	379.397	382.080	385.459	390.132	394.436	395.641	390.000	389.000	389.000
J	370.000	378.507	382.172	383.266	385.844	389.394	391.384	393.862	394.696	398.912	389.600	389.600
K	375.000	383.119	387.253	389.008	389.965	391.654	393.270	395.470	396.117	396.458	390.709	391.000
-K	380.000	383.000	386.000	388.000	388.000	390.000	393.000	395.000	396.000	396.000	392.000	392.000

COMPUTED MAGNITUDE OF PURE VELOCITY(FEET/DAY) AND ITS VECTOR ANGLE(DEGREES) AT TIME = 162.00 (DAYS) ON ITERATION 1
THE ANGLE IS MEASURED POSITIVE CLOCKWISE, STARTING FROM THE HORIZONTAL

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000
A	0.000 0.000	.136 -117.244	.052 -116.868	.047 -96.269	1.916 -66.522	1.595 -104.258	.931 -120.343	.760 -72.277	.249 -94.895	.154 -89.998	.659 -90.001	0.000 0.000
B	0.000 0.000	.096 -91.002	.099 -126.264	.223 -142.153	.826 -132.093	.348 -28.203	1.750 -57.767	.811 -94.814	1.217 -61.833	.991 -48.766	1.904 -158.771	0.000 0.000
C	0.000 0.000	.160 -162.864	.297 -118.973	.091 -115.700	.103 179.211	.519 -7.669	.265 -119.086	1.482 -82.140	.101 -126.220	2.768 -26.912	.804 -117.077	0.000 0.000
D	0.000 0.000	.239 -100.471	.088 -131.341	.091 -123.032	.112 -163.958	.177 -44.596	.185 -111.414	.057 -4.984	.005 108.642	.648 -2.959	1.626 -155.791	0.000 0.000
E	0.000 0.000	.103 -156.133	.087 -112.059	.089 25.333	.122 155.257	.009 -131.708	.767 -118.899	.461 -63.633	.477 8.543	6.973 36.404	16.712 43.305	0.000 0.000
F	0.000 0.000	.026 -107.629	.067 122.838	.111 -134.870	.140 -132.125	.689 -144.502	.086 -146.156	.333 -71.524	0.000 0.000	8.401 -96.646	18.100 -89.614	0.000 0.000
G	0.000 0.000	.030 -16.968	.003 125.302	.152 108.800	.005 102.144	.273 -169.781	.049 -177.703	.109 -118.327	.173 -93.422	0.000 0.000	3.973 100.175	0.000 0.000
H	0.000 0.000	.108 -160.124	.330 -96.300	.105 -81.793	2.228 -121.794	.157 -159.705	.211 -179.498	.236 -161.322	.060 80.601	2.303 -12.188	.246 -117.817	0.000 0.000
J	0.000 0.000	.206 -117.692	.120 -112.638	.215 -91.999	.058 -121.116	.277 -124.986	.638 -125.606	.137 146.733	.003 91.007	.095 -120.989	5.225 -.229	0.000 0.000
K	0.000 0.000	.309 -107.363	.336 -101.615	.416 -98.948	.244 -88.253	.131 -132.741	.136 -117.614	.169 -127.766	.025 -88.662	.081 92.215	1.282 -6.907	0.000 0.000
-K	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000

COMPUTED DEPTH TO WATER(FROM GROUND SURFACE) (FEET) AT TIME = 162.00 (DAYS) ON ITERATION 1

	-1	1	2	3	4	5	6	7	8	9	10	-10
-A	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000
A	-100.000	-2.256	-2.897	5.595	6.041	7.258	1.784	-100.000	-100.000	-100.000	-100.000	-100.000
B	-100.000	-1.181	.577	1.900	-.606	.258	5.733	7.657	10.808	-100.000	-100.000	-100.000
C	-100.000	4.121	-.040	3.228	-1.329	2.821	3.289	5.549	3.815	9.661	-100.000	-100.000
D	-100.000	-1.865	-4.135	+.474	1.976	3.358	6.876	10.832	12.055	-.958	-100.000	-100.000
E	-100.000	-2.259	-3.543	5.309	4.721	-.294	3.720	6.898	16.902	36.957	-100.000	-100.000
F	-100.000	-1.499	2.055	4.704	3.977	6.992	2.512	2.530	12.950	-100.000	-100.000	-100.000
G	-100.000	-100.000	9.938	7.501	8.796	2.126	2.337	4.191	6.272	-100.000	-100.000	-100.000
H	-100.000	-100.000	-100.000	10.603	5.798	9.541	9.668	7.552	10.189	-100.000	-100.000	-100.000
J	-100.000	-100.000	-100.000	1.734	5.206	2.602	8.706	5.718	11.384	10.048	-100.000	-100.000
K	-100.000	-100.000	-100.000	-100.000	1.035	-1.634	6.730	9.530	9.533	11.642	20.291	-100.000
-K	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000	-100.000

IN THE ABOVE, A VALUE OF -100. INDICATES THAT THE COMPUTATION IS NOT APPLICABLE

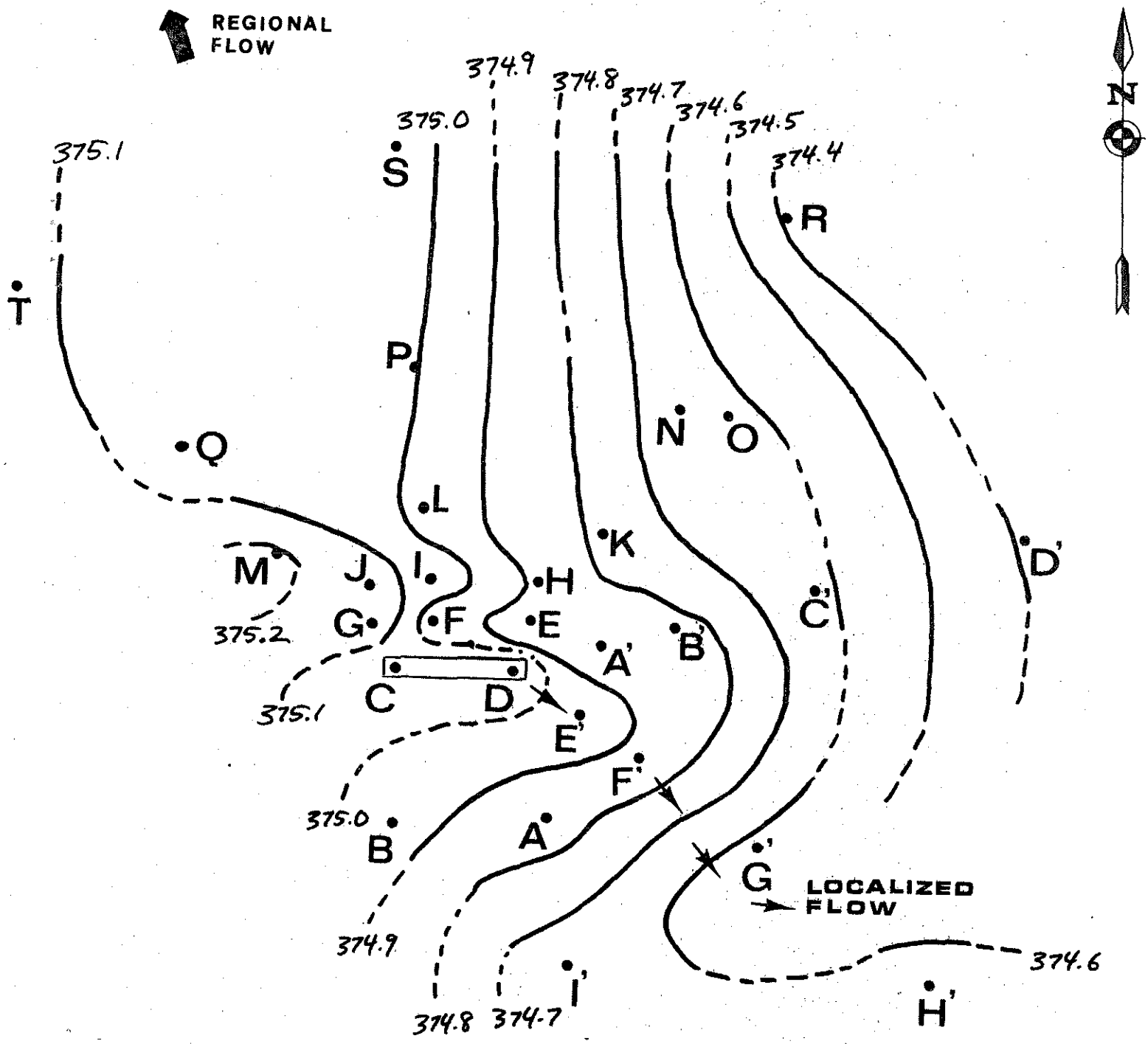
SUM OF SQUARED ERROR USING THE INITIAL GUESS

PHI = .24764E+04

K = 1
LAMBDA = .10000E+00
LAMBDA*NU = .10000E+01
GAMMA = .89327E+02
PHI(LAMBDA) = .27064E+04
PHI(LAMBDA*NU) = .26515E+04

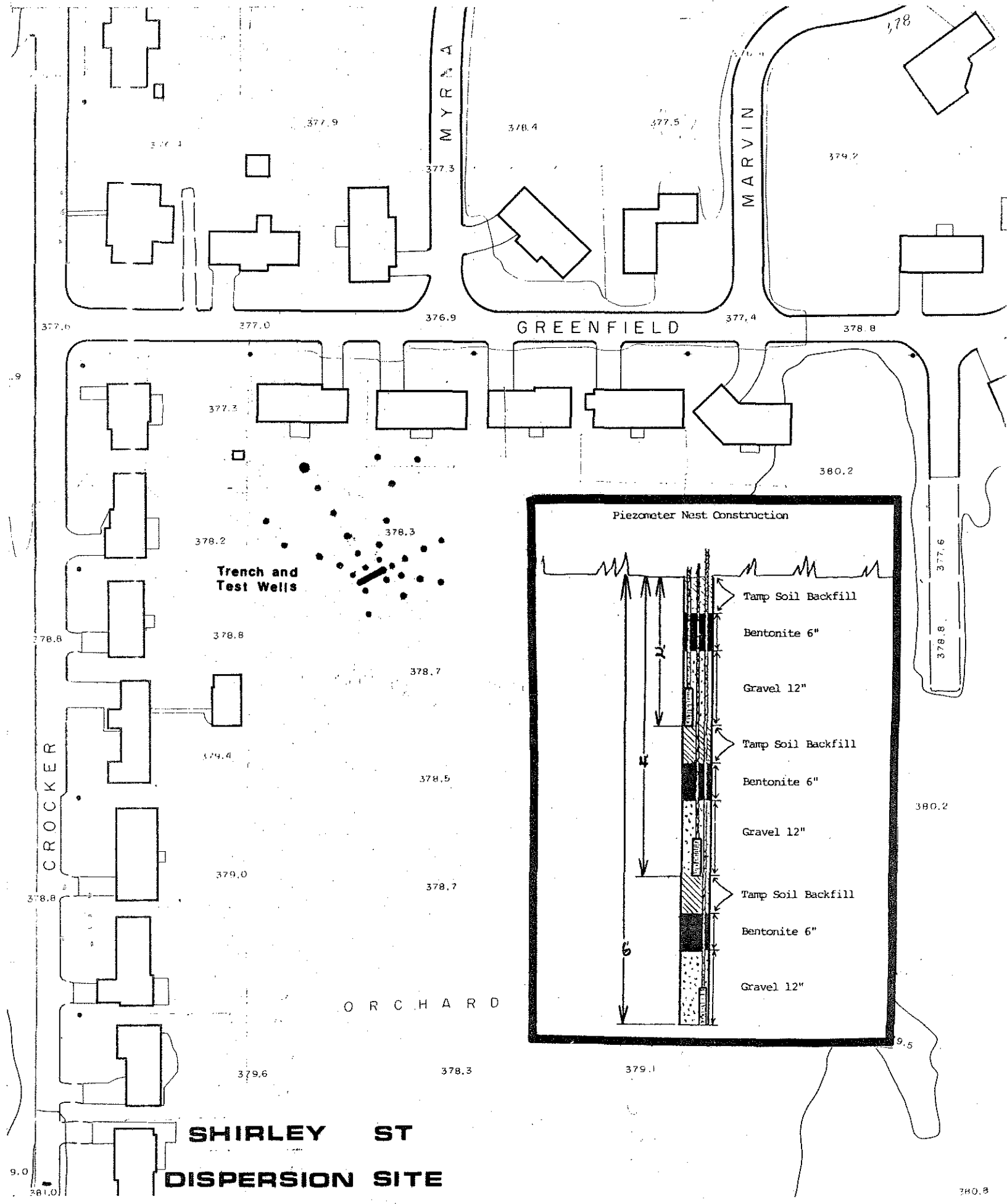
J	DELTA	B	RATIO	
1	.18567E+02	.21767E+02	.85295E+00	K(A, 3)
2	.24100E+02	.15000E+03	.16067E+00	K(A, 4)
3	0.	.15000E+03	0.	K(A, 5)
4	-.14000E+02	.10000E+01	.13986E+02	K(B, 1)
5	.44517E+01	.19452E+02	.22885E+00	K(B, 5)
6	0.	.15000E+03	0.	K(B, 6)
7	0.	.15000E+03	0.	K(B, 7)
8	0.	.15000E+03	0.	K(B, 8)
9	.65051E+02	.80051E+02	.81201E+00	K(C, 2)
10	.91125E+02	.10612E+03	.85905E+00	K(C, 3)

11	-.30341E+01	.12397E+03	.24475E-01	K(C, 7)
12	.32676E+02	.35876E+02	.91078E+00	K(C, 8)
13	-.12000E+03	.10000E+01	.12937E+03	K(C, 9)
14	-.14000E+02	.10000E+01	.13986E+02	K(D, 3)
15	-.14000E+02	.10000E+01	.13986E+02	K(D, 5)
16	-.56214E+01	.15731E+02	.35731E+00	K(D, 7)
17	0.	.10000E+01	0.	K(C, 3)
18	0.	.15000E+03	0.	K(D, 9)
19	0.	.15000E+03	0.	K(E, 3)
20	.84582E+02	.99582E+02	.84936E+00	K(E, 7)
21	-.14000E+02	.10000E+01	.13986E+02	K(E, 8)
22	.23000E+02	.15000E+03	.15333E+00	K(E, 9)
23	.23000E+02	.15000E+03	.15333E+00	K(F, 5)
24	-.22000E+01	.10000E+01	.21978E+01	K(F, 6)
25	-.14000E+02	.10000E+01	.13986E+02	K(F, 7)
26	.13500E+03	.15000E+03	.89999E+00	K(G, 1)
27	.99247E+01	.10925E+02	.90838E+00	K(G, 2)
28	0.	.10000E+01	0.	K(G, 4)
29	.13857E+02	.28857E+02	.48019E+00	K(G, 5)
30	-.22000E+01	.10000E+01	.21978E+01	K(G, 6)
31	0.	.15000E+03	0.	K(H, 4)
32	-.14000E+02	.10000E+01	.13986E+02	K(H, 8)
33	0.	.15000E+03	0.	K(J, 6)
34	0.	.10000E+01	0.	K(J, 8)
35	.21728E+01	.31728E+01	.68461E+00	K(J, 9)
36	-.17360E+01	.10000E+01	.17363E+01	K(K, 8)
37	-.82762E+00	.13424E+01	.61607E+00	K(K, 9)
38	0.	.30000E+00	0.	S(A, 2)
39	0.	.30000E+00	0.	S(A, 5)



WATER TABLE CONTOURS 5/4/79 (in ft.)

SHIRLEY ROAD SITE


MYRNA
MARVIN
GREENFIELD
CROCKER
ORCHARD
SHIRLEY ST
Trench and Test Wells
Piezometer Nest Construction
Tamp Soil Backfill
Bentonite 6"
Gravel 12"
Tamp Soil Backfill
Bentonite 6"
Gravel 12"
Tamp Soil Backfill
Bentonite 6"
Gravel 12"
DISPERSION SITE