

# Effects of chlorination on fish considered

by MICHAEL P. JONES  
Post Correspondent

Questions surrounding the impact of chlorinated water on fish are being raised by environmentalists in the wake of the opening of Mt. Hood's new sewage treatment facility.

The Hoodland Service District's treatment plant, located on Bright Avenue in Welches, went "on-line" in February and began serving an estimated 400 households, restaurants and other businesses.

Waste from the \$5,496,000 plant is treated through chlorination and then discharged into the Sandy River during the high-flow months from October 1 through May 31.

From June 1 through September 30, effluents are sprayed on the golf course at Bowman's resort and the Rippling River develop-

ment. Concerns are now being raised pertaining to the impact, if any, the chlorinated water will have upon the area's fisheries. Such concerns are not new and were raised as early as the mid-1970s when studies on the sewer were being made by Clackamas County officials.

## Nutritional program an aid to children

The Clackamas County Public Health Division has openings for women, infants and children as part of its Women, Infants and Children (WIC) nutritional program.

Eligible women are those who are pregnant or breast feeding, and infants with health problems related to nutrition.

**MIGRATION IMPACT**  
At that time the Department of Fish and Wildlife recommended that the effluent from the plant be discharged into the Sandy rather than the Salmon River.

The department identified the Salmon River as a major producer of resi-

dent and anadromous fish in the Sandy River system. They were concerned with the "possible avoidance of the Salmon River by resident and anadromous salmonids if treatment plant effluent with or without chlorine is discharged without adequate dilution."

William E. Pitney, the chief of the department's environmental management section, expressed such concerns in a letter to engineers studying the treatment facility for the area.

Pitney said that adult salmon and steelhead returning to spawn in areas in the upper reaches of the Salmon River would have to pass through the Welches area during their upstream migration from

November through March, while "juveniles could be drifting or migrating downstream throughout most of the year."

The department had concerns about the treatment facility's outflow if it was to empty into the Salmon River. It was feared the importance of the stream, as it pertains to the fisheries in not only the Sandy River system but also in the lower Columbia River, would be greatly reduced.

Through both research and practical experience, the department said that trout and salmon will avoid areas with chlorine even "at very low concentrations."

It has been reported by the department's biologists that trout have avoided chlorinated water with as

little as .001 parts per million. At Columbia River dams they report that salmon have even avoided passage over fish ladders because traces of chlorine were present in the water.

Gerald M. Bell, a fisheries biologist who works as aquatic toxicologist with DEQ's laboratories and applied research office, echoed similar concerns.

Bell said that fish, particularly anadromous fish such as salmon and steelhead, can detect the presence of even small traces of chlorine in the water "due to the irritation to their gills."

Once the fish detects chlorine, Bell said that they will not move upstream, thus migration and spawning are disrupted.

In an October 1977 study for the county by Stevens, Thompson and Runyan Inc. of Portland, potential adverse impacts of the new treatment plant on fisheries was denied.

"Chlorine is commonly used to disinfect sewage effluent, killing pathogenic bacteria and viruses," said the report. "It has long been known to be toxic to aquatic life in heavy concentrations, and detrimental to salmonids in rather low concentrations."

"Fishlife in the Sandy River is not expected to be significantly impacted initially because of the introduction of chlorinated effluents during high stream flow discharge," continued the report. "Low stream flow discharge of treated effluents has been prohibited by the discharge standards, thus avoiding possible adverse impacts."

**ECOLOGICAL DESERT**  
Bell said that if fish are exposed to chlorinated water for a long period of time they will lose the ability to swim and will lie on the bottom. Within 24 hours they will die.

In the 1976 U.S. Environmental Protection Agency manual on quality criteria for water, field studies on the relationship between fish and chlorine showed that if the concentration was not kept minimal, then the discharge of these treated effluents could be toxic to fish.

Bell said chlorination problems can be identified by an absence of mayflies and stoneflies in a river. These are important sources of food for fish.

While the mixing process is taking place, said Bell, problems are being created. Bell said small fish stay near the edge of streams to escape predation. However, while the discharged chlorinated effluent flows downstream, these small fish will head toward the middle to escape the treated water until it is properly diluted.

It, said Bell, is a higher predation rate, which directly effects the

chlorination can mean the loss of more than these aquatic insects.

In an area 300 to 400 feet downstream of this stream's outflow pipe a biological study showed that there is an absence of not only food but fish. He referred to this zone as "an ecological desert."

Yet, even when the concentration of chlorine is low, there are still adverse impacts on the stream's fisheries.

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Please turn to Page 5.

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## Public Notices

**NOTICE OF ELECTION**  
NOTICE IS HEREBY GIVEN that an election to be held on Tuesday, August 10, 1982, between the hours of 8:00 a.m. and 8:00 p.m., there will be submitted to the qualified voters of the following districts the following questions:

**SPECIAL OPERATING LEVY OUTSIDE THE TAX BASE**  
QUESTION: Shall Sandy Union High School levy \$2,705,474 outside the tax base for operating expenses during the school year 1982-83?

**PURPOSE:** The district does not have a tax base which provides for the educational programs required by State Statute and adopted by the school board. Therefore, voter approval of an operating levy is presented to the district voters each year. The total dollars will fund a reduction in programs and services, including teachers, materials, supplies, and maintenance. No new programs or services have been added.

If this measure is approved, \$2,382,946 of the taxes levied in the 1982-83 fiscal year will be financed partially by the State of Oregon, which includes the \$313,853 current tax base. \$636,381 will be totally financed by local taxpayers without any partial state payment.

**WELCHES ELEMENTARY NO. 13 OPERATIONS LEVY**  
QUESTION: Shall Welches Elementary School District levy \$106,782 in excess of the statutory limitation for an operating levy for 1982-1983?

**PURPOSE:** These funds are to provide for the continuation of existing programs for the Welches School District. The district's tax base does not provide sufficient funds to support the district's programs.

If the measure is approved, \$72,012 of the taxes levied in the 1982-1983 fiscal year are eligible for partial state funding. However, \$34,770 of the taxes will be totally financed by local taxpayers without any partial state payment. The combined levies would cost approximately \$74 per \$1,000 evaluation before applicable tax relief. We anticipate the total tax rate for next year to be approximately \$30 less than the current year.

George D. Pappen  
County Clerk  
P782-11  
7-15

**IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR THE COUNTY OF CLACKAMAS**

**Probate Department** P782-13

Estate of: **NORMA LAUZON FLEISCHMAN**  
Deceased  
No. P82-5-18

**Notice to Interested Persons**

Probate proceedings in the estate of Norma Lauzon Fleischman, deceased, are now pending in the above entitled court, wherein Gladys G. Slack, the undersigned, has been appointed and has qualified as the personal representative of said estate. All persons having claims against said estate hereby are required to present them, in due form, within four months after the date of the first publication of this notice, as stated below, to the undersigned at the following address now designated as the place for the presentation of claims, to-wit: Jeffrey A. Crook, Attorney at Law, P.O. Box 118, Sandy, OR 97055.

All persons whose rights may be affected by the said probate proceedings may obtain additional information from the records of the court, the undersigned personal representative or the latter's attorney(s) who (are):  
Jeffrey A. Crook  
Attorney  
P.O. Box 118  
Sandy, OR 97055

Gladys G. Slack  
Personal Representative  
47707 SE Wagoneer Loop  
Sandy, OR 97055

Dated and first published:  
June 24, 1982

P682-10  
6-24  
7-1

**REQUEST FOR BIDS**

Sandy Union High School District No. 2 invites bids for the following: BAKERY, MILK AND DAIRY PRODUCTS, CUSTODIAL SUPPLIES, AND LIGHTBULBS.

Detailed specifications are available from the Contracting Officer. Bids must be sealed and submitted in writing to the Contracting Officer at the District Administration Office by the time of the public opening, which is 4:00 p.m., Monday, July 26, 1982. This agency intends to award contracts to the low bidder who complies with bid requirements and specifications.

This agency reserves the right to reject any and all bids.  
CONTRACTING OFFICER  
Joan E. Hay, Business Manager

Sandy Union High School District No. 2  
17100 Bluff Road  
Sandy, Oregon 97055  
668-8011, ext. 201

**ADVERTISEMENT FOR BIDS**

Sealed proposals for the rehabilitation of various streets in the City of Sandy, Oregon addressed to the City Manager, P.O. Box 116, Sandy, Oregon 97055 will be received until 10:00 a.m. on the 2nd of August, 1982, in the Council Chambers, City of Sandy, 39250 Pioneer Boulevard, Sandy, Oregon at which time all bids will be opened and publicly read aloud.

The project consists of a) removing and replacing approximately 1100 square yards of asphalt pavement; chip sealing approximately 4200 lineal feet; together with construction of approximately 1000 lineal feet of asphalt penetration macadam.

Plans and specifications may be examined and obtained from the office of the City Engineer at Sandy City Hall, 39250 Pioneer Boulevard, Sandy, Oregon, telephone number (503) 668-5533. A copy of the documents may be obtained at the City Hall in Sandy upon a payment of \$25.00 for each set. The full amount of deposit will be refunded if each set of documents is returned in good condition within 10 days after bid opening.

Bidders who are in doubt as to their qualifications are encouraged to contact the City Engineer informally to determine if a prequalification request is necessary. Prequalification requests must be submitted by no later than 5:00 P.D.T. on the 26th day of July.

Each proposal must be submitted on the prescribed form and accompanied by a certified check or bid bond payable to the City of Sandy, Oregon, in an amount of not less than ten (10) percent of the total amount of the proposal submitted.

The successful Bidder will be required to furnish a bond for faithful performance on the contract in the full amount of the Contract price.

The owner reserves the right to reject any or all bids or to waive any informalities in bidding. No Bidder may withdraw his bid for a period of forty-five (45) calendar days after the date set for opening thereof.

Roger Jordan  
City Manager  
P682-12  
7-15  
7-22

## Campaign funds go to ECHO, Sandy Center

Carolyn Smith, a Rhododendron Democrat who ran unsuccessfully for a seat in House District 23, has kept her campaign promise of donating unspent campaign funds to the needy.

Smith recently donated \$50 to the Estacada ECHO Center and \$50 to the Sandy Community Action Center.

A former small business owner in Estacada, this past spring Smith served as an interim member of the ECHO Center's Board of Directors until the vacancy could be filled.

# RIEGELMANN'S

## 17th Anniversary SALE

Our 17th anniversary sale continues and you'll find extra savings on all of our famous brand appliances, television and video recorders plus our full selection of LA-Z-BOY recliner chairs. Stop by today for all of these low anniversary sale prices and our convenient credit terms.

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\* Dishwasher models KDC20A built-in, KDR-68 and KDD-68 portables



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