

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
DANIEL J. EVANS JOHN A. BIGGS
GOVERNOR DIRECTOR

M E M O R A N D U M

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December 13, 1971

MEMO TO: STEW MESSMAN
FROM: BOB BISHOP
SUBJECT: Newaukum Creek Surveys

On June 12, 1970, and August 24, 1970, surveys were conducted by Mike Palke to provide water quality data for Newaukum Creek near Enumclaw, which would define certain effects of spray manure fertilization in pastures and waste excretion from dairy and beef cattle feeding in the pastures bordering the Creek. Sampling was done during rainy weather in June and low flow and low rainfall conditions in latter August. Further data was defined in a survey conducted on July 14, 1971.

On July 14, 1971, nine stations were sampled for DO, nutrient, temperature, and total and fecal coliform bacteria determination, Figure 1. During June and early July, 1971, the weather was very rainy; on July 14, it was overcast with no rain.

There were no well-defined control stations in the survey; all stations were influenced by pasture runoff. Station 3, which was about 400 yards from a wooded area, was exposed to some pasture runoff, and was the best control. Station 4 was similar to number 3. The flow was low at Stations 3 and 4. If the survey is repeated, personnel should walk the stream beyond pasture influence to sample a well-defined control station. For July 14, 1971, the DO was above 10.0 mg/l. at four stations and was lowest, 4.9 mg/l. at Station 1. Temperature increased as station sampling progressed from upstream to downstream, Table 1.

Table 1. DO and temperature at stations on Newaukum Creek, July 14, 1971

<u>Station</u>	<u>DO</u>	<u>Temperature</u>
1	4.9 mg/l	10.6° C
2		10.6
3	10.4	10.8
4		10.6
5	10.6	11.4
6		11.6
7	10.9	11.4
8	10.4	12.1
9		12.2

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On survey dates August 24, 1970 and July 14, 1971, total coliform counts per 100 ml. were quite high. Fecal coliform tests were conducted for the 1971 Survey. At Stations 1 and 8, fecal counts were 600 colonies; the counts for Stations 5 and 9 were greater than 600 colonies. At the date of sampling the fecal coliform levels in certain sections of the Creek indicated a possible health hazard for human water contact, such as swimming or wading, Table 2.

Table 2. Total coliform counts for August 24, 1970 and July 14, 1971. Fecal coliform counts for July 14, 1971.

Stations	Total Coliform Colonies Per 100 ml. Sample		Fecal Coliform Colonies Per 100 ml. of Sample
	8-24-70	7-14-71	7-14-71
1	3800	5000	600
2	5800	+16,000	200
3	3300	500	50
4	940	2500	230
5	4400	4000	+600
6	3000	2000	300
7	1900	1800	400
8	*	2000	600
9	3200	4000	+600

* Station 8 of the 1970 Survey was the same location as No. 9 for the 1971 Survey and will be referred to as No. 9

+ means greater than

Nutrient nitrogen and phosphorous concentrations for Newaukum Creek surveys were determined, Tables 3, 4, and 5.

Table 3. Nitrate and nitrite nitrogen concentrations for June 12 and August 24, 1970, and July 14, 1971

Stations	NO ₃ - N (filtered) mg/l.			NO ₂ - N (filtered) mg/l.
	6-12-70	8-24-70	7-14-71	7-14-71*
1		2.03	2.58	.12
2		.69	1.59	.12
3	.58	.37	.92	.00
4	.78	.44	.84	.00
5		.61	1.01	.02
6	1.26	.44	1.26	.04
7	1.26	.75	1.14	.02
8		-	1.21	.02
9		1.63	1.21	.06

* 8-24-70 data not reported, errors.

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Nitrate as nitrogen was greater in concentration on July 14, 1971 and June 12, 1970 than on August 24, 1970, except at Station 9.

Table 4. Nutrient phosphorous concentrations for June 12, 1970, August 24, 1970, and July 14, 1971.

Station	6-12-70	Total PO ₄ - P mg/l.		ortho - PO ₄ mg/l.		
		(unfiltered) 8-24-70	7-14-71	(filtered) 7-14-71	(unfilt.) 7-14-71	(filt.) 7-14-71
1		.018	.03	.03	.02	.03
2		.036	.03	.03	.02	.02
3	.12	.037	.04	.01	.02	.01
4	.15	.016	.03	.02	.03	.02
5		.028	.04	.02	.02	.02
6	.08	.028	.02	.02	.02	.02
7	.08	.039	.04	.02	.02	.02
8		-	.04	.03	.03	.02
9		.019	.04	.03	.03	.02

Table 5. Organic Kjeldahl-N and NH₃ - N concentrations for August 24, 1970 and July 14, 1971

Station	Kjeldahl - N (unfilt.) mg/l		NH ₃ -N (unfilt.) mg/l.	
	8-24-70	7-14-71	8-24-70	7-14-71
1	.00	.16	.00	.02
2	.00	.20	.017	.00
3	.00	.00	.00	.08
4	.00	.00	.00	.10
5	.00	.16	.00	.00
6	.00	.10	.00	.00
7	.00	.10	.08	.00
8	-	.11	-	.00
9		.18	.17	.00

On March 20, 1971, March 24, 1970 and April 21, 1971, I investigated complaints about problems of manure wastes in the Enumclaw countryside. Complaint forms are enclosed. Odor problems were the primary complaint of the rural Enumclaw residents concerned with spray fertilizing.

At Station 7, at 1030 hours on July 14, 1971, a farmer was spraying fertilizer about 100 yards from the Creek; foul odor was noted. Slime, similar to Sphaerotilus was noticed at St. 9; there was very little slime of this nature at the other stations on July 14, 1971.

More than just Newaukum Creek alone is involved; there are several roadside ditches with manure flowing in during heavy rain; manure dries in hot weather

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causing foul odor. It may be that certain sanitation laws, such as those of the County, are being violated. Ground water problems may occur.

I enclosed three pamphlets on manure waste disposal; these may have some useful material applicable to the farm waste problems in the Enumclaw countryside.

BB:mh
60/1,2,3,4,5,6

Enclosure

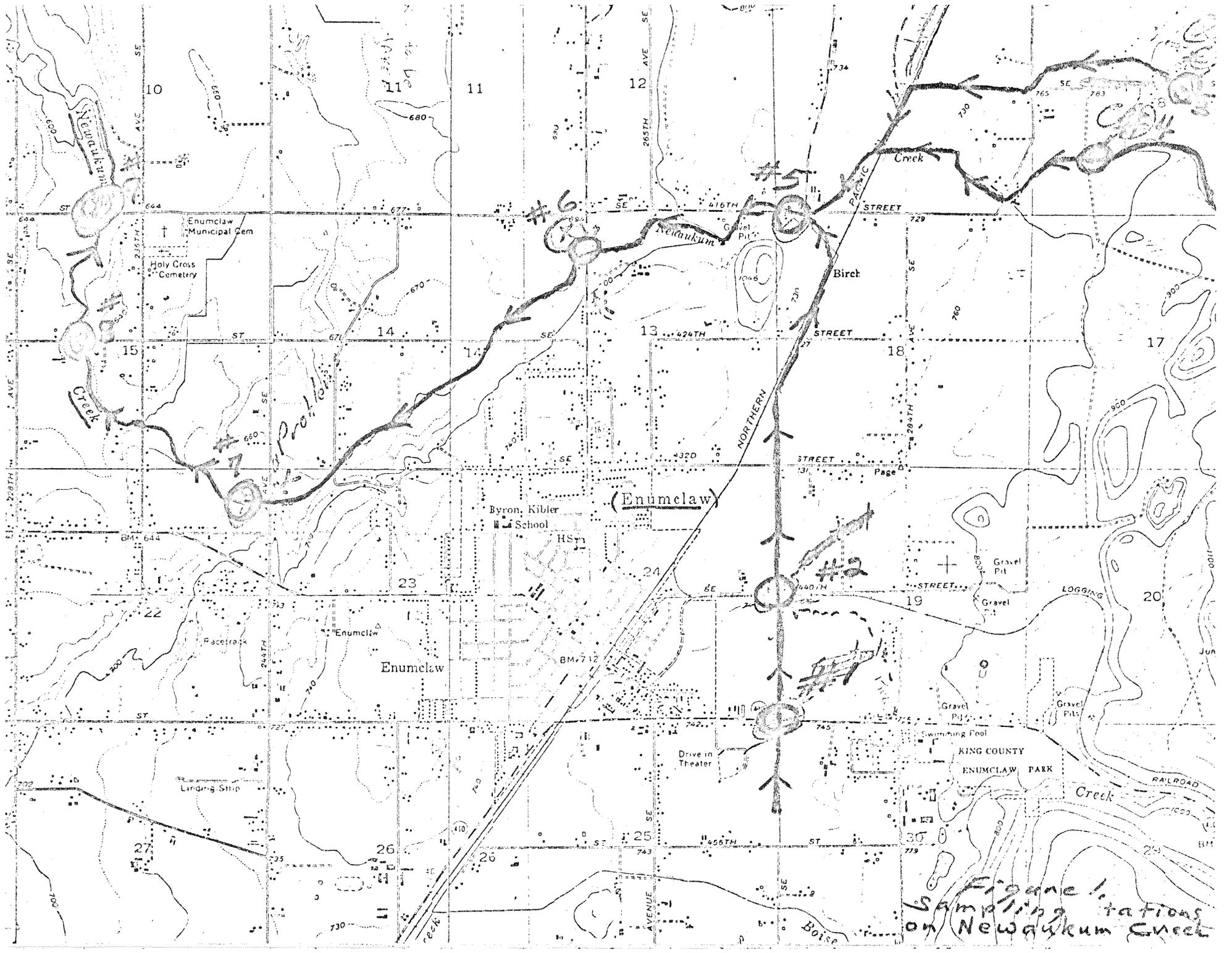


Figure 1.
Sampling stations
on Newaukum Creek



POLLUTION COMPLAINT REPORT FORM

File No.

Date April 21, 1971

Investigator Bob Bishop

I. Complaint Reported By:

- 1. Name Mr Jack Hooper Phone No. Vi 7-2537
- 2. Address North of 205th St., on 28 Ave East - Rt. 1301 2271
- 3. Date and time complaint first noted 4-20-71
- 4. Other information

II. Location:

- 1. Stream or watercourse run off ditch through Heutsma Dairy
- 2. Town Spencer County Pierce pasture
- 3. Landmark building, railroad trestle and adjacent
auction hills & farm land.

III. Pollutant:

- 1. Pollutant material manure
- 2. Area or miles affected 1/2 mile of ditch flow
- 3. Describe effects (color, slick, etc.) (If dead or dying fish are visible, fill out Nos. VII and VIII)
water not moving, some manure in it - field pasture
dry after spraying - very little manure got into the ditch.

IV. Responsibility: well contamination not certain, not certain

- 1. Person or entity: Name whether there is a serious problem or not - has been
Address (no pollution responsibility) Phone No. problem in
firmly fixed past winter
- 2. If responsible party is ship's crew obtain: Name of ship

Ship's Captain No A.
 Owner Address

V. Miscellaneous:

- 1. Were pictures taken no
- 2. Were samples taken no Where
- 3. Individuals notified ---
- 4. Witnesses: Name ---
Address ---
- 5. Attachments ---

VI. Complaint Received By:

- 1. Name Merley McCall
- 2. Time and Date 4-21-71 14.00 hrs.

VII. Fish Kill:

1. Estimated number of dead fish..... N.A.
2. Estimated percent scrapfish.....
3. Estimated percent food and game fish.....
4. Predominant species and size.....

VIII. Suspected Agent or Reason for Kill:

1. Agent..... N.A.
2. Describe effects.....

Action taken.....

→ Man hours for investigation..... 5 hrs.

IX. What other Agencies have been notified:..... Pierce County Health Dept.
will be notified

X. What could have prevented this complaint:..... was a legitimate complaint

On 4-21-70, Mr. Jack Hooper submitted a complaint regarding the possibility of his well becoming contaminated from manure being sprayed onto pastures by Houtsma Dairy owner, Al Houtsma.

I went to Mr. Hooper's residence, but he was not home. At 1:30 hours, I met Mr. Houtsma. He stated that spraying was being done on Mr. Cooper's pasture which is south of his. Runoff from pastures and local area flows into a drainage ditch which flows through Houtsma's pasture, at the base of Cooper's pasture and on to a forest area by Hooper's property, where the water goes underground in a gravelly area. He said that in late May and over the summer, the ditch is dried up. There was manure in the ditch, but flow was nil. Along 20th St. it was noted that septic tank drainage enters roadside ditches which flow to the pasture ditch.

The Pierce County Health Dept. should handle this problem.

POLLUTION COMPLAINT REPORT FORM

File No.

Date 3-24-70

Investigator Bob Bishop

I. Complaint Reported By:

- 1. Name Ray Spungin Phone No. TA 5-2620
- 2. Address Rt. 1 Box 325 Enumclaw
- 3. Date and time complaint first noted 3-70
- 4. Other information turn west off Black-Diamond-Enumclaw Rd. to S.E. 400th. go 1 mile Red House 400 ft. off Rd. near 244th St.

II. Location:

- 1. Stream or watercourse tributary to Newaukum Creek
- 2. Town Enumclaw County King
- 3. Landmark S.E. 400th & 244th St.

III. Pollutant:

- 1. Pollutant material manure
- 2. Area or miles affected not known
- 3. Describe effects (color, slick, etc.) (If dead or dying fish are visible, fill out Nos. VII and VIII) odor problem

IV. Responsibility:

not determined;

- 1. Person or entity: Name not known Address Phone No.

2. If responsible party is ship's crew obtain: Name of ship

Ship's Captain NA
 Owner Address
 Agent Address

V. Miscellaneous:

- 1. Were pictures taken no
- 2. Were samples taken no Where
- 3. Individuals notified not Puget Sound Air Pollution Comm. phone 284-2050 (Rick Kester)
- 4. Witnesses: Name Address
- 5. Attachments

VI. Complaint Received By:

- 1. Name John Hodason
- 2. Time and Date 3-24-70

VII. Fish Kill:

1. Estimated number of dead fish.....
2. Estimated percent scarpfish.....
3. Estimated percent food and game fish.....
4. Predominant species and size.....

N.A.

VIII. Suspected Agent or Reason for Kill:

1. Agent.....
 2. Describe effects.....
- Action taken.....
- Man hours for investigation.....

N.A.

IX. What other Agencies have been notified:.....

X. What could have prevented this complaint:.....

Mr. Ray Spungin stated that manure spraying by a farmer across the road from his farm has been creating a problem.

On hot days the odor is nauseating. During periods of high flow manure could reach Newaukum creek. To this date

At 4-14-70 Newaukum creek looked clean at various vantage points; there was no sphaerotilus etc. It would be worthwhile to survey the drainage area for problem sources.

POLLUTION COMPLAINT REPORT FORM

File No. _____

Date 3-20-70

Investigator Bob Bishop

I. Complaint Reported By:

- 1. Name Mrs. Anderson Phone No. TA 5-4379
- 2. Address Rt. #1 Box 236
- 3. Date and time complaint first noted Jan. '70
- 4. Other information Mr. Watkins - Dept. of Fisheries - referred call to WPC

II. Location:

- 1. Stream or watercourse roadside ditches & Newaukum Cr.
- 2. Town Enumclaw County King
- 3. Landmark S.E. 424th St. & 228th Ave. S.E.

III. Pollutant:

- 1. Pollutant material manure
- 2. Area or miles affected waste entering Newaukum Cr. from ditches
- 3. Describe effects (color, slick, etc.) (If dead or dying fish are visible, fill out Nos. VII and VIII)
odor strong

Mrs. Anderson stated that the dairy farms of Mr. Wetzel & Mr. Bill Josie are the problem source

IV. Responsibility: (not documented)

- 1. Person or entity: Name _____
Address 228th & 424th Enumclaw Phone No. _____
- ~~2. If responsible party is ship's crew obtain: Name of ship _____~~

Ship's Captain _____
 Owner NA Address _____
 Agent _____ Address _____

V. Miscellaneous:

- 1. Were pictures taken no
- 2. Were samples taken no Where Seattle
- 3. Individuals notified Fuget Sound Air Pollution Comm. phone 284-2050
- 4. Witnesses: Name _____
Address _____
- 5. Attachments _____

VI. Complaint Received By:

- 1. Name John Hodgson
- 2. Time and Date 3-20-70

VII. Fish Kill:

1. Estimated number of dead fish.....
2. Estimated percent scrapfish.....
3. Estimated percent food and game fish.....
4. Predominant species and size.....

VIII. Suspected Agent or Reason for Kill:

1. Agent..... *NA*
 2. Describe effects
- Action taken.....
- Man hours for investigation.....

IX. What other Agencies have been notified:.....

X. What could have prevented this complaint:.....

*I investigated the complaint 4-14-70.
At ~~the present~~ ^{this} time, there was a small amount
of manure along a ditch running by the
Anderson home; during rainy weather manure
would course into Newaukum Cr. Mrs. Anderson
stated that the odor on warm days was nauseating.
Rick Kester of the Puget Sound Air Pollution Comm.
was notified and talked to enforcement people
of the agency; further complaints will ^{be} investigated.
Further investigation will be resumed ~~then~~ by WPEC when
a survey of this problem is conducted to disclose
pollution sources and effect.*