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RPollution of West Creek by Duffy-Mott*

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THE ROCHESTER COMMITTEE FOR SCIENTIFIC INFORMATION  
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Water Pollution #48

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POLLUTION OF WEST CREEK BY DUFFY-MOTT

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Summary

Dissolved oxygen analyses, sludge samples, odors, coliform counts, and the appearance of the water indicate that the north fork of West Creek at Wilder Road (just north of the railroad tracks) is extensively polluted by food-processing wastes from the Duffy-Mott Company.

1. Location

The West Creek - Salmon Creek system in the northwestern part of Monroe County drains the Towns of Hamlin, Clarkson, Sweden, and Parma; this water is then discharged into the western end of Braddock's Bay. Much of the system bears a state classification of D, the lowest classification now regarded as acceptable by the State Health Department; these streams receive sewage from Brockport and food-processing wastes from Duffy-Mott at Hamlin Station. (Other sources of pollution or potential pollution may be present, but have not yet been identified.)

2. The Law

Quality standards for Class D waters are as follows:

1. Floating solids; settleable solids; sludge deposits.  
--None which are readily visible and attributable to sewage, industrial wastes or other wastes or which deleteriously increase the amount of these constituents in receiving waters after opportunity for reasonable dilution and mixture with the wastes discharged thereto.
2. pH. (acidity or alkalinity)  
--Range between 6.0 and 9.5. (Explanatory note: Most aquatic life can live somewhere in this range, so that a natural community of some plants and arthropods can be maintained, although most fish would not be able to survive at the high end of this range.)
3. Dissolved oxygen.  
--Not less than 3.0 parts per million (ppm).
4. Toxic wastes, oil, deleterious substances, colored or other wastes, or heated liquids.  
--None alone or in combination with other substances or wastes in sufficient amounts or at such temperatures as to prevent fish survival or impair the waters for agricultural purposes or any other best usage as determined for the specific waters which are assigned to this class.

Best usage of waters: Agricultural or source of industrial cooling or process water supply and any other usage except for fishing, bathing, or as source of water supply for drinking, culinary or food processing purposes.

Conditions relating to best usage: The waters will be suitable for fish survival; the waters without treatment and except for natural impurities which may be present will be satisfactory for agricultural usages or for industrial process cooling water; and with special treatment as may be needed under each particular circumstance, will be satisfactory for other industrial processes.

We note, in addition, that classes E and F, both of which are essentially open sewer classifications, include provisions to eliminate the occurrence of odor nuisances, and we presume that these provisions also apply to Class D waters.

### 3. Degradation of Streams by Food Processing Wastes

Industrial wastes do not, in general, contain significant quantities of disease-causing bacteria, and therefore do not cause the sort of immediate hazard to public health as is created by the discharge of undisinfected municipal sewage. The major impact of the discharge of food-processing waste into a stream is upon the level of dissolved oxygen in the stream. Without an adequate level of oxygen dissolved in the stream water, the normal aquatic life suffocates, and nuisance odors from anaerobic decay (decay in the absence of air, also called fermentation) develop. Food processing wastes are generally very high in biological oxygen demand (BOD), which is simply food for the naturally-occurring bacteria in the stream. The bacteria feed upon this food and multiply tremendously; and as they live they use up oxygen. If there is enough food for them, they will multiply to the point where they consume essentially all of the dissolved oxygen in the water. At this point, fish suffocate to death, and the fish food organisms also die. But many bacteria and some blue-green algae do not die; they begin to live without oxygen (by fermentation), and produce noxious chemicals such as hydrogen sulfide. Food processing wastes also often contain large quantities of suspended solids which become extensive deposits of black, foul-smelling sludge in the receiving stream.

Good-processing wastes can be cleaned up by primary settling, lagooning, and other forms of physical, chemical, and biological treatment.

The R.C.S.I.'s attention was drawn to the situation in West Creek by the staff of the "HELP" column of the Democrat and Chronicle, which had received a request for assistance from people living near the creek on Wilder Road in the Town of Hamlin.

### 4. Findings

Tests were run and observations were made on West Creek's north fork both upstream and downstream from the Duffy-Mott waste disposal dump west of Wilder Road and just north of the Pennsylvania Central's R W & O branch track. Streams in the area were running very full, due to recent rains and the melting of snow; this should improve conditions in West Creek by increasing the dilution of the waste. The following results were obtained.

16 November - Collection point 1; north fork of West Creek at Wilder Road, just downstream from the Duffy-Mott dump. A strong odor, similar to decomposing sauerkraut or fruit waste, was noted. A large deposit of grey scum was found on the creek upstream from a fence crossing the creek. Dissolved oxygen; 9 ppm.

Collection point 2; two miles downstream from the Duffy-Mott dump, north fork of West Creek at Sweden-Walker Road. No noticeable odor. Dissolved oxygen; 4 ppm.

Collection point 3; four miles downstream from the dump, West Creek at Town Line Road. Dissolved oxygen; 7 ppm. No odor.

23 November - Control collection point; north fork of West Creek at Hamlin Center Road, half a mile upstream from the Duffy-Mott dump. Water very clear, no odor. Dissolved oxygen; 10 ppm. Coliform count; 800 per 100 ml.

Collection point 1. Marked odor; stream water greyish in appearance; large quantities of black, foul-smelling sludge on the stream bottom. Dissolved oxygen; 4.2 ppm one foot below the stream surface; 3.2 ppm just above the bottom of the stream. Coliform count; 182,000 per 100 ml. (This is extremely high; we don't know where in the dump these bacteria are coming from.)

Collection point 2. Dissolved oxygen; 7 ppm. Coliform count; 3000 per 100 ml.

On 23 November observations and photographs were taken of the Duffy-Mott waste disposal area near Wilder Road; this can be readily seen from the railroad tracks immediately to the south. Large quantities of food waste were exposed, uncovered, throughout the area, which is immediately adjacent to the creek. Presumably the major source of pollution of the creek in this vicinity is run-off and leachings from this waste disposal dump. Local residents complain about the occurrence of large numbers of rats -- it is quite evident that ample food for them is readily available at the dump.

#### 5. Comment

The fruit-processing waste put out by Duffy-Mott could be made to serve as quite good quality land-fill -- a rich, soil-building organic mulch. Under present conditions it makes land-fill of very low quality -- water-polluting, rat-breeding, and fetid. The dumping operations appear to be rather badly mismanaged. This does not seem to be for lack of equipment, since a bulldozer was parked next to open dump pits. It is possible that the area is not suited for this kind of a dump (bad drainage, nearness to a stream), or that the necessary drainage, lagooning, and other earthmoving has been neglected.

#### 6. Conclusions

The north fork of West Creek is heavily polluted by Duffy-Mott in the vicinity of Wilder Road. Sludge deposits in the stream are in violation of New York State law. Even under quite favorable conditions (heavy stream flow) the dissolved oxygen levels in the stream barely meet the standards set by the extremely low classification (D) which the stream bears. Nuisance odors occur, and were reported by local inhabitants to be common. Uncovered garbage was seen in much of the waste disposal area, and is reported to support a large population of rats.