

TABLE I

CHEMISTRY SURVEY RESULTS - NOVEMBER 8, 1978

Site	Location	Time	Temp. (°C)	D.O. (mg/l)	pH	BOD ₅ (mg/l)	SS (mg/l)	NH ₃ -N (mg/l)	Flow (cfs)	FC (#/100ml)	FS (#/100m)
CS1	100' North of STH 10 & 12	10:20	4.0	11.5	7.1	2.1	4	0.02	2.52	260	170
CS2	Fairchild STH effluent	9:25	7.2	7.3	7.5	20	38	1.0	0.153	---	---
CS3	Spring Discharge	10:00	7.5	8.6	6.4	2.1	3	0.03	0.036	<10	<10
CS4	Schoolhouse Cr.-Spring Mix pt	11:45	5.5	11.3	---	2.9	3	0.03	---	650	160
CS5	*Trib. Mix pt-1000' below Hwy.	11:15	5.1	11.7	6.9	3.3	6	0.03	3.87	150	50

*Air Temp. at 13:00 was 12.0°C.

TABLE 3

Taxonomic List of Macroinvertebrates from MS1 - November 8, 1978

Taxa	n	a	nx _a
Diptera			
Empididae	1	4	4
<u>Tipula spp.</u>	2	2	4
Ephemeroptera			
<u>Baetis brunneicolor</u>	4	2	8
<u>Baetis vagans</u>	1	1	1
<u>Leptophlebia spp.</u>	5	3	15
<u>Stenonema fuscum</u>	10	1	10
Odonata			
<u>Calopteryx spp.</u>	4	1	4
Plecoptera			
<u>Isoperla spp.*</u>	18	0	0
Trichoptera			
<u>Brachycentrus americanus</u>	14	0	0
<u>Hydatophylax argus</u>	5	1	5
<u>Hydropsyche slossonae</u>	1	2	2
<u>Platycentropus spp.</u>	10	2	20
<u>Ptilostomis spp.</u>	3	2	6
<u>Pychopsyche spp.</u>	35	2	70
Gastropoda			
<u>Physa spp.</u>	2	-	-
Totals**	113	-	149
Biotic Index = $\frac{149}{113} = 1.32$			

* Not *I. nana*

** Totals include only taxa for which biotic index values are available.

TABLE 4

Taxonomic List of Macroinvertebrates from MS2 - November 8, 1978

Taxa	n	a	nx
Coleoptera			
<u>Laccornis sp (adult)</u>	1	-	-
Diptera			
<u>Parametriocnemus sp.</u>	1	3	3
<u>Pilaria sp.</u>	1	-	-
<u>Psectrotanypus sp.</u>	1	2	2
<u>Simulium decorum</u>	1	-	-
<u>Tipula spp.</u>	6	2	12
Ephemeroptera			
<u>Baetis brunneicolor</u>	4	2	8
<u>Baetis sp. A</u>	1	2	2
<u>Baetis vagans</u>	2	1	2
<u>Leptophlebia spp.</u>	7	3	21
<u>Stenonema fuscum</u>	15	1	15
Megaloptera			
<u>Sialis spp.</u>	2	2	4
Odonata			
<u>Aeshna sp.</u>	1	2	2
<u>Calopteryx spp.</u>	5	1	5
<u>Cordulegaster maculatus</u>	7	0	0
Plecoptera			
<u>Isoperla nana</u>	1	1	1
<u>Isoperla spp.</u>	13	0	0
Trichoptera			
<u>Brachycentrus americanus</u>	5	0	0
<u>Hydatophylax argus</u>	1	1	1
<u>Hydropsyche betteni</u>	12	3	36
<u>Platycentropus sp.</u>	1	2	2
<u>Ptilostomis spp.</u>	4	2	8
<u>Pychopsyche spp.</u>	6	2	12
Amphipoda			
<u>Crangonyx obliquus-richmondensis</u>	1	-	-
Totals	95		136
Biotic Index = $\frac{136}{95}$ = 1.43			



The outfall pipe from the
Fairchild WWTP (CS2)
November 8, 1978



Schoolhouse Creek at MS2
looking downstream -
November 8, 1978



Schoolhouse Creek at CS5
looking downstream. Note
tangled brush along banks.
November 8, 1978

FAIRCHILD, EAU CLAIRE COUNTY

WASTEWATER RECEIVING STREAM CLASSIFICATION

Receiving stream - Tributary stream of Schoolhouse Creek, Q7,10 at discharge site = 0.00 CFS.

Fairchild WWSP discharges via a 200 foot underground pipe to a constructed ditch. Flow in the ditch travels northeast about 600 feet to a cattail marsh 50 feet in diameter adjacent to a railroad grade. Effluent in the ditch dries up within 100 feet during dry weather flow. Flow from the marsh is north 900 feet along the tracks but is not continuous. Emergence of a spring (about 150 feet south of STH 10/12) results in continuous flow to Schoolhouse Creek. However, spring flow is minimal and iron bacteria preclude invertebrate development. Brook trout were observed in Schoolhouse Creek under STH 10/12 bridge. Classification changes occur in close downstream proximity to the stabilization pond discharge and also establish higher treatment requirements. Because of these changes, an abbreviated waste load allocation sampling investigation was conducted by water quality evaluation staff on April 18, 1977. The results indicate that the distance to the intermediate aquatic life classification change point is not adequate to convert stabilization pond effluent from effluent ditch limitations to intermediate aquatic life surface water criteria.



Second cell of Fairchild lagoons



Discharge manhole and dike of Fairchild lagoons

RECOMMENDATIONS:

The constructed ditch, from the Fairchild outfall pipe to the marsh at the railroad grade shall be classified effluent ditch. The marsh shall be classified wetland. Water along the railroad grade from the wetland to the point of spring emergence is classified noncontinuous, intermediate aquatic life. Water from the spring to Schoolhouse Creek is classified continuous, intermediate aquatic life. Schoolhouse Creek is a continuous, fish and aquatic life (Class II trout) stream. However, as previously described, effluent limits assigned to the intermediate aquatic life classification shall apply at the discharge point from the Fairchild stabilization ponds.

EVALUATION DATE: October 11, 1976; April 18, 1977

PERSONNEL:

Steve Skavroneck and Steve Jaeger - Water Quality Evaluation - Madison (4/18/77)

Terry A. Moe - Water Pollution Biologist - WCD (10/11/76, 4/18/77)

Alan Lulloff - District Engineer - WCD (10/11/76)

E. D.

