

SLIPPERY ROCK CREEK
NORTH BRANCH

TABLE 1

TREATMENT PLANT OPERATING DATA - 1971

Month	Flow (gpm)	Influent pH Range	Effluent pH Range	Stream Below Plant pH Range	Influent Iron (mg/l)	Effluent Iron (mg/l)	Influent Acidity as measured with phenolphthalein endpoint (mg/l CaCO ₃)	Effluent Alkalinity to pH 8.3 as measured with phenolphthalein endpoint (mg/l CaCO ₃)
Jan.	3322	4.1-4.4	8.0-9.2	7.2-7.9	2.6	0.0	51.3	17.1
Feb.	4350	4.1-4.5	7.3-9.8	7.1-7.6	2.7	0.0	34.2	17.1
March	6050	4.3-4.6	7.5-9.8	7.0-9.0	2.4	0.0	34.2	17.1
April	2170	4.3-4.6	7.2-8.3	7.0-7.4	2.2	0.0	40.0	17.1
May	2612	4.2-4.4	7.3-8.4	6.9-7.5	2.0	0.0	34.2	13.7
June	2060	4.0-4.1	7.1-9.5	7.0-7.2	2.0	0.0	34.2	17.1
July	500	3.9-4.1	7.5-9.0	7.2-7.4	1.5	0.0	40.0	13.7
Aug.	340	3.8-4.0	7.0-7.6	6.7-7.3	1.8	0.0	40.0	13.7
Sept.	660	3.9-4.2	7.2-9.1	7.1-7.8	1.6	0.0	45.5	17.1
Oct.	352	3.9-4.1	7.2-8.0	7.2-7.6	1.2	0.0	41.0	17.1
Nov.	3842	3.8-4.1	7.1-9.0	6.9-7.5	2.0	0.0	59.9	13.7
Dec.	3989	3.9-4.6	7.0-10.5	6.8-10.0	2.3	0.0	90.6	17.1
Avg.	2520						47.7	16.3

Monthly averages based on 3 grab samples per day

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TABLE 2

PHYSICAL & CHEMICAL ANALYSES FOR PLANT PERFORMANCE

<u>Analyses</u>	March 25, 1970		April 25, 1970	
	<u>Influent</u>	<u>Effluent</u>	<u>Influent</u>	<u>Effluent</u>
pH	4.0	8.4	3.8	9.6
Alkalinity to Methyl Orange, mg/l CaCO ₃	--	12	--	78
Acidity to Methyl Orange, mg/l CaCO ₃	12	--	--	--
Alkalinity to Phenolphthalein, mg/l CaCO ₃	--	--	--	90
Acidity to Phenolphthalein, mg/l CaCO ₃	50	--	50	--
Total Solids, mg/l	455	473	348	377
Suspended Solids, mg/l	2	10	--	--
Dissolved Solids, mg/l	453	463	250	356
Volatile Solids, mg/l	--	--	98	21
Sulfates, mg/l SO ₄	300	260	216	237
Chlorides, mg/l Cl	--	--	16	16
Iron, mg/l Fe	3.6	1.1	2.3	0.2
Dissolved Iron, mg/l Fe	--	0.16	--	--
Manganese, mg/l Mn	2.8	2.3	3.4	0.0
Aluminum, mg/l Al	--	--	16.3	4.6
Total Hardness, mg/l CaCO ₃	--	--	220	252

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TABLE 3

SLUDGE ANALYSES

<u>Analyzes</u>	<u>Clarifier Sludge</u>	<u>Thickener Sludge</u>	* 9"	<u>Sludge in Lagoon</u>		
				18"	27"	36"
pH	8.0	8.0	8.8	9.1	8.4	9.1
Total Solids, mg/l	5400	7100	16,280	19,500	11,300	29,600
Suspended Solids, mg/l	4880	6240	16,000	19,320	10,520	25,120
Dissolved Solids, mg/l	520	860	280	180	780	4,480
Iron, mg/l Fe	270	350	530	970	400	730
Manganese, gml Mn	125	160	500	1,200	400	2,000
Total Hardness, mg/l CaCO ₃	--	--	--	--	--	15,200
Calcium Hardness, mg/l CaCO ₃	--	--	--	--	--	2,500
Magnesium Hardness, mg/l CaCO ₃	--	--	--	--	--	12,700

* Inches from top surface

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TABLE 4

SLUDGE CONSISTENCY

<u>Location</u>	<u>Sludge Concentration % Total Solids **</u>
Clarifier	0.02
Thickener	0.32
Lagoon *	
0	2.60
6"	2.42
12"	2.87
18"	3.29
24"	3.40
30"	3.99
36"	6.74

* Inches from top surface

** Concentration in mg/l may be approximated
by multiplying % Total Solids by 10,000