PARACR03

LOCATION: Approximately 150 yards upstream of old railroad bridge on Rt. 191.
Latitude 41° 04' 19.60"
Longitude -75° 13' 36.40"

FIELD CHEMISTRY:

SITE ID	SAMPLE	TEMP	SpC	DO	pH	ORP	DO	COND	TDS
	DATE	C	mScm	mg/l	su	mV	% sat.	mS/cm	mg/l
PARACR03	4/4/03	6.53	141	12.40	7.13	333	101.00	91	91
PARACR03	5/2/03	14.43	145	10.21	8.30	263	100.00	116	94
PARACR03	6/11/03	13.77	119	10.29	7.23	259	99.40	93	77
PARACR03	7/9/03	19.24	132	9.36	7.61	235	101.40	118	86
PARACR03	8/12/03	18.83	120	9.47	7.78	253	101.70	106	78
PARACR03	9/10/03	15.06	140	9.15	7.71	344	90.90	114	91
PARACR03	10/29/03	10.54	84	11.53	7.74	299	103.50	61	54
PARACR03	11/22/03	7.63	95	12.19	8.06	301	102.10	63	62
PARACR03	12/13/03	3.53	86	13.04	8.44	307	98.30	51	56
PARACR03	1/24/04	0.01	123	13.31	8.81	46	91.10	64	80
PARACR03	2/21/04	3.72	140	12.50	8.91	216	94.70	83	91
PARACR03	3/27/04	7.78	157	12.43	7.74	302	104.40	105	102
wshed min.		0.01	29	5.42	5.47	46	57.70	1	19
wshed max.		26.25	548	14.37	8.99	561	113.10	388	356
wshed avg.		10.04	146	10.97	7.50	304	96.14	104	95

Temperatures that exceed Specific Water Quality Criteria in Chapter 93 of Title 25 of the PA Code are shown in red. SpC is specific conductance. DO is dissolved oxygen. ORP is oxidation reduction potential. COND is conductivity. TDS is total dissolved solids. Refer to Sampling and Analysis Plan under Phase I study results for quality assurance/ quality control information.

LABORATORY DATA:

SITE ID	SAMPLE DATE	pH	NITRATE	NITRITE	TOTAL SUPSENDED	TOTAL PHOSPHORUS	FECAL COLIFORM
		su	mg/l	mg/l	SOLIDS mg/l	mg/l	CFU/100ml
PARACR03	4/4/03	6.09	<0.1	<0.005	2.7	0.03	0
PARACR03	5/2/03	7.65	<0.1	0.005	<1.0	0.22	1
PARACR03	6/11/03	6.63	0.12	<0.005	1.4	0.06	8
PARACR03	7/9/03	7.52	0.34	0.01	2.4	0.15	3
PARACR03	8/12/03	6.81	0.38	0.02	3.5	0.17	200
PARACR03	10/29/03	6.88	0.10	<0.005	3.4	0.11	3600
PARACR03	11/22/03	6.94	1.19	0.01	<1.0	0.18	7
PARACR03	12/13/03	6.78	0.55	0.02	4.0	0.09	140
PARACR03	1/24/04	6.56	<0.1	0.02	3.8	0.06	3
PARACR03	2/21/04	6.78	0.43	0.05	2.5	0.03	3
PARACR03	3/27/04	6.91	0.39	<0.01	<1.0	<0.02	1
PARACR03	9/10/03	6.98	0.53	0.01	<1.0	0.05	2
Wshed min		5.47	0.10	0.005	1.0	0.01	0
Wshed max		8.19	1.51	0.050	13.0	0.90	5700
Wshed avg		6.85	0.50	0.019	2.7	0.11	

If the number of sample results where the analytical parameter was not detected exceeded 20% of the sample pool, they were not included in the calculated watershed average. If the number of non-detect samples was less than 20% of the sample pool, ½ of the detection limit was used to represent those samples in the calculated watershed average. Refer to Sampling and Analysis Plan under Phase I of study results for quality assurance/quality control information.

BENTHIC MACROINVERTEBRATES:

The following table compares trending results of the EPA/County scoring schemes for repeat sites (1995 through 2004).

Site #	Site Name	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
PARACR03	Paradise Creek	33	31								31
BUTZRU01	Butz Run	29	23								
CRANCR01	Cranberry Creek (Paradise)	29									
PARACR04	Paradise Creek	33	31								
DEHOCR04	Devils Hole Creek	31	31								
CRANCR03	Cranberry Creek (Paradise)	21	23								
SWIFCR06	Swiftwater Creek	21	23								
SWIFCR02	Swiftwater Creek	25	27								
FOHIRU01	Forest Hills Run	29	25								
PARACR01	Paradise Creek	29	29								
FOHIRU04	Forest Hills Run	25	19	25	29	25	27	27	23	31	
FOHIRU09	Forest Hills Run	15	17								
SWIFCR07	Swiftwater Creek	29	25	29	33						
SWIFCR05	Swiftwater Creek	33	23	25	29	27	25	29	21	25	19
SWIFCR03	Swiftwater Creek	29	29	25	29	29	17	27	19	27	23

The range 35 - 29 is considered optimal. The range 28 - 14 is the slightly to moderately impaired category, and any site with a total score of less than 14 is considered severely impaired.

HABITAT ANALYSIS

2003

PARACR03	202	Optimal	Water reaches base of both lower banks and minimal amount of channel substrate is exposed. Occurrence of riffles frequent. Banks stable; no evidence of erosion or bank failure.

2004

PARACR03	204	Optimal	Greater than 50% mix of boulder, cobble, or other stable habitat. All four velocity/depth regimes present.

MACROINVERTEBRATE IDENTIFICATIONS

MONROE COUNTY WATER QUALITY STUDY 2003 SITE ID: PARACR03

Insecta		Philopotamidae	18	Simuliidae	5
Ephemeroptera		Polycentropodidae	7	Tabanidae	
Baetidae	14	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	3	Poduridae	
Ephemerellidae	3	Lepidostomatidae		Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae		Leptoceridae		Nematomorpha	
Leptophlebiidae	2	Limnephilidae		Annelida	
Metretopodidae		Molannidae		Hirudinea	
Neoephemeridae		Odontoceridae	1	Oligochaeta	
Oligoneuriidae	3	Phryganeidae		Lumbriculida	
Polymitarcyidae		Sericostomatidae		Lumbriculidae	5
Potamanthidae		Uenoidae		Tubificida	
Siphlonuridae		Glossosomatidae	7	Platyhelminthes	
Tricorythidae	2	Hydroptilidae		Turbellaria	
Odonata		Rhyacophilidae		Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae		Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae	3	Dytiscidae		Sphaeriidae	23
Libellulidae		Gyrinidae		Cyrenidae	
Macromiidae		Haliplidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	10	Ancylidae	
Lestidae		Hydraenidae		Physidae	
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae	1	Psephenidae	13	Limnaeidae	
Leuctridae	2	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae	1	Corydalidae	3	Gammaridae	
Perlidae	3	Sialidae		Talitridae	
Perlodidae	2	Neuroptera		Isopoda	
Pteronarcyidae		Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydridae		Cambaridae	
Belostomatidae		Athericidae		Arachnidia	
Corixidae		Tipulidae		Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			

Notonectidae		Ceratopogonidae			
Saldidae		Chaoboridae			
Veliidae		Chironomidae	54		
Trichoptera		Culicidae			
Hydropsychidae	14	Muscidae			

2004

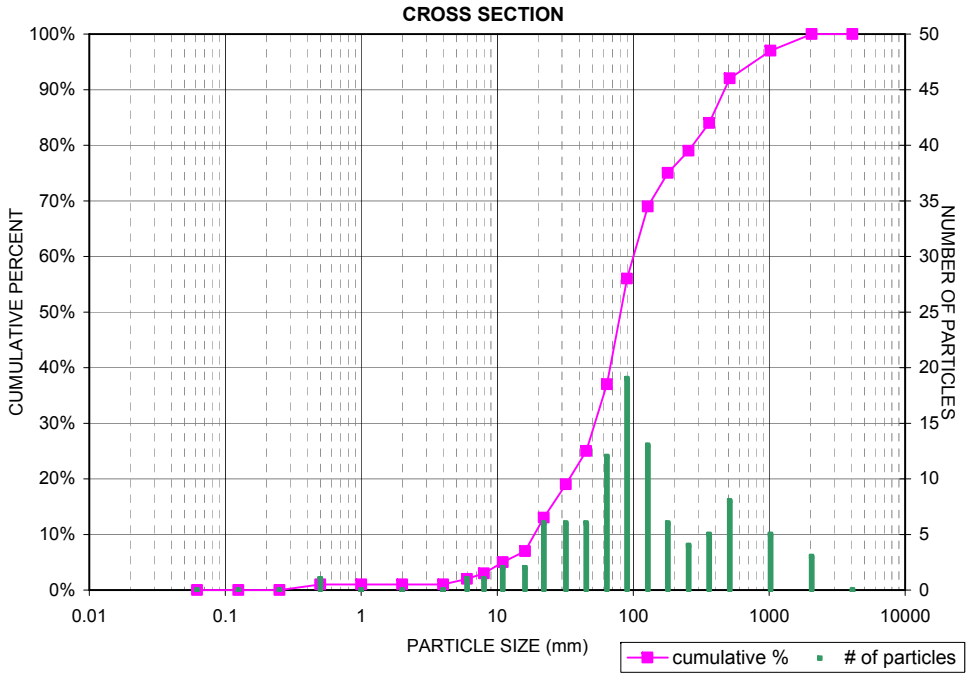
MONROE COUNTY WATER QUALITY STUDY				SITE ID. PARACR03	
Insecta		Philopotamidae	42	Simuliidae	6
Ephemeroptera		Polycentropodidae	16	Tabanidae	
Baetidae	23	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	8	Poduridae	
Ephemerellidae	10	Lepidostomatidae		Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae	39	Leptoceridae		Nematomorpha	
Leptophlebiidae		Limnephilidae	1	Annelida	
Metretopodidae		Molannidae		Hirudinea	
Neoephemeridae		Odontoceridae		Oligochaeta	
Oligoneuriidae	14	Phryganeidae		Lumbriculida	
Polymitarcyidae		Sericostomatidae		Lumbriculidae	
Potamanthidae		Uenoidae	12	Tubificida	
Siphlonuridae	31	Glossosomatidae		Platyhelminthes	
Tricorythidae	4	Hydroptilidae	3	Turbellaria	
Odonata		Rhyacophilidae	1	Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae		Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae		Dytiscidae		Sphaeriidae	
Libellulidae		Gyrinidae		Cyrenidae	
Macromiidae		Haliplidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	11	Ancylidae	2
Lestidae		Hydraenidae		Physidae	
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae	1	Psephenidae	2	Limnaeidae	
Leuctridae	9	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae		Corydalidae	4	Gammaridae	
Perlidae	4	Sialidae		Talitridae	
Perlodidae	3	Neuroptera		Isopoda	
Pteronarcyidae		Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydridae		Cambaridae	
Belostomatidae		Athericidae		Arachnidia	
Corixidae		Tipulidae	1	Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			
Notonectidae		Ceratopogonidae			
Saldidae		Chaoboridae			
Veliidae		Chironomidae	66		
Trichoptera		Culicidae			
Hydropsychidae	52	Muscidae			

2003

Pebble Count (Cross Section)

PARACR03

Material	Size Range (mm)		Particle Count	Cumulative Percent
silt/clay	0	0.062	0	0%
very fine sand	0.062	0.13	0	0%
fine sand	0.13	0.25	0	0%
medium sand	0.25	0.5	1	1%
coarse sand	0.5	1	0	1%
very coarse sand	1	2	0	1%
very fine gravel	2	4	0	1%
fine gravel	4	6	1	2%
fine gravel	6	8	1	3%
medium gravel	8	11	2	5%
medium gravel	11	16	2	7%
coarse gravel	16	22	6	13%
coarse gravel	22	32	6	19%
very coarse gravel	32	45	6	25%
very coarse gravel	45	64	12	37%
small cobble	64	90	19	56%
medium cobble	90	128	13	69%
large cobble	128	180	6	75%
very large cobble	180	256	4	79%
small boulder	256	362	5	84%
small boulder	362	512	8	92%
medium boulder	512	1024	5	97%
large - very large boulder	1024	2048	3	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	



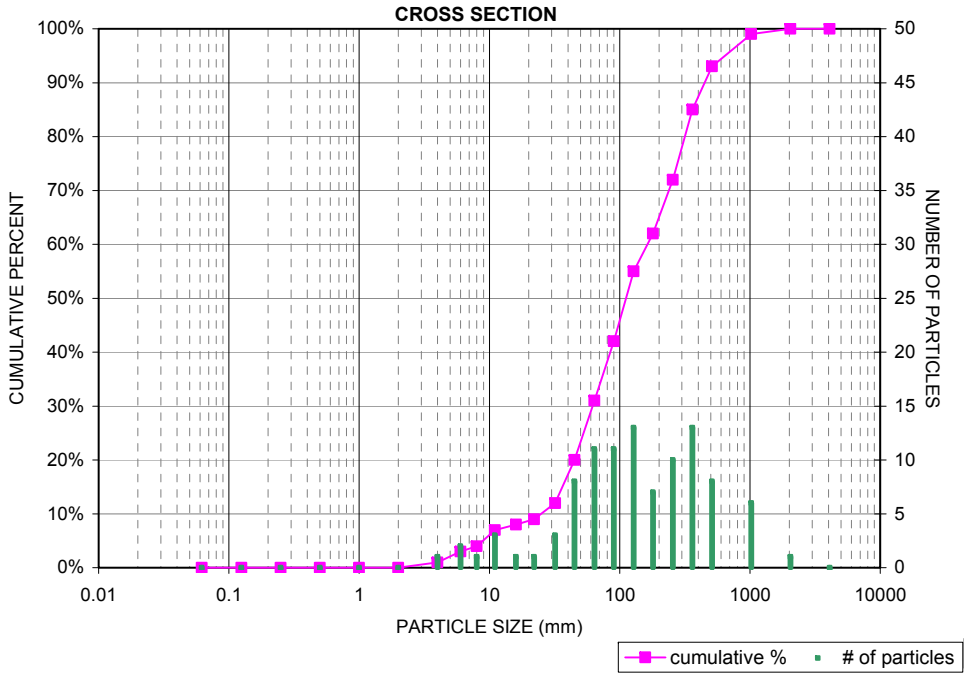
size percent less than (mm)						particle size distribution		
D16	D35	D50	D65	D84	D95	gradation	geo mean	std dev
26.533	60.35	80.8	115	362	776	3.8	98.0	3.7

2004

Pebble Count (Cross Section)

PARACR03

Material	Size Range (mm)		Particle Count	Cumulative Percent
silt/clay	0	0.062	0	0%
very fine sand	0.062	0.13	0	0%
fine sand	0.13	0.25	0	0%
medium sand	0.25	0.5	0	0%
coarse sand	0.5	1	0	0%
very coarse sand	1	2	0	0%
very fine gravel	2	4	1	1%
fine gravel	4	6	2	3%
fine gravel	6	8	1	4%
medium gravel	8	11	3	7%
medium gravel	11	16	1	8%
coarse gravel	16	22	1	9%
coarse gravel	22	32	3	12%
very coarse gravel	32	45	8	20%
very coarse gravel	45	64	11	31%
small cobble	64	90	11	42%
medium cobble	90	128	13	55%
large cobble	128	180	7	62%
very large cobble	180	256	10	72%
small boulder	256	362	13	85%
small boulder	362	512	8	93%
medium boulder	512	1024	6	99%
large - very large boulder	1024	2048	1	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	



size percent less than (mm)						particle size distribution		
D16	D35	D50	D65	D84	D95	gradation	geo mean	std dev
37.947	72.45	111.8	200	352	645	3.0	115.7	3.0