

Appendix X-C

DEP Assessment and PA Fish & Boat Commission Data

Creek Status
 U=Not Impaired
 B=Impaired Biology
 H=Impaired Habitat

DEP Unassessed Data

Station ID		Code	Name	Abundance	Range	Hilsenhoff Score
19990503-1100-JLR Anderson Creek Headwaters Creek Status= U Section 01 PA Fish Commission Water Chemistry pH: 3.5 Temp @: 10.3 Cond (umhos)= 67 DO (mg/l): 6.37 Stream Assessment Total Score: 175	Location	25	Cambaridae	P	3-9	6
	Upstream of Bridge on Rt. 153 (Penfield Quad)	30	Ephemerellidae	P	3-9	2
		50	Chloroperlidae	A	25-100	0
		53	Peltoperlidae	P	3-9	2
	Impairment	57	Taeniopterygidae	P	3-9	2
	Possible acid deposition impact; No mining activity	60	Elmidae	R	<3	5
		67	Nigronia	R	<3	2
		68	Sialidae	R	<3	6
		70	Brachycentridae	P	3-9	1
		73	Hydropsychidae	P	3-9	5
	77	Limnephilidae	R	<3	4	
	80	Philopotamidae	R	3-9	3	
	84	Rhyacophilidae	C	10-24	1	
	96	Simuliidae	A	25-100	6	
	98	Tipulidae	P	3-9	4	

1990503-1210-JLR Whitney Run Creek Status= B Section 02 of PA Fish Commission Water Chemistry pH: 4.55 Temp (Celcius): 10.3 Cond (umhos): 38 DO (mg/l): 6.01 Stream Assessment Total Score: 187	Location	5	Oligochaeta	R	<3	10
	On Whitney Run downstream of bridge on Gordon Road (Penfield)	25	Cambaridae	P	3-9	6
		32	Heptageniidae	R	<3	3
		50	Chloroperlidae	A	25-100	0
	Land Use	57	Taeniopterygidae	C	10-25	2
	90% forest; 5% residential; 5% Fields	67	Nigronia	P	3-9	2
		68	Sialidae	R	<3	6
		73	Hydropsychidae	R	<3	5
	Impairment	80	Philopotamidae	R	<3	3
	Low pH due to acid deposition/headwater stream	84	Rhyacophilidae	P	3-9	1
	89	Ceratopogonidae	R	<3	6	
	96	Simuliidae	A	25-100	6	

Appendix C. Pennsylvania Department of Environmental Protection, Pennsylvania Fish and Boat Commission, and Headwaters Resource Conservation and Development Council Data

Creek Status U=Not Impaired B=Impaired Biology H=Impaired Habitat

DEP Unassessed Data							
Station ID		Code	Name	Abundance	Range	Hilsenhoff Score	
19990503-1300-JLR Stony Run Creek Status= U Section 02 of PA Fish Commission Water Chemistry pH: 5.7 Temp ©: 14.4 Cond (umhos)=212 DO (mg/l): 5.41 Stream Assessment Total Score: 169	<u>Location</u>	5	Oligochaeta	R	<3	10	
	Downstream of bridge on Access Rd. along I-80	50	Chloroperlidae	C	10-24	0	
		54	Perlidae	P	3-9	3	
		57	Taeniopterygidae	C	10-24	2	
	<u>Land Use</u>	73	Hydropsychidae	C	10-24	5	
	70% forest; 20% roadways; 5% residential; 5% fields	80	Philopotamidae	P	3-9	3	
		89	Ceratopogonidae	P	3-9	6	
		96	Simuliidae	C	10-24	6	
19990503-1415-JLR Mongomery R @ Access Rd Creek Status= U Section 02 of PA Fish Commission Water Chemistry pH: 3.6 Temp (celcius): 10.7 Cond (umhos): 29 DO (mg/l): 5.96 Total Stream Assessment Total: 190	<u>Location</u>	25	Cambaridae	P	3-9	6	
	Montgomery Run @ end of Access Road off of Gordon Road (Elliot Park Quad)	30	Ephemereilidae	R	<3	2	
		40	Aeshnidae	R	<3	3	
		50	Chloroperlidae	A	25-100	0	
		53	Peltoperlidae	R	<3	2	
	<u>Land Use</u>	54	Perlidae	C	10-24	3	
	90% forest; 5% residential; 5% fields	57	Taeniopterygidae	C	10-24	2	
		67	Nigronia	P	3-9	2	
	<u>Impairment</u>	73	Hydropsychidae	P	3-9	5	
	Naturally Acidic	80	Philopostamidae	P	3-9	3	
	84	Rhyacophilidae	C	10-24	1		
	96	Simuliidae	C	10-24	6		
19981019-1315-JLR Anderson Ck. Rt. 322 Creek Status: U Section 03 of PA Fish Commission Water Chemistry pH: 6.8 Temp (celcius): 6.8 Cond (umhos):125 DO (mg/l): 5.47 Stream Assessment Total Score: 144	<u>Location</u>	25	Cambaridae	R	<3	6	
	Main Stem of Anderson Ck.; downstream of Rt. 322	32	Heptageniidae	A	25-100	3	
		40	Aeshnidae	R	<3	3	
		50	Chloroperlidae	R	<3	0	
	<u>Land Use</u>	54	Perlidae	C	10-24	3	
	65% Forest; 10% residential; 5% mining; 5% cropland; 5% pasture; 5% other	67	Nigronia	R	<3	2	
		68	Sialidae	R	<3	6	
		73	Hydropsychidae	C	10-24	5	
		80	Philopotamidae	C	10-24	3	
		83	Psychomyiidae	R	<3	2	

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DEP Unassessed Data						
Station ID	Code	Name	Abundance	Range	Hilsenhoff Score	
19981029-0900-JLR	4	Hydracarina	R	<3	7	
Anderson Ck. Junction with L. Anderson Ck.	27	Baetidae	R	<3	6	
Creek Status= U	32	Heptageniidae	A	25-100	3	
Section 04 of PA Fish Commission	33	Isonychiidae	P	3-9	3	
Water Chemistry	Location	50	Chloroperlidae	R	<3	0
pH: 7	Upstream of confluence	54	Perlidae	A	25-100	3
Temp (celcius): 8	w/Little Anderson Creek;	60	Elmidae	R	<3	5
Cond (umhos):120	Downstream of pipeline	66	Corydalus	P	3-9	4
DO (mg/l): 6.09	(Luthersburg Quad)	67	Nigronia	C	10-24	2
Stream Assessment Total Score: 170		68	Sialidae	R	<3	6
	Land Use	73	Hydropsychidae	A	25-100	5
	65% forest; 10% residential;	80	Philopotamidae	A	25-100	3
	10% Abd. Mining; 10%	96	Simuliidae	R	<3	6
	fields; 5% other	98	Tipulidae	R	<3	4
19981029-1030-JLR	Location	40	Aeshnidae	R	<3	3
	Downstream of confluence;					
	along railroad tracks; Forest	54	Perlidae	R	<3	3
Downstream of Little Anderson	Service Rd (Elliot Park	67	Nigronia	P	3-9	2
Creek Status= B,H	Quad)	68	Sialidae	R	<3	6
Section 05 of PA Fish Commission		73	Hydropsyscidae	P	3-9	5
Water Chemistry	Land Use					
pH: 3.9	70% forest; 10% residential;					
Temp (celcius): 8.6	10% Abd. Mining; 10%					
Cond (umhos):299	Fields					
DO (mg/l): 6.37	Impairment					
Stream Assessment Total Score: 155	AMD; Orange Deposit					
19981027-1330-JLR	Location	73	Hydropsyscidae	C	10-24	5
Anderson downstream of Refactory Co.	Anderson Ck. Downstream of N. Amer. Refactory Co.;					
	Upstream of Grampian Rd. (Curwensville Quad)					
Creek Status= B,H						
Section 05 of PA Fish Commission	Land Use					
Water Chemistry	50% residential; 10% Abd.					
pH: 5.5	Mining; 10% Industrial; 10%					
Temp (celcius): 14.2	fields; 15% Cropland; 10%					
Cond (umhos):323	forest					
DO (mg/l): 6.17	Impairment					
Stream Assessment Total Score: 115	Sediment Deposition;					
	iron/grey precipitate on					
	rocks: AMD					

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DEP Unassessed Data						
Station ID		Code	Name	Abundance	Range	Hilsenhoff Score
19981019-1125-JRL	<u>Location</u>	50	Chloroperlidae	R	<3	0
Anderson Ck. @ Mouth	Anderson Creek Upstream	55	Perlodidae	R	<3	2
Creek Status= B	of bridge on Rt. 879	67	Nigronia	P	3-9	2
Section 05 of PA Fish Commission	(Curwensville Quad)	68	Sialidae	P	3-9	6
	<u>Land Use</u>	73	Hydropsychidae	P	3-9	5
Water Chemistry	75% forest; 10% residential;	83	Pshychomyiidae	R	<3	2
pH: 4	5% Industrial; 5%					
Temp (celcius): 13.4	Commercial; 5% fields					
Cond (umhos):291	<u>Impairment</u>					
DO (mg/l): 5.82	AMD					
Stream Assessment Total Score: 148						
19990504-1455-JLR	<u>Location</u>		Chloroperlidae	R	<3	0
Rock Run above Bridge	Upstream of Rt. 219 Bridge		Nigronia	P	3-9	2
Creek Status= B,H	(Luthersburg Quad)		Sialidae	P	3-9	6
	<u>Land Use</u>		Empididae	R	<3	6
	50% forest; 20%		Tipulidae	R	<3	4
Water Chemistry	Residential;25% Abd.					
pH: 2.65	Mining; Fields 5%					
Temp (celcius): 15.9	<u>Impairment</u>					
Cond (umhos):457	Iron precipitation;					
DO (mg/l): 5.22	abandoned strip mines					
Stream Assessment Total Score: 159						
19990505-0850-JLR		68	Sialidae	P	3-9	6
L. Anderson Ck. Upstream of bridge	<u>Location</u>					
Creek Status= B	Bridge near B & O railroad					
	<u>Land Use</u>					
Water Chemistry	45% forest; 15% residential;					
pH: 2.15	30% Abd. Mining; 10% fields					
Temp (celcius): 11.6	<u>Impairment</u>					
Cond (umhos):630	AMD					
DO (mg/l): 5.67						
Stream Assessment Total Score: 167						

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DEP Unassessed Data						
Station ID		Code	Name	Abundance	Range	Hilsenhoff Score
19981029-1200-JLR L. Anderson Ck. @ Rt. 219 Creek Status= B	<u>Location</u>	68	Sialidae	P	3-9	6
	Upstream of Rock Run Rd. (Luthersburg Quad)	73	Hydropsychidae	C	10-24	5
	<u>Land Use</u>					
	35% forest; 15% Residential; 15% Abd. Mining; Fields 10%					
	<u>Water Chemistry</u>					
	pH: 3.9					
	Temp (celcius): 9					
	Cond (umhos):1060					
	DO (mg/l): 6.16					
	Stream Assessment Total Score: 138					
	<u>Impairment</u>					
	High embeddedness, siltation; impact from strip mining					
19990506-0945-JLR Kratzer Run ds Rt. 729 Creek Status= B	<u>Location</u>	5	Oligochaeta	A	25-100	10
	Kratzer Run ds of Rt. 729 bridge (Curwensville Quad)	30	Ephemerellidae	R	<3	2
		32	Heptageniidae	R	<3	3
**Also refer to results KR01	<u>Land Use</u>	68	Sialidae	R	<3	6
	65% Residential; 5% Abd. Mining; 10% commercial; 5% fields; 5% croplands	73	Hydropsychidae	A	25-100	5
	<u>Water Chemistry</u>	98	Tipulidae	R	<3	4
	pH: 4.43					
	Temp (celcius): 19					
	Cond (umhos):425					
	DO (mg/l): 8.61					
	Stream Assessment Total Score: 176					
	<u>Impairment</u>					
	excessive growth of algae; nutrient problems					
19990506-0830-JLR Kratzer Run near Mouth Creek Status= B	<u>Location</u>	51	Leuctridae	R	<3	0
	Kratzer run near confluence w/Anderson Ck.	54	Perlidae	R	<3	3
		73	Hydropsychidae	P	3-9	5
**Also refer to results KR01	<u>Land Use</u>					
	50% forest; 15% residential; 25% Abd. Mining; 10% fields					
	<u>Water Chemistry</u>					
	pH: 6.5					
	Temp (celcius):13.1					
	Cond (umhos):299					
	DO (mg/l): 5.71					
	Stream Assessment Total Score: 149					
	<u>Impairment</u>					
	AMD					

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DEP Unassessed Data							
Station ID		Code	Name	Abundance	Range	Hilsenhoff Score	
20030827-1200-JCO Bilger Run @ Bilger Rock Creek Status= B **Also refer to results BGR	<u>Location</u>	51	Leuctridae	R	<3	0	
	Bilger Run 1/8 mile upstream of T461 (Bilgers Rocks Rd); Curwensville Quad		67	Nigronia	C	10-24	2
			68	Sialidae	R	<3	6
	<u>Land Use</u>	73	Hydropsychidae	A	25-100	5	
<u>Water Chemistry</u> pH: 4.43 Temp (celcius):19 Cond (umhos): 425 DO (mg/l): 8.61 Stream Assessment Total Score: 176		<u>Impairment</u> 45% forest; 10% residential; 30% Abd. Mining; 10% fields; 5% cropland AMD; Yellowboy covering rocks					
19990506-0900-JLR Bilger Run @ mouth Creek Status= B **Also refer to results BGR	<u>Location</u>	25	Cambaridae	R	<3	6	
	On Bilger Run @ mouth; Upstream of Rt. 870 bridge (Curwensville Quad)		68	Sialidae	P	3-9	6
	<u>Land Use</u>						
<u>Water Chemistry</u> pH: 6.1 Temp (celcius):13.1 Cond (umhos): 321 DO (mg/l): 5.68 Stream Assessment Total Score: 142		<u>Impairment</u> 80% forest; 5% residential; 15% Abd. Mining AMD; Yellowboy covering rocks					

Fish and Boat Commission Report

Section 01 (0.5 upstream from Rt. 322 bridge near Rockton)		
Chemical Data	Biological Data	Physical Data
Air temp. = 22	<u>Invertebrate data</u>	Flow = Norm (2)
pH = 4.6	Peltopteridae	Bnk. Ersn. = Lite (3)
Total Alk.=1	Hydropsychidae	Shade = Dense (1)
Tot. Hard. = 14	Limnephilidae	Bank Veg. = Trees (4)
D.O. = 99.9	Chironomidae	Sub. Comp. = Grvl, Sand (4, 5)
Conductivity = 85	Corydalidae	
	Cambaridae	
	<u>Fish Data</u>	
	Salvelinus fontinalis	
	(Brook Trout)	

Section 02 (0.8 km downstream from Gordon Road bridge)		
Chemical Data	Biological Data	Physical Data
Air temp. = 23	<u>Invertebrate data</u>	Flow = Norm (2)
pH = 5.8	Leuctridae	Bnk. Ersn. = Hvy. (1)
Total Alk. = 4	Chironomidae	Shade = Dens (1)
Tot. Hard. = 19	Culicidae	Bank Veg. = Tree (4)
D.O. = 7.9	Rhigionidae	Sub. Comp. = Sand, Silt (5,6)
Conductivity = 65	Tipulidae	
	Corydaliade	
	Cambaridae	
	Oligochaeta	
	<u>Fish Data</u>	
	Rhinichthys cataractae	
	(Blacknose Dace)	
	Semotilus atromaculatus	
	(Creek Chub)	
	Catostomus commersoni	
	(White Sucker)	
	Lepomis gibbosus	
	(Pumpkinseed, Kiver)	
	Etheostoma olmstedii	
	(tessellated darter)	

Fish and Boat Commission Report

Section 02 (1.3 km upstream of I-80)		
Chemical Data	Biological Data	Physical Data
Air temp. = 23	<u>Invertebrate data</u>	Flow = Norm (2)
pH = 6.1	Ephemeriidae	Bnk. Ersn. = Mod. (2)
Total Alk. = 8	Heptageniidae	Shade = Prtl (2)
Tot. Hard. = 22	Hydropsychidae	Bank Veg. = GsLd (2)
D.O. = 7.5	Odontoceridae	Sub. Comp. = Sand, Silt (5,6)
Conductivity = 60	Odontoceridae	
	Philopotamidae	
	Chironomidae	
	Rhigionidae	
	Corydalidae	
	Oligochaeta	
	<u>Fish Data</u>	
	Salmo trutta	
	(Brown Trout)	
	Notropis cornutus	
	(Red-sided Minnow)	
	Pimephales notatus	
	(Bluntnose Dace)	
	Rhinichthys atratulus	
	(Blacknose Dace)	
	Semotilus atromaculatus	
	(Creek Chub)	
	Catostomus commersoni	
	(White sucker)	
	Ictalurus nebulosus	
	(Brown Bullhead)	
	Lemomis gibbosus	
	(Pumpkinseed, kiver)	
	Micropterus salmonides	
	(Largemouth Bass)	
	Etheostoma olmstedi	
	(Tessellated Darter)	
	Etheostoma nigrum	
	(Fantail darter)	

Section 03 (downstream from Rt. 153 bridge)		
Chemical Data	Biological Data	Physical Data
Air temp. = 23	<u>Invertebrate data</u>	Flow = Norm (2)
pH = 6.8	Heptageniidae	Bnk. Ersn. = Lite (3)
Total Alk. = 8	Siphonuridae	Shade = Prtl (2)
Tot. Hard. = 17	Perlidae	Bank Veg. = Tree (4)
D.O. = 8.0	Gomphidae	Sub. Comp. = Rubl, Grvl (3,4)
Conductivity = 78	Chironomidae	
	Oligochaeta	
	<u>Fish Data</u>	
	Salmo trutta	
	(Brown Trout)	
	Salvelinus fontinalis	
	(Brook Trout)	
	Pimephales notatus	
	(Bluntnose Minnow)	
	Rhinichthys atratulus	
	(Longnose Dace)	
	Semotilus atromaculatus	
	(Creek Chub)	
	Catostomus commersoni	
	(White Sucker)	
	Noturus insignis	
	(Margined Madtom)	

****Section 04** (2.0 km extension of Section 03)**
Section in very close to proximity to Section 03; therefore refer to those results

Fish and Boat Commission Report

Section 05 (2.2 km downstream from confluence with Little		
Chemical Data	Biological Data	Physical Data
Air temp. = 26	Peltoperlidae	Flow = Norm (2)
pH = 4.7	Chironomidae	Bnk. Ersn. = Mod (2)
Total Alk.=1	Sialidae	Shade = Prtl (2)
Tot. Hard. = 40		Bank Veg. = Tree (4)
D.O. = 99.9		Sub. Comp. = Rubl, Grvl (3,4)
Conductivity = 198		

Section 05 (at confluence with Kratzer Rn. Near Curwensville)		
Chemical Data	Biological Data	Physical Data
Air temp. = 25	<u>Invertebrate Data</u>	Flow = Norm (2)
pH = 4.4	Peltoperlidae	Bnk. Ersn. = Lite (3)
Total Alk.=0	Chironomidae	Shade = Open (3)
Tot. Hard. = 42	Sialidae	Bank Veg. = Tree (4)
D.O. = 99.9		Sub. Comp. = Rubl, Grvl (3,4)
Conductivity = 146	<u>Fish Data</u>	
	Lepomis gibbosus	
	(Pumpkinseed, Kiver)	

Headwaters RC & D Assessment

Habitat Parameter	ACO1	ACO2	AC03	AC04	LA01	LA02	LA03	PR01	BR01	KR01	FR01	BR01
Epifaunal Substrate/Available Cover	14	14	12	8	11	11	7	11	18	12	13	14
Riffle Quality	9	9	12	7	8	7	9	8	14	10	9	9
Embeddedness	13	13	18	13	12	7	14	12	17	9	14	13
Channel Alteration	19	19	16	8	18	19	14	18	19	14	18	18
Sediment Deposition	12	12	17	11	13	8	18	13	18	13	14	16
Frequency of Riffles	11	11	11	8	9	12	14	9	14	12	11	11
Channel Flow Status	13	13	7	10	8	12	8	8	11	8	7	8
Bank Vegetative Protection	18	18	16	11	14	8	8	14	18	15	15	18
Bank Stability	18	16	15	17	14	8	7	14	18	15	15	18
Riparian Vegetative Zone Width	18	17	12	2	16	18	10	16	18	14	17	18
Totals	145	142	136	95	123	110	109	123	165	122	133	143

Parameters based on a scale ranging from 1-20

Additional Assessment

Station 01 Anderson Creek (beginning below the reservoir) AC01
 Figure 3, PA Quadrangle
 Habitat Evaluation: 145 (suboptimal)
 Areas of Concern: Riffle Quality
 Average Stream Width: 30 ft

Station 02 Anderson Creek AC02
 Figure 02, PA Quadrangle
 Habitat Evaluation: 142 (suboptimal)
 Area of Concern: Riffle Quality
 Average Stream Width: 30 ft

Station 03, Anderson Creek AC03
 Figure 03, PA Quadrangle
 Habitat Evaluation: 136 (suboptimal)
 Area of Concern: channel flow status
 Average Stream Width: 50 ft

Station 03, Anderson Creek AC03
 Figure 03, PA Quadrangle
 Habitat Evaluation: 136 (suboptimal)
 Area of Concern: channel flow status
 Average Stream Width: 50 ft

Station 04, Anderson Creek AC04
 Figure 04, PA Quadrangle
 Habitat Evaluation: 95 (marginal)
 Area of Concern: Epifaunal substrate, riffle quality, channel alterations, riparian vegetative zone
 Average Stream Width: 45

Station 01, Little Anderson Creek LA01
 Figure 01, PA Quadrangle
 Habitat Evaluation: 123 (suboptimal)
 Areas of Concern: riffle quality, frequency of riffles, channel flow status
 Average Stream Width: 5 ft

Headwaters RC & D Assessment

Station 02, Little Anderson Creek LA02

Figure 02, PA Quadrangle

Habitat Evaluation: 110 (low suboptimal range)

Areas of concern: riffle quality, embeddedness, sediment deposition, vegetative protection, bank stability

Average Stream Width: 8 ft

Station 03, Little Anderson Creek LA03

Figure 03, PA Quadrangle

Habitat Evaluation: 109 (low suboptimal range)

Areas of concern: riffle quality, channel flow status, bank vegetative protection, bank stability, riparian vegetative zone width

Average Stream Width: 25 ft

Tributaries of Anderson Creek

Station 01: Panther Run PR01

Figure 3, PA Quadrangles

Habitat Evaluation: 123 (suboptimal range)

Areas of Concern: riffle quality, frequency of riffles, channel flow status

Average Stream Width: 5 ft

Station 01: Bear Run BR01

Figure 5, PA Quadrangle

Habitat Evaluation: 165 (Optimal)

Areas of Concern: channel flow status

Average Stream Width: 12 ft

Station 01: Kratzer Run KR01

Figure 1, PA Quadrangle

Habitat Evaluation: 122 (suboptimal)

Areas of Concern: embeddedness, channel flow status

Average Stream Width: 10 ft.

Station 01: Fenton Run FR01

Figure 2, PA Quadrangle

Habitat Evaluation: 133 (suboptimal)

Areas of Concern: Riffle quality, channel flow status

Average Stream Width: 10 ft

Station 01: Bilger Run BR01

Figure 2, PA Quadrangle

Habitat Evaluation: 143 (high suboptimal range)

Areas of Concern: Riffle quality, channel flow

Average Stream Width: 8 ft

Appendix X-D

USDA Visual Assessment Protocol