Attachment 1

Physical Characterization/Water Quality Field Data Sheets

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wildcat Creek	LOCATION Downstr. of Dixon bridge
STATION # Reach #1 RIVERMILE	STREAM CLASS Well balanced, warm water aquatic community
LAT 40°28.616'N LONG 086°10.002'W	STREAM ORDER 4-5
	RIVER BASIN Upper Wabash
INVESTIGATORS M. Mischuk, W. Allen	
FORM COMPLETED BY M. Mischuk	DATE 6-12-01 TIME 1030 (AM) PM — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
50 % ☒	%cloud cover	☒ 50%
☐	clear/sunny	☐

Has there been a heavy rain in the last 7 days? ☒ Yes ☐ No

Air Temperature ____ °C

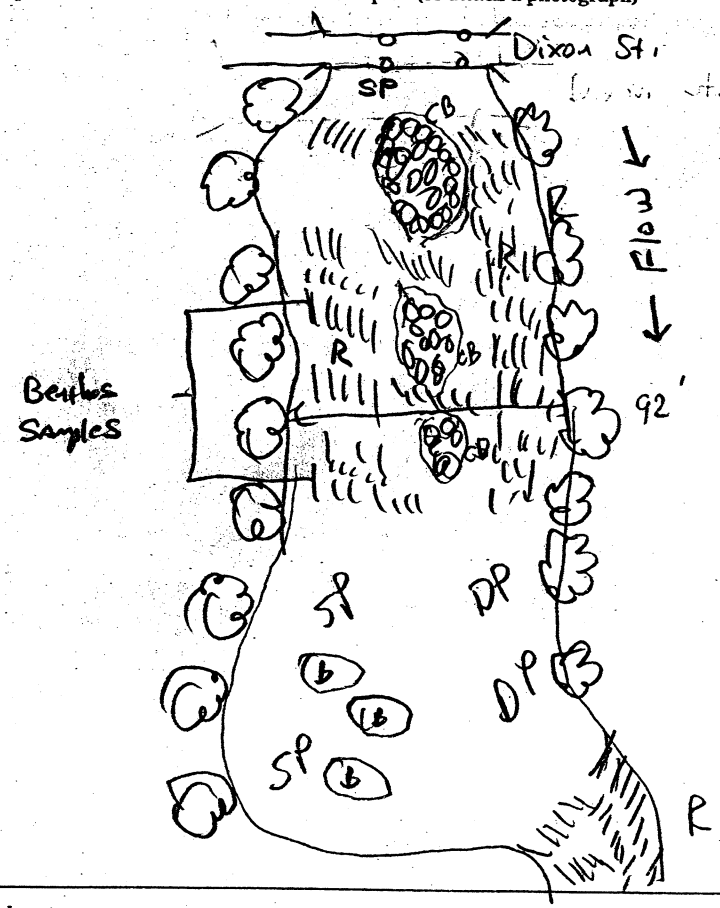
Other ____

SITE LOCATION/MAP

R = Riffle
DP = Deep Pool
SP = Shallow Pool
CB = Cobble bar
B = Boulders

* Dixon Bridge replaced - Const. ongoing

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Origin
☐ Glacial
☐ Non-glacial montane
☐ Swamp and bog
☐ Spring-fed
☒ Mixture of origins
☐ Other ____

Stream Type
☐ Coldwater ☒ Warmwater

Catchment Area 627 km² approx 242 mi²

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach #1) CS2-IX01 (Date 6-12-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☐ Commercial ☐ Field/Pasture ☒ Industrial – Right Bank ☒ Agricultural ☐ Other _____ ☐ Residential Ag - Left bank **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☒ Moderate ☐ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Silver Maple, Cottonwood, Sycamore
INSTREAM FEATURES	**Estimated Reach Length** 457 m 1500 ft **Estimated Stream Width** 28 m 92 ft. **Sampling Reach Area** 12796 m² **Area in km²** (~~m²x1000~~) 0.0127 km² **Estimated Stream Depth** 0.5 m **Surface Velocity (at thalweg)** 0.27 ft/sec **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 2 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 30 % ☐ Run 30 % ☐ Pool 40 % **Channelized** ☐ Yes ☒ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☒ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☐ Attached Algae **dominant species present** _____ **Portion of the reach with aquatic vegetation** 20 %
WATER QUALITY 10:27 A.M.	**Temperature** 21.03 °C **Specific Conductance** 674 µs/cm **Dissolved Oxygen** 9.28 mg/L **pH** 7.77 **Turbidity** 4.3 NTU **WQ Instrument Used** YSI 610DM Hardness = 295 mg/L **Water Odors** ☐ Normal/None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☒ Other WWTP **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other _____ **Turbidity (if not measured)** ☐ Clear ☒ Slightly turbid ☐ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ☐ Normal ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other _____ **Oils** ☐ Absent ☒ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other _____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	100%
Boulder	> 256 mm (10")	10			
Cobble	64-256 mm (2.5"-10")	40	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	20	Marl	grey, shell fragments	
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wildcat Creek	LOCATION Between RR bridge + Dixon Rd. Bridge
STATION # Reach 2 RIVERMILE ____	STREAM CLASS well balanced, WW aquatic Community
LAT 40° 28.502' N LONG 086° 09.773 W	STREAM ORDER 4-5
	RIVER BASIN Upper Wabash
INVESTIGATORS M. Mischuk, W. Alley	
FORM COMPLETED BY M. Mischuk	DATE 6-13-01 TIME 0830 (AM) PM — REASON FOR SURVEY

WEATHER CONDITIONS

Now: ☐ storm (heavy rain) ☐ rain (steady rain) ☐ showers (intermittent) 10 % ☐ %cloud cover ☐ clear/sunny

Past 24 hours: ☐ ☐ ☐ 50 % ☐

Has there been a heavy rain in the last 7 days? ☒ Yes ☐ No

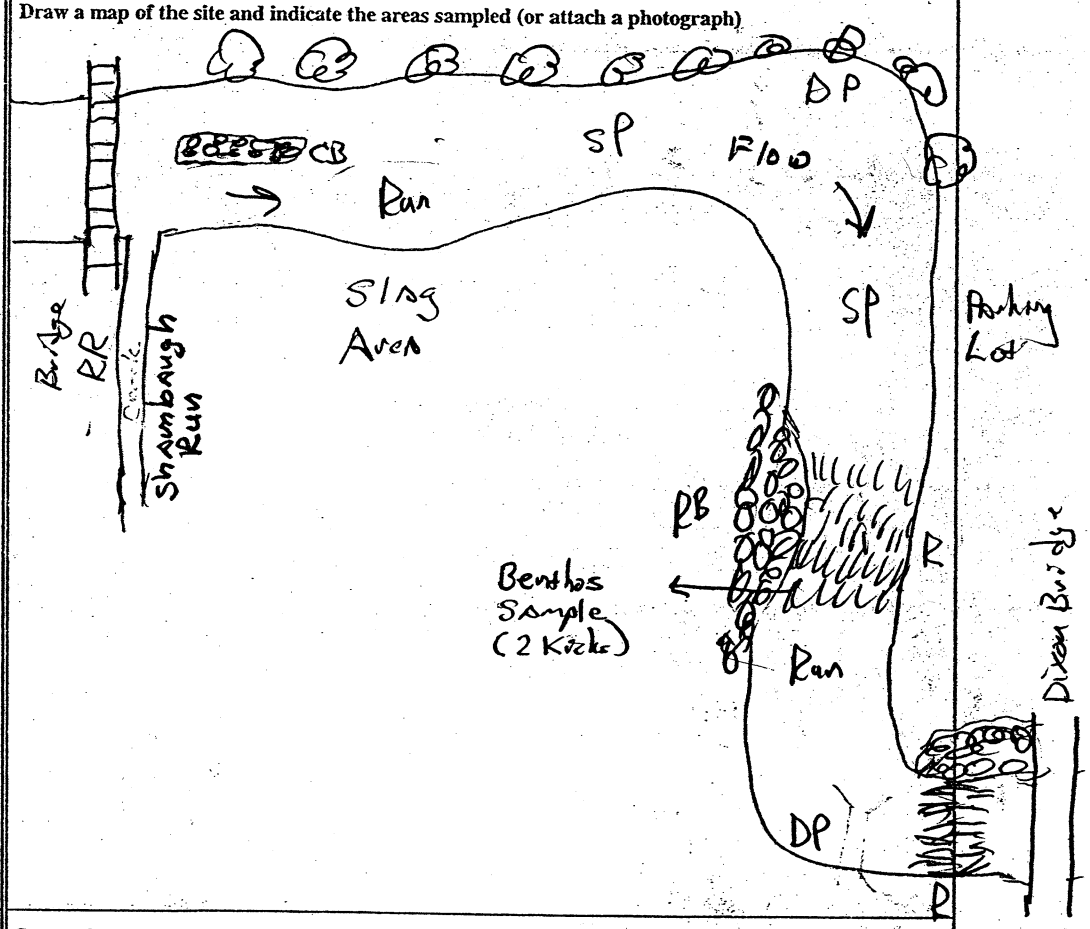
Air Temperature ____ °C

Other ____

SITE LOCATION/MAP

R = Riffle
CB = Cobble bar
DP = Deep Pool
SP = Shallow Pool

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem: ☒ Perennial ☐ Intermittent ☐ Tidal

Stream Origin: ☐ Glacial ☐ Non-glacial montane ☐ Swamp and bog ☐ Spring-fed ☒ Mixture of origins ☐ Other ____

Stream Type: ☐ Coldwater ☒ Warmwater

Catchment Area 627 km² 242 mi² Approx.

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach # 2 CS2-IX02 (Date 6-13-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☐ Commercial ☐ Field/Pasture ☒ Industrial ☐ Agricultural ☐ Other _____ ☐ Residential **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** Northern Catalpa ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Sycamore, Silver Maple, Black Willow, Cottonwood
INSTREAM FEATURES	**Estimated Reach Length** 640 m 2100 ft **Estimated Stream Width** 29 m 96 ft. **Sampling Reach Area** 18,560 m² **Area in km² (m²x1000)** 0.01856 km² **Estimated Stream Depth** 0.5 m **Surface Velocity (at thalweg)** 0.26 ft/sec see USGS Data **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 3 m **Proportion of Reach Represented by Stream Morphology Types** ☒ Riffle 20 % ☒ Run 10 % ☒ Pool 70 % **Channelized** ☐ Yes ☒ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** 0.5 m² **Density of LWD** 0.5 m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☒ Attached Algae **dominant species present** Cladophora **Portion of the reach with aquatic vegetation** 10 %
WATER QUALITY 10:50 A.M.	**Temperature** 22.3 °C **Specific Conductance** 629 µs/cm **Dissolved Oxygen** 8.93 Mg/L **pH** 7.71 **Turbidity** 3.20 NTU **WQ Instrument Used** YSI 610 DM Hardness 290 mg/L **Water Odors** ☐ Normal/None ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other _____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other _____ **Turbidity (if not measured)** ☐ Clear ☐ Slightly turbid ☒ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ☐ Normal ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other _____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other _____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			**ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)**		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	100%
Boulder	> 256 mm (10")	10			
Cobble	64-256 mm (2.5"-10")	10	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	50			
Sand	0.06-2mm (gritty)	20	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	10			
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wildcat Ck.	LOCATION upstr. of RR bridge, Downst of conf. Kokomo
STATION # Reach #3 RIVERMILE	STREAM CLASS Well balanced, WW Aquatic Community
LAT 40°28.237'N LONG 086.09.157'W	STREAM ORDER 4-5
	RIVER BASIN Upper Wabash
INVESTIGATORS M. Mischuk, W. Allen	
FORM COMPLETED BY M. Mischuk	DATE 6-14-01 TIME 1103 (AM) PM — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
20 % ☐	%cloud cover	☒ 10 %
☐	clear/sunny	☐

Has there been a heavy rain in the last 7 days? ☐ Yes ☒ No

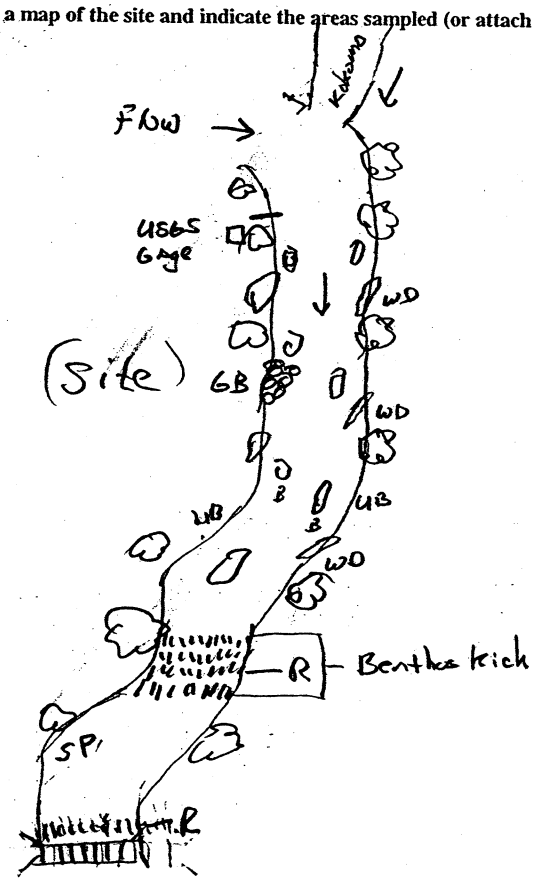
Air Temperature ____ °C

Other ____

SITE LOCATION/MAP

B- Boulders
GB- Gravel Bar
UB- Undercut bank
R= Riffle

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Type
☐ Coldwater ☒ Warmwater

Stream Origin
☐ Glacial ☐ Spring-fed
☐ Non-glacial montane ☒ Mixture of origins
☐ Swamp and bog ☐ Other ____

Catchment Area 627 km² / 242 mi² Approx.

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach 3) CS2-IX03 (Date 6-14-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☒ Commercial ☐ Field/Pasture ☒ Industrial ☐ Agricultural ☐ Other _____ ☐ Residential **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Sycamore, Silver Maple, Boxelder, Cottonwood
INSTREAM FEATURES	**Estimated Reach Length** 1262 m 4140 ft. **Estimated Stream Width** 30 m 97 ft. **Sampling Reach Area** 37860 m² **Area in km² (~~m²x1000~~)** 0.03786 km² **Estimated Stream Depth** 0.5 m AVE. **Surface Velocity (at thalweg)** 0.27 ft/sec **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 2 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 10 % ☐ Run 30 % ☐ Pool 20 % **Channelized** ☐ Yes ☒ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION None	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☐ Attached Algae **dominant species present** _____ **Portion of the reach with aquatic vegetation** ____ %
WATER QUALITY 11:14 A.M	**Temperature** 24.45 °C **Specific Conductance** 654 µs/cm **Dissolved Oxygen** 8.28 **pH** 7.76 **Turbidity** 53 **WQ Instrument Used** YSI 610 DM Hardness - 281 **Water Odors** ☐ Normal/None ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other _____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☐ None ☒ Other spots of Pet. Prod. **Turbidity (if not measured)** ☐ Clear ☐ Slightly turbid ☒ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ? ☐ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other _____ **Oils** ? ☐ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other _____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			**ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)**		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	85%
Boulder	> 256 mm (10")	10			
Cobble	64-256 mm (2.5"-10")	20	Muck-Mud	black, very fine organic (FPOM)	10%
Gravel	2-64 mm (0.1"-2.5")	50			
Sand	0.06-2mm (gritty)	20	Marl	grey, shell fragments	5%
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Kokomo Creek	LOCATION upst. of Wildcat Creek to Highland Park
STATION # Reach #4 RIVERMILE	STREAM CLASS Well balanced, WW Aquatic community
LAT LONG	STREAM ORDER 3
	RIVER BASIN Upper Wabash
INVESTIGATORS M. Mischuk, W. Allan	
FORM COMPLETED BY M. Mischuk	DATE 6-15-01 TIME 0758 (AM) PM — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
20 % ☒	%cloud cover	☒ 50 %
☐	clear/sunny	☐

Has there been a heavy rain in the last 7 days? ☐ Yes ☒ No

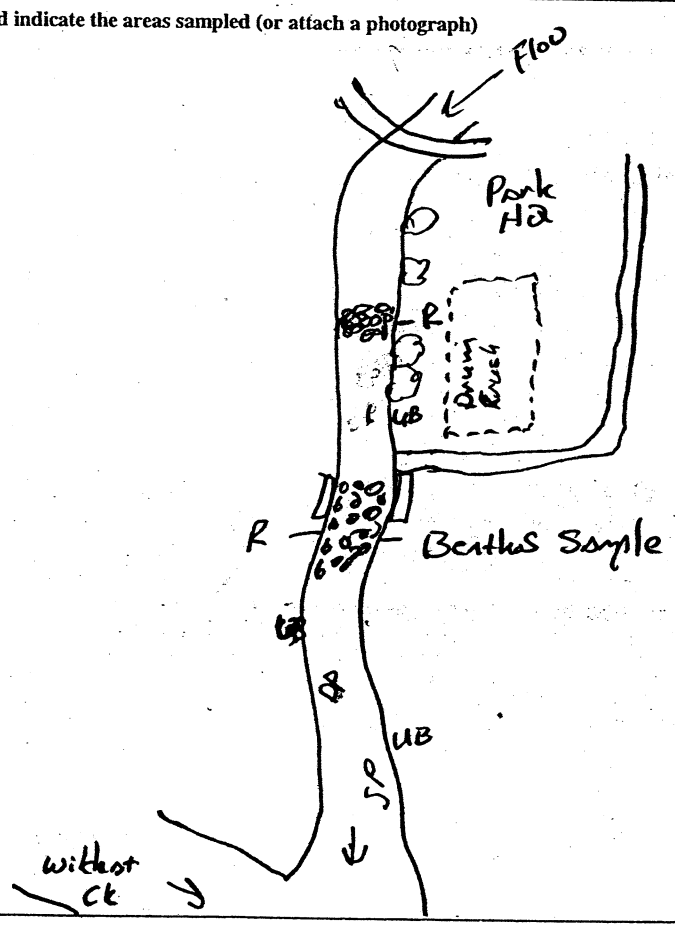
Air Temperature 75 °F

Other

SITE LOCATION/MAP

R - Riffle
UB - Undercut banks
SP - Shallow Pool
DP - Deep Pool

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Origin
☐ Glacial
☐ Non-glacial montane
☐ Swamp and bog
☐ Spring-fed
☒ Mixture of origins
☐ Other

Stream Type
☐ Coldwater ☒ Warmwater

Catchment Area 93 km² Approx. / 36 mi²

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach #4) CS2-Ix04 (Date 6-15-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☒ Commercial ☐ Field/Pasture ☒ Industrial ☐ Agricultural ☐ Other _____ ☐ Residential **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Silver Maple, Boxelder,
INSTREAM FEATURES	**Estimated Reach Length** 914 m 3000 ft **Estimated Stream Width** 14 m 45 ft. **Sampling Reach Area** 12796 m² **Area in km²** ~~(m²x1000)~~ 0.012796 km² **Estimated Stream Depth** 0.5 m **Surface Velocity (at thalweg)** — ft/sec 0.14 **Canopy Cover** ☐ Partly open ☐ Partly shaded ☒ Shaded **High Water Mark** 2 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 20 % ☐ Run 20 % ☐ Pool 60 % **Channelized** ☒ Yes ☐ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☒ Attached Algae **dominant species present** Cladophora **Portion of the reach with aquatic vegetation** 5 %
WATER QUALITY 6-18-01 Hardness = 295 mg/L as $CaCO_3$	**Temperature** 23.40 °C **Specific Conductance** 630 µS/cm **Dissolved Oxygen** 8.79 mg/L **pH** 7.48 **Turbidity** NA **WQ Instrument Used** YSI 650 MDS Hardness - 292 (6-15-01) **Water Odors** ☐ Normal/None ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other _____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other _____ **Turbidity (if not measured)** ☐ Clear ☒ Slightly turbid ☐ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other _____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other _____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	70
Boulder	> 256 mm (10")	5			
Cobble	64-256 mm (2.5"-10")	10	Muck-Mud	black, very fine organic (FPOM)	20
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	45	Marl	grey, shell fragments	10
Silt	0.004-0.06 mm	10			
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wildcat Ck.	LOCATION Upst. of Kokomo Ck.
STATION # Reach #5 RIVERMILE _____	STREAM CLASS Well balanced, WW Aquatic Comm
LAT _____ LONG _____	STREAM ORDER 4-5
	RIVER BASIN Upper Wabash
INVESTIGATORS M. Mischuk, W. Allen	
FORM COMPLETED BY M. Mischuk	DATE 6-14-01 TIME 13 10 AM (PM) — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
50 % ☒	%cloud cover	☒ 20 %
☐	clear/sunny	☐

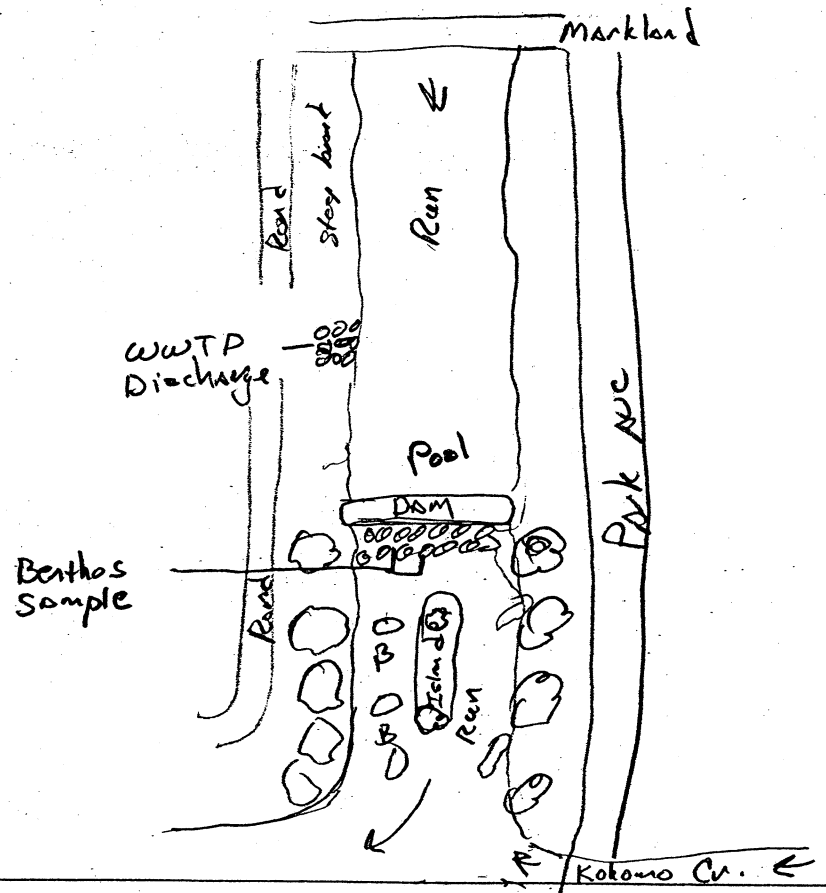
Has there been a heavy rain in the last 7 days? ☐ Yes ☒ No

Air Temperature _____ °C

Other _____

SITE LOCATION/MAP

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Origin
☐ Glacial
☐ Non-glacial montane
☐ Swamp and bog
☐ Spring-fed
☒ Mixture of origins
☐ Other _____

Stream Type
☐ Coldwater ☒ Warmwater

Catchment Area 627 km² / 242 mi² approx.

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach #5 - CS2-IX05 (Date 6-14-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☒ Commercial ☐ Field/Pasture ☒ Industrial ☐ Agricultural ☐ Other _____ ☐ Residential **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Silver Maple, Boxelder, Cottonwood
INSTREAM FEATURES	**Estimated Reach Length** 713 m 2340 ft **Estimated Stream Width** 34 m 110 ft **Sampling Reach Area** 24242 m² **Area in km² (m²x1000)** 0.024242 km² **Estimated Stream Depth** 1 m **Surface Velocity (at thalweg)** 0.27 ft/sec **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 2 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 10 % ☐ Run 80 % ☐ Pool 10 % **Channelized** ☐ Yes ☒ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☒ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☐ Attached Algae **dominant species present** _____ **Portion of the reach with aquatic vegetation** 5 %
WATER QUALITY 1310	**Temperature** 26.58° C **Specific Conductance** 656 µs/cm **Dissolved Oxygen** 9.28 mg/L **pH** 8.03 **Turbidity** 3.6 **WQ Instrument Used** YSI 610 DM Hardness 273 mg/L **Water Odors** ☐ Normal/None ☒ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other _____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☐ None ☒ Other Spots of sheen **Turbidity (if not measured)** ☐ Clear ☐ Slightly turbid ☒ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ☐ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☒ None ☐ Other _____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other _____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	90
Boulder	> 256 mm (10")	10			
Cobble	64-256 mm (2.5"-10")	20	Muck-Mud	black, very fine organic (FPOM)	10
Gravel	2-64 mm (0.1"-2.5")	50			
Sand	0.06-2mm (gritty)	10	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	10			
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wildcat Ck	LOCATION upst. of Markland Ave bridge to low head dam
STATION # Real #6 RIVERMILE	STREAM CLASS well balanced, WW Aquatic Comm.
LAT 40°28.862'N LONG 86°08.788'W	STREAM ORDER 4-5
	RIVER BASIN upper Wabash
INVESTIGATORS M. Mischuk, W. Allen	
FORM COMPLETED BY M. Mischuk	DATE 6-19-01 TIME 1237 AM (PM) — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
40 % ☐	%cloud cover	☐ ___ %
☐	clear/sunny	☒

Has there been a heavy rain in the last 7 days? ☒ Yes ☐ No

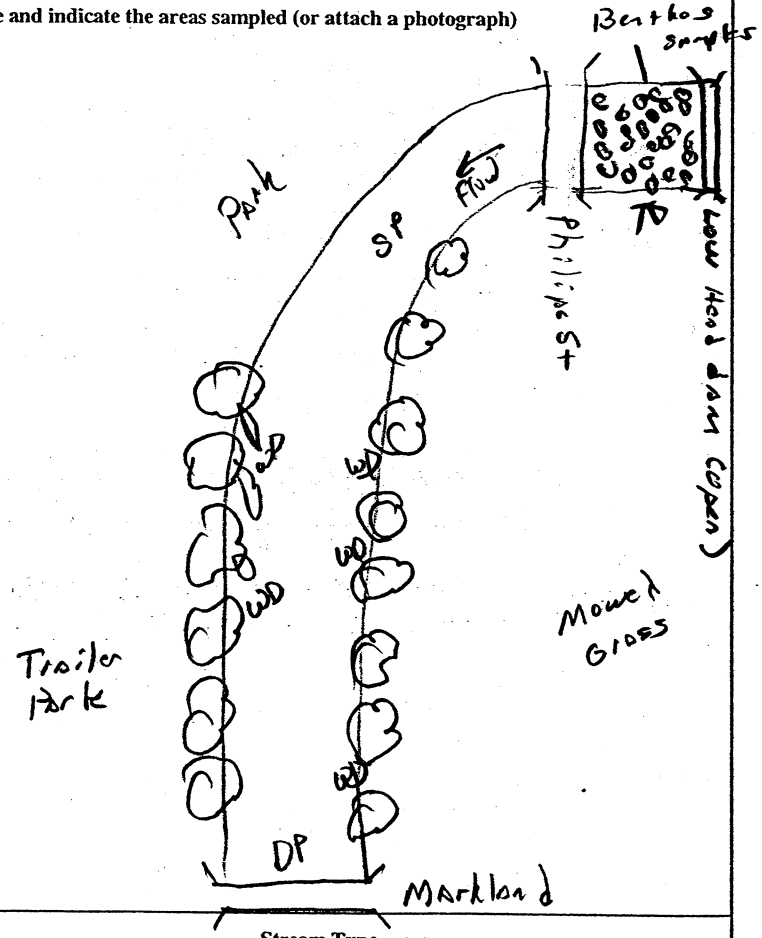
Air Temperature 85 °C

Other _____

SITE LOCATION/MAP

R- riffle Area

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Type
☐ Coldwater ☒ Warmwater

Stream Origin
☐ Glacial ☐ Spring-fed
☐ Non-glacial montane ☒ Mixture of origins
☐ Swamp and bog ☐ Other _____

Catchment Area 627 km² / 242 mi² Approx.

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach #) 6 CS2-IX/6 (Date 6-19-01)

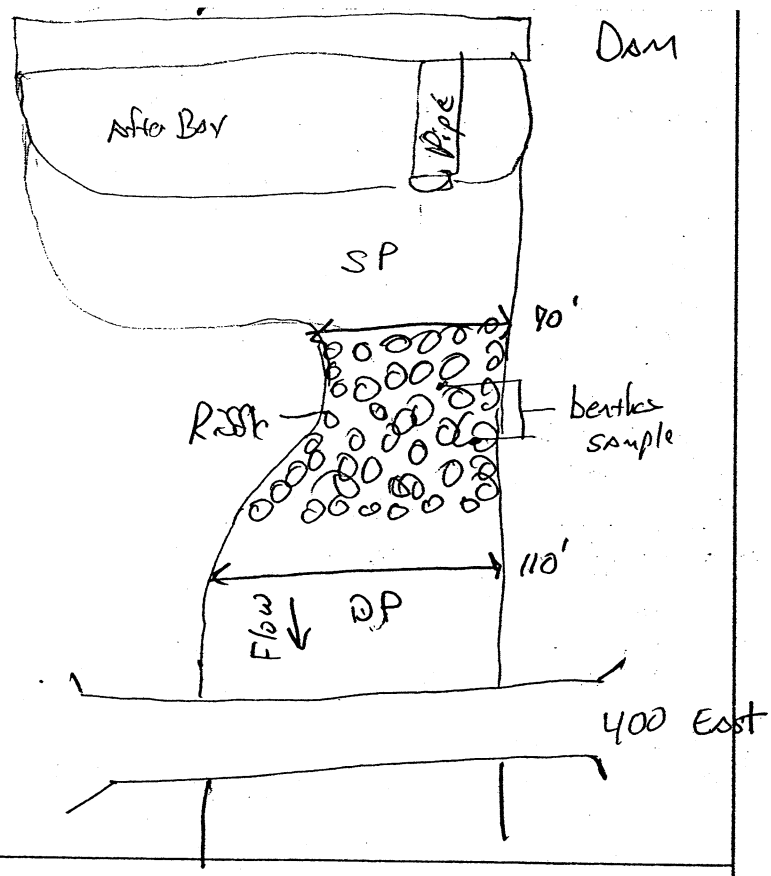
WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☐ Commercial ☐ Field/Pasture ☒ Industrial ☐ Agricultural ☐ Other _____ ☒ Residential **Local Watershed NPS Pollution** ☐ No evidence ☐ Some potential sources ☒ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Silver Maple, Sycamore, Cottonwood
INSTREAM FEATURES	**Estimated Reach Length** 786 m 2580ft **Estimated Stream Width** 30.5 m 100ft. **Sampling Reach Area** 23973 m² **Area in km²** ~~(m²x1000)~~ 0.023973 km² **Estimated Stream Depth** 0.5 m Ave **Surface Velocity (at thalweg)** 1.37 ft/sec **Canopy Cover** ☐ Partly open ☐ Partly shaded ☐ Shaded **High Water Mark** 1 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 10 % ☐ Run 50 % ☐ Pool 40 % **Channelized** ☒ Yes ☐ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☒ Attached Algae in riffle **dominant species present** _____ **Portion of the reach with aquatic vegetation** ____ %
WATER QUALITY 6-19-01 1240	**Temperature** 25.18 °C **Specific Conductance** 535 µs/cm **Dissolved Oxygen** 6.77 mg/L **pH** 7.84 **Turbidity** NA **WQ Instrument Used** _____ Hardness 254 mg/L as $CaCO_3$ **Water Odors** ☒ Normal/None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other _____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other _____ **Turbidity (if not measured)** ☐ Clear ☐ Slightly turbid ☒ Turbid ☐ Opaque ☐ Stained ☐ Other _____
SEDIMENT/ SUBSTRATE	**Odors** ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other _____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☐ Sand ☐ Relict shells ☒ Other Silt **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	90
Boulder	> 256 mm (10")	5			
Cobble	64-256 mm (2.5"-10")	5	Muck-Mud	black, very fine organic (FPOM)	10
Gravel	2-64 mm (0.1"-2.5")	10			
Sand	0.06-2mm (gritty)	60	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	20			
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Wild cat	Add page with fish Reach
STATION # Reach #7 RIVERMI	
LAT _____ LONG ___	
INVESTIGATORS M. Mis	
FORM COMPLETED BY M. Mischak	

WEATHER CONDITIONS	No [[[___%[X
SITE LOCATION/MAP DP = Deep Pool SP = Shallow Pool	Draw a Ben



STREAM CHARACTERIZATION	**Stream Subsystem** ☒ Perennial ☐ Intermittent ☐ Tidal **Stream Origin** ☐ Glacial ☐ Spring-fed ☐ Non-glacial montane ☒ Mixture of origins ☐ Swamp and bog ☐ Other_____ **Stream Type** ☐ Coldwater ☒ Warmwater **Catchment Area** 627 km² / 242 mi² Approx.

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # Reach #7 - CS2 - IX 07 (Date 6-16-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☐ Commercial ☐ Field/Pasture ☐ Industrial ☒ Agricultural ☐ Other _____ ☒ Residential **Local Watershed NPS Pollution** ☒ No evidence ☐ Some potential sources ☐ Obvious sources **Local Watershed Erosion** ☐ None ☐ Moderate ☒ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Silver maple, Boxelder
INSTREAM FEATURES	**Estimated Reach Length** _____m **Estimated Stream Width** _____m **Sampling Reach Area** _____m^2 **Area in km^2 (m^2x1000)** _____km^2 **Estimated Stream Depth** _____m **Surface Velocity (at thalweg)** _____ft/sec **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 1 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 20 % ☐ Run 30 % ☐ Pool 50 % **Channelized** ☐ Yes ☒ No **Dam Present** ☒ Yes ☐ No
LARGE WOODY DEBRIS	**LWD** _____m^2 **Density of LWD** _____m^2/km^2 (LWD/ reach area)
AQUATIC VEGETATION /	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☒ Attached Algae **dominant species present** Cladophora **Portion of the reach with aquatic vegetation** 10 %
WATER QUALITY 10:28	**Temperature** 24.21 °C **Specific Conductance** 486 us/cm **Dissolved Oxygen** 9.82 mg/L **pH** 7.36 **Turbidity** _____ **WQ Instrument Used** YSI 650 MDS Hardness: 250 mg/L **Water Odors** ☒ Normal/None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other_____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other_____ **Turbidity (if not measured)** ☐ Clear ☐ Slightly turbid ☒ Turbid ☐ Opaque ☐ Stained ☐ Other_____
SEDIMENT/ SUBSTRATE	**Odors** ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other_____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other_____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			**ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)**		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	80%
Boulder	> 256 mm (10")	20			
Cobble	64-256 mm (2.5"-10")	20	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	30	Marl	grey, shell fragments	20%
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 1 of 2)

STREAM NAME Little Deer Ck.	LOCATION Upstr. Hy 29 bridge (Sharon, IN)
STATION # Reach #8 RIVERMILE ____	STREAM CLASS Well balanced, Aquatic Comm.
LAT 40° 33.378 N LONG 86° 23.493 W	STREAM ORDER 2nd.
	RIVER BASIN Deer Cr. / Upper Wabash
INVESTIGATORS M. Mischuk, W. Allen	
FORM COMPLETED BY M. Mischuk	DATE 6-18-01 TIME 0841 (AM) PM — REASON FOR SURVEY

WEATHER CONDITIONS

Now		Past 24 hours
☐	storm (heavy rain)	☐
☐	rain (steady rain)	☐
☐	showers (intermittent)	☐
80 % ☒	%cloud cover	☐ ____ %
☐	clear/sunny	☒

Has there been a heavy rain in the last 7 days? ☒ Yes ☐ No

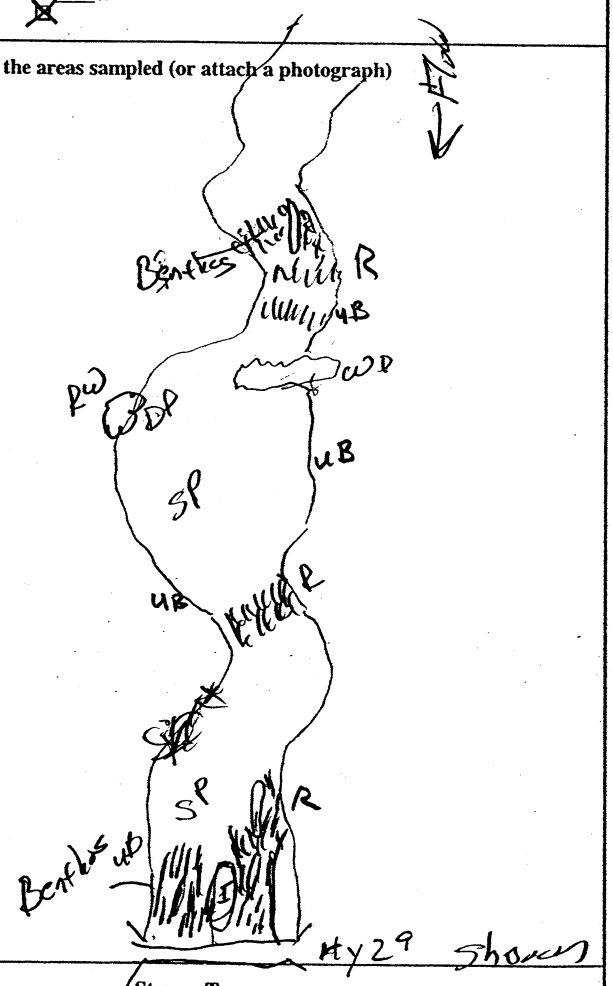
Air Temperature ____ °C

Other ____

SITE LOCATION/MAP

DP = Deep Pool
Sp = Shallow Pool
R = Riffle
WD = Woody Debris
I = Island
UB = Undercut bank

Draw a map of the site and indicate the areas sampled (or attach a photograph)



STREAM CHARACTERIZATION

Stream Subsystem
☒ Perennial ☐ Intermittent ☐ Tidal

Stream Type
☐ Coldwater ☒ Warmwater

Stream Origin
☐ Glacial
☐ Non-glacial montane
☐ Swamp and bog
☐ Spring-fed
☒ Mixture of origins
☐ Other ____

Catchment Area 88 km² 34 mi²

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(Page 2 of 2)

(Station # 8) CS2-IX08 (Date 6-18-01)

WATERSHED FEATURES	**Predominant Surrounding Landuse** ☐ Forest ☐ Commercial ☐ Field/Pasture ☐ Industrial ☒ Agricultural ☐ Other _____ ☐ Residential **Local Watershed NPS Pollution** ☐ No evidence ☒ Some potential sources ☐ Obvious sources **Local Watershed Erosion** ☐ None ☒ Moderate ☐ Heavy
RIPARIAN VEGETATION (18 meter buffer)	**Indicate the dominant type and record the dominant species present** ☒ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous **dominant species present** Hackberry, Silver Maple
INSTREAM FEATURES	**Estimated Reach Length** 259 m (850 ft.) **Estimated Stream Width** 5.5 m (18 ft) **Sampling Reach Area** 1425 m² **Area in km² (m²x1000)** 0.001425 km² **Estimated Stream Depth** 0.25 m **Surface Velocity (at thalweg)** — ft/sec (1.5) **Canopy Cover** ☐ Partly open ☒ Partly shaded ☐ Shaded **High Water Mark** 1 m **Proportion of Reach Represented by Stream Morphology Types** ☐ Riffle 20 % ☐ Run 50 % ☐ Pool 30 % **Channelized** ☐ Yes ☒ No **Dam Present** ☐ Yes ☒ No
LARGE WOODY DEBRIS	**LWD** NS m² **Density of LWD** NS m²/km² (LWD/ reach area)
AQUATIC VEGETATION	**Indicate the dominant type and record the dominant species present** ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating ☐ Free floating ☐ Floating Algae ☒ Attached Algae **dominant species present** Cladophora **Portion of the reach with aquatic vegetation** 5 %
WATER QUALITY 0844 6-18-01	**Temperature** 19.90 °C **Specific Conductance** 566 µs/cm **Dissolved Oxygen** 8.35 mg/L **pH** 7.12 **Turbidity** N/A **WQ Instrument Used** YSI 650 MDS Hardness 322 mg/L as $CaCO_3$ **Water Odors** ☒ Normal/None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other_____ **Water Surface Oils** ☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☒ None ☐ Other_____ **Turbidity (if not measured)** ☒ Clear ☐ Slightly turbid ☐ Turbid ☐ Opaque ☐ Stained ☐ Other_____
SEDIMENT/ SUBSTRATE	**Odors** ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ None ☐ Other_____ **Oils** ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse **Deposits** ☐ Sludge ☐ Sawdust ☐ Paper fiber ☒ Sand ☐ Relict shells ☐ Other_____ **Looking at stones which are not deeply embedded, are the undersides black in color?** ☐ Yes ☒ No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			**ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)**		
Substrate Type	**Diameter**	**% Composition in Sampling Reach**	**Substrate Type**	**Characteristic**	**% Composition in Sampling Area**
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	100%
Boulder	> 256 mm (10")	5			
Cobble	64-256 mm (2.5"-10")	15	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	30	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	20			
Clay	< 0.004 mm (slick)				

Attachment 2

OEPA Qualitative Habitat Evaluation Index Field Data Sheets

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 77

River Code: Reach #1 RM: ____ Stream Wildcat Creek
Date 6-12-01 Location Downstream of Dixon St. Bridge
Scorers Initials: MM Comments

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☒-GRAVEL [7]	70	20
☐☐-BOULDER [9]			☐☐-SAND [6]		
☒☐-COBBLE [8]	30	80	☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☐-SILT [2]					

NOTE: (Ignore sludge originating from point-sources; score natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☐-4 or Less [0]

SUBSTRATE ORIGIN: Check ONE (OR 2 & AVERAGE)
☐ -LIMESTONE [1]
☐ -TILLS [1]
☐ -WETLANDS[0]
☐ -HARDPAN [0]
☐ -SANDSTONE [0]
☐ -RIP/RAP [0]
☐ -LACUSTRINE [0]
☒ -SHALE [-1]
☐-COAL FINES [-2]

SUBSTRATE QUALITY: Check ONE (OR 2 & AVERAGE)
SILT:
☐ - *SILT HEAVY [-2]*
☐ -SILT MODERATE [-1]
☒ -SILT NORMAL [0]
☐ -SILT FREE [1]
EMBEDDEDNESS:
☐ -EXTENSIVE [-2]
☐ -MODERATE [-1]
☐ -NORMAL [0]
☐ -NONE [1]

Substrate: 14 (Max 20)

COMMENTS

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ ___UNDERCUT BANKS [1]
☒ ___OVERHANGING VEGETATION [1]
☒ ___SHALLOWS (IN SLOW WATER) [1]
☐ ___ROOTMATS [1]
☒ ___POOLS> 70 cm [2]
☒ ___ROOTWADS [1]
☒ ___BOULDERS [1]
☐ ___OXBOWS, BACKWATERS [1]
☐ ___AQUATIC MACROPHYTES [1]
☒ ___LOGS OR WOODY DEBRIS [1]

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☒ - EXTENSIVE > 75% [11]
☐ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

COMMENTS: 8

Cover: 19 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ - HIGH [4]	☐ - EXCELLENT [7]	☒ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☐ - IMPOUND.
☒ - MODERATE [3]	☒ - GOOD [5]	☐ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☐ - RECOVERING [3]	☐ - LOW [1]	☐ - CANOPY REMOVAL	☐ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 16 (Max 20)

COMMENTS:

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank))
☐☐-WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☒☒-NARROW 5-10 m [2]
☐☐ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank))
☐ ☐-FOREST, SWAMP [3]
☐ ☐-SHRUB OR OLD FIELD [2]
☐ ☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐ ☐-FENCED PASTURE [1]
☐ ☐-CONSERVATION TILLAGE [1]
☒ ☐ -URBAN OR INDUSTRIAL [0]
☐ ☒-OPEN PASTURE,ROWCROP [0]
☐ ☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank))
☐ ☐-NONE/LITTLE [3]
☒ ☒-MODERATE [2]
☐ ☐-HEAVY/SEVERE[1]

Riparian: 4 (Max 10)

COMMENTS:

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)
☒ - >1m [6]
☐ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE)
☐ -POOL WIDTH > RIFFLE WIDTH [2]
☒ -POOL WIDTH = RIFFLE WIDTH [1]
☐ -POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply)
☒ -EDDIES[1]
☒ -FAST[1]
☐ -MODERATE [1]
☐ -SLOW [1]
☐ -TORRENTIAL[-1]
☐ -INTERSTITIAL[-1]
☐ -INTERMITTENT[-2]

Pool/Current: 9 (Max 12)

COMMENTS:

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH
☐ - *Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE
☒ STABLE (e.g.,Cobble, Boulder) [2]
☐-MOD. STABLE (e.g.,Large Gravel) [1]
☐-UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ - NONE [2]
☒ - LOW [1]
☐ - MODERATE [0]
☐ - EXTENSIVE [-1]

☐ - NO RIFFLE [Metric=0]

COMMENTS:

Riffle/Run: 5 (Max 8)

Gradient: 10 (Max 10)

6] GRADIENT (ft/mi): 5.5 DRAINAGE AREA (sq.mi.): 242 approx %POOL: ____ %GLIDE: ____ %RIFFLE: ____ %RUN: ____

*Best areas must be large enough to support a population of riffle-obligate fish species.

Reach # 1

Is Sampling Reach Representative of the Stream (Y/N) Y If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☒
- WWTP ☒
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☒
- CSOs ☒
- Suburban Impacts ☐
- Mining ☐
- Channelization ☐
- Riparian Removal ☒
- Landfills ☐
- Natural ☐
- Dams ☐
- Other Flow Alteration ☐
- Other: _____ ☐

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Subjective Rating (1-10): 5

Aesthetic Rating (1-10): 5

Gradient: ☐ - Low, ☒ - Moderate, ☐ -High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 74

River Code: Reach #2 RM: ____ Stream Wildcat Creek
Date 6-13-01 Location Between RR bridge and Bridge at Dixon Rd
Scorers Initials: M.M. Comments

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☒☒-BOULDER [9]	5	90	☐☒-SAND [6]	70	10
☐☐-COBBLE [8]			☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☐-SILT [2]					

NOTE: (Ignores sludge originating from point-sources; score on natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☐-4 or Less [0]

SUBSTRATE ORIGIN (Check ONE (OR 2 & AVERAGE)): ☐-LIMESTONE [1] ☐-TILLS [1] ☐-WETLANDS[0] ☐-HARDPAN [0] ☐-SANDSTONE [0] ☐-RIP/RAP [0] ☒-LACUSTRINE [0] ☐-SHALE [-1] ☐-COAL FINES [-2]

SUBSTRATE QUALITY (Check ONE (OR 2 & AVERAGE)):
SILT: ☐-*SILT HEAVY [-2]* ☐-SILT MODERATE [-1] ☒-SILT NORMAL [0] ☐-SILT FREE [1]
EMBEDDEDNESS: ☐-EXTENSIVE [-2] ☐-MODERATE [-1] ☒-NORMAL [0] ☐-NONE [1]

Substrate: 15 (Max 20)

COMMENTS:

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ 1 UNDERCUT BANKS [1]
☒ ___ OVERHANGING VEGETATION [1]
☒ ___ SHALLOWS (IN SLOW WATER) [1]
☒ ___ ROOTMATS [1]
☐ ___ POOLS> 70 cm [2]
☒ ___ ROOTWADS [1]
☒ ___ BOULDERS [1]
☐ ___ OXBOWS, BACKWATERS [1]
☐ ___ AQUATIC MACROPHYTES [1]
☒ ___ LOGS OR WOODY DEBRIS [1]

COMMENTS:

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☒ - EXTENSIVE > 75% [11]
☐ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

Cover: 18 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☐ - IMPOUND.
☒ - MODERATE [3]	☒ GOOD [5]	☐ - RECOVERED [4]	☐ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☒ - RECOVERING [3]	☒ - LOW [1]	☐ - CANOPY REMOVAL	☒ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 12 (Max 20)

COMMENTS:

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank)):
☐☐-WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☒☒-NARROW 5-10 m [2]
☐☐ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank)):
☐☐-FOREST, SWAMP [3]
☐☐-SHRUB OR OLD FIELD [2]
☐☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☒☒-URBAN OR INDUSTRIAL [0]
☐☐-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank)):
☐☐-NONE/LITTLE [3]
☐☐-MODERATE [2]
☒☒-HEAVY/SEVERE[1]

Riparian: 2 (Max 10)

COMMENTS:

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!):
☒ - >1m [6]
☐ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE):
☐ -POOL WIDTH > RIFFLE WIDTH [2]
☒ -POOL WIDTH = RIFFLE WIDTH [1]
☐ -POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply):
☒ -EDDIES[1]
☒ -FAST[1]
☒ -MODERATE [1]
☒ -SLOW [1]
☐ -TORRENTIAL[-1]
☐ -INTERSTITIAL[-1]
☐ -INTERMITTENT[-2]

Pool/Current: 11 (Max 12)

COMMENTS:

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH:
☐ - *Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH:
☒ MAX > 50 [2]
☐ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE:
☒ STABLE (e.g.,Cobble, Boulder) [2]
☐ -MOD. STABLE (e.g.,Large Gravel) [1]
☐ -UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ - NONE [2]
☒ - LOW [1]
☐ - MODERATE [0]
☐ - EXTENSIVE [-1]

Riffle/Run: 6 (Max 8)

COMMENTS: ☐ - NO RIFFLE [Metric=0]

Gradient: 10 (Max 10)

6] GRADIENT (ft/mi): 5.5 DRAINAGE AREA (sq.mi.): 242 approx. %POOL: 30 %GLIDE: 50 %RIFFLE: 20 %RUN:

*Best areas must be large enough to support a population of riffle-dwelling fish species.

Reach #2

Is Sampling Reach Representative of the Stream (Y/N) X If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☒
- WWTP ☒
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☒
- Urban Runoff ☒
- CSOs ☐
- Suburban Impacts ☒
- Mining ☐
- Channelization ☐
- Riparian Removal ☒
- Landfills ☒
- Natural ☐
- Dams ☒
- Other Flow Alteration ☐
- Other: _____ ☐

Subjective Rating (1-10)	Aesthetic Rating (1-10)	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
5	8					
		First Sampling Pass				

Gradient: ☐ - Low, ☐ - Moderate, ☐ -High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 70

River Code: Reach #3 RM: ____ Stream Wildcat Creek
Date ____ Location Downstr. of Cont. Kokomo Cr.
Scorers Initials: M. M. Comments ____

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☐☐-BOULDER [9]			☐☒-SAND [6]	>70	<10
☐☒-COBBLE [8]	30	90	☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☐-SILT [2]					

NOTE: (Ignores sludge originating from point-sources; score on natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☐-4 or Less [0]

SUBSTRATE ORIGIN (Check ONE (OR 2 & AVERAGE)): ☐-LIMESTONE [1] ☐-TILLS [1] ☐-WETLANDS[0] ☐-HARDPAN [0] ☐-SANDSTONE [0] ☐-RIP/RAP [0] ☒-LACUSTRINE [0] ☐-SHALE [-1] ☐-COAL FINES [-2]

SUBSTRATE QUALITY (Check ONE (OR 2 & AVERAGE)):
SILT: ☐-*SILT HEAVY [-2]* ☐-SILT MODERATE [-1] ☒-SILT NORMAL [0] ☐-SILT FREE [1]
EMBEDDEDNESS: ☐-EXTENSIVE [-2] ☐-MODERATE [-1] ☐-NORMAL [0] ☐-NONE [1]

COMMENTS ____

Substrate: 14 (Max 20)

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ UNDERCUT BANKS [1]
☒ OVERHANGING VEGETATION [1]
☒ SHALLOWS (IN SLOW WATER) [1]
☐ ROOTMATS [1]
☒ POOLS> 70 cm [2]
☒ ROOTWADS [1]
☒ BOULDERS [1]
☐ OXBOWS, BACKWATERS [1]
☐ AQUATIC MACROPHYTES [1]
☒ LOGS OR WOODY DEBRIS [1]

COMMENTS: ____

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☒ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

Cover: 15 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING ☐ - IMPOUND.
☐ - MODERATE [3]	☐ - GOOD [5]	☒ - RECOVERED [4]	☐ - MODERATE [2]	☐ - RELOCATION ☐ - ISLANDS
☒ - LOW [2]	☒ - FAIR [3]	☐ - RECOVERING [3]	☒ - LOW [1]	☐ - CANOPY REMOVAL ☐ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING ☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: ____

Channel: 10 (Max 20)

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank)):
☐☐-WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☒☒-NARROW 5-10 m [2]
☐☐ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank)):
☐☐-FOREST, SWAMP [3]
☐☐-SHRUB OR OLD FIELD [2]
☐☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☒☒-URBAN OR INDUSTRIAL [0]
☐☐-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank)):
☐☐-NONE/LITTLE [3]
☒☒-MODERATE [2]
☐☐-HEAVY/SEVERE[1]

COMMENTS: ____

Riparian: 4 (Max 10)

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!):
☒ - >1m [6]
☐ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE):
☐-POOL WIDTH > RIFFLE WIDTH [2]
☒-POOL WIDTH = RIFFLE WIDTH [1]
☐-POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply):
☒-EDDIES[1]
☒-FAST[1]
☒-MODERATE [1]
☒-SLOW [1]
☐-TORRENTIAL[-1]
☐-INTERSTITIAL[-1]
☐-INTERMITTENT[-2]

COMMENTS: ____

Pool/Current: 11 (Max 12)

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH:
☐ - *Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH:
☒ - MAX > 50 [2]
☐ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE:
☒-STABLE (e.g.,Cobble, Boulder) [2]
☐-MOD. STABLE (e.g.,Large Gravel) [1]
☐-UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ - NONE [2]
☒ - LOW [1]
☐ - MODERATE [0]
☐ - EXTENSIVE [-1]

COMMENTS: ____ ☐ - NO RIFFLE [Metric=0]

Riffle/Run: 6 (Max 8)

6] GRADIENT (ft/mi): 5.0 DRAINAGE AREA (sq.mi.): 242 approx %POOL: ____ %GLIDE: ____ %RIFFLE: 15 %RUN: 85

Gradient: 10 (Max 10)

*Best areas must be large enough to support a population of riffle-obligate fish species.

Reach #3

Is Sampling Reach Representative of the Stream (Y/N) Y If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☐
- WWTP ☐
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☐
- CSOs ☐
- Suburban Impacts ☐
- Mining ☐
- Channelization ☐
- Riparian Removal ☐
- Landfills ☐
- Natural ☐
- Dams ☐
- Other Flow Alteration ☐
- Other: _____ ☐

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Subjective Rating (1-10): 5

Aesthetic Rating (1-10): 5

Gradient: ☐ - Low, ☐ - Moderate, ☐ - High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 42

River Code: Reach #4 RM: ____ Stream Kokomo Ck.
Date 6-15-00 Location Upstr of Conf. with Wildcat Ck., Downst. Highland Park
Scorers Initials: M.M. Comments

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☐☐-BOULDER [9]			☐☒-SAND [6]	60	20
☐☐-COBBLE [8]			☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☒-SILT [2]	90	10			

NOTE: (Ignores sludge originating from point-sources; score on natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☐-4 or Less [0]

COMMENTS

SUBSTRATE ORIGIN (Check ONE (OR 2 & AVERAGE)): ☐-LIMESTONE [1] ☐-TILLS [1] ☐-WETLANDS[0] ☐-HARDPAN [0] ☐-SANDSTONE [0] ☐-RIP/RAP [0] ☒-LACUSTRINE [0] ☐-SHALE [-1] ☐-COAL FINES [-2]

SUBSTRATE QUALITY (Check ONE (OR 2 & AVERAGE)):
SILT: ☐-*SILT HEAVY [-2]* ☒-SILT MODERATE [-1] ☐-SILT NORMAL [0] ☐-SILT FREE [1]
EMBEDDED NESS: ☐-EXTENSIVE [-2] ☒-MODERATE [-1] ☐-NORMAL [0] ☐-NONE [1]

Substrate: 6 (Max 20)

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ UNDERCUT BANKS [1]
☒ OVERHANGING VEGETATION [1]
☒ SHALLOWS (IN SLOW WATER) [1]
☒ ROOTMATS [1]
☐ POOLS> 70 cm [2]
☒ ROOTWADS [1]
☐ BOULDERS [1]
☐ OXBOWS, BACKWATERS [1]
☐ AQUATIC MACROPHYTES [1]
☒ LOGS OR WOODY DEBRIS [1]

COMMENTS:

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☐ - MODERATE 25-75% [7]
☒ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

Cover: 9 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☐ - IMPOUND.
☐ - MODERATE [3]	☐ - GOOD [5]	☐ - RECOVERED [4]	☐ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☒ - RECOVERING [3]	☒ - LOW [1]	☐ - CANOPY REMOVAL	☐ - LEVEED
☒ - NONE [1]	☒ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 5 (Max 20)

COMMENTS:

4]. RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank)):
☐☐-WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☐☐-NARROW 5-10 m [2]
☒☒ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank)):
☐☐-FOREST, SWAMP [3]
☐☐-SHRUB OR OLD FIELD [2]
☐☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☒☒-URBAN OR INDUSTRIAL [0]
☐☐-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank)):
☐☐-NONE/LITTLE [3]
☐☐-MODERATE [2]
☒☒-HEAVY/SEVERE[1]

Riparian: 2 (Max 10)

COMMENTS:

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!):
☐ - >1m [6]
☒ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE):
☐-POOL WIDTH > RIFFLE WIDTH [2]
☒-POOL WIDTH = RIFFLE WIDTH [1]
☐-POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply):
☐-EDDIES[1]
☒-FAST[1]
☒-MODERATE [1]
☒-SLOW [1]
☐-TORRENTIAL[-1]
☐-INTERSTITIAL[-1]
☐-INTERMITTENT[-2]

COMMENTS:

Pool/Current: 8 (Max 12)

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH:
☐ - Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH:
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE:
☒ STABLE (e.g.,Cobble, Boulder) [2]
☐-MOD. STABLE (e.g.,Large Gravel) [1]
☐-UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ - NONE [2]
☐ - LOW [1]
☒ - MODERATE [0]
☐ - EXTENSIVE [-1]

COMMENTS: ☐ - NO RIFFLE [Metric=0]

Riffle/Run: 4 (Max 8)

Gradient: 8 (Max 10)

6] GRADIENT (ft/mi): 12 DRAINAGE AREA (sq.mi.): 34 mi²

%POOL: 60 %GLIDE: ____
%RIFFLE: 20 %RUN: 20

*Best areas must be large enough to support a population of riffle-obligate fish species.

Reach #4

Is Sampling Reach Representative of the Stream (Y/N) Y If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☐
- WWTP ☐
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☐
- CSOs ☐
- Suburban Impacts ☐
- Mining ☐
- Channelization ☐
- Riparian Removal ☐
- Landfills ☐
- Natural ☐
- Dams ☐
- Other Flow Alteration ☐
- Other: _____ ☐

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Subjective Rating (1-10): 2

Aesthetic Rating (1-10): 2

Gradient: ☐ - Low, ☐ - Moderate, ☐ -High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: ____

River Code: Reach #5 RM: ____ Stream Wildcat Cr.
Date 6-14-01 Location upstr. of confluence with Kokomo Cr., Downst. of Markland Ave
Scorers Initials: M.M. Comments ____

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]	____	____	☐☒-GRAVEL [7]	30	70
☐☐-BOULDER [9]	____	____	☐☒-SAND [6]	70	30
☐☐-COBBLE [8]	____	____	☐☐-BEDROCK[5]	____	____
☐☐-HARDPAN [4]	____	____	☐☐-DETRITUS[3]	____	____
☐☐-MUCK [2]	____	____	☐☐-ARTIFICIAL[0]	____	____
☐☐-SILT [2]	____	____			

NOTE: (Ignores sludge originating from point-sources; score natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☐-4 or Less [0]

COMMENTS ____

SUBSTRATE ORIGIN — Check ONE (OR 2 & AVERAGE)
☐ -LIMESTONE [1]
☐ -TILLS [1]
☐ -WETLANDS[0]
☐ -HARDPAN [0]
☐ -SANDSTONE [0]
☐ -RIP/RAP [0]
☒ -LACUSTRINE [0]
☐ -SHALE [-1]
☐ -COAL FINES [-2]

SUBSTRATE QUALITY — Check ONE (OR 2 & AVERAGE)
SILT:
☐ -*SILT HEAVY [-2]*
☒ -SILT MODERATE [-1]
☐ -SILT NORMAL [0]
☐ -SILT FREE [1]
EMBEDDEDNESS:
☐ -EXTENSIVE [-2]
☐ -MODERATE [-1]
☐ -NORMAL [0]
☐ -NONE [1]

Substrate: 12 (Max 20)

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ ___UNDERCUT BANKS [1]
☒ ___OVERHANGING VEGETATION [1]
☒ ___SHALLOWS (IN SLOW WATER) [1]
☒ ___ROOTMATS [1]
☐ ___POOLS> 70 cm [2]
☐ ___ROOTWADS [1]
☒ ___BOULDERS [1]
☐ ___OXBOWS, BACKWATERS [1]
☐ ___AQUATIC MACROPHYTES [1]
☒ ___LOGS OR WOODY DEBRIS [1]

COMMENTS: ____

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☒ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

Cover: 13 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☐ - IMPOUND.
☐ - MODERATE [3]	☐ - GOOD [5]	☐ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☒ - RECOVERING [3]	☐ - LOW [1]	☐ - CANOPY REMOVAL	☒ - LEVEED
☒ - NONE [1]	☒ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 7 (Max 20)

COMMENTS: ____

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH — L R (Per Bank)
☐☐ -WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☒☒ -NARROW 5-10 m [2]
☐☐ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) — L R (Most Predominant Per Bank)
☐ ☐-FOREST, SWAMP [3]
☐ ☐-SHRUB OR OLD FIELD [2]
☐ ☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐ ☐ -FENCED PASTURE [1]
☐ ☐-CONSERVATION TILLAGE [1]
☒☒-URBAN OR INDUSTRIAL [0]
☐ ☐ -OPEN PASTURE,ROWCROP [0]
☐ ☐ -MINING/CONSTRUCTION [0]

BANK EROSION — L R (Per Bank)
☐ ☐-NONE/LITTLE [3]
☐ ☐-MODERATE [2]
☒☒-HEAVY/SEVERE[1]

Riparian: 2 (Max 10)

COMMENTS: ____

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)
☐ - >1m [6]
☒ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE)
☐ -POOL WIDTH > RIFFLE WIDTH [2]
☒ -POOL WIDTH = RIFFLE WIDTH [1]
☐ -POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply)
☒ -EDDIES[1]
☒ -FAST[1]
☒ -MODERATE [1]
☐ -SLOW [1]
☐ -TORRENTIAL[-1]
☐ -INTERSTITIAL[-1]
☐ -INTERMITTENT[-2]

Pool/Current: 8 (Max 12)

COMMENTS: ____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH
☐ - *Best Areas >10 cm [2]
☐ - Best Areas 5-10 cm[1]
☒ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE
☒ STABLE (e.g.,Cobble, Boulder) [2]
☐ -MOD. STABLE (e.g.,Large Gravel) [1]
☐ -UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ - NONE [2]
☐ - LOW [1]
☒ - MODERATE [0]
☐ - EXTENSIVE [-1]

Riffle/Run: 3 (Max 8)

COMMENTS: ____ ☐ - NO RIFFLE [Metric=0]

Gradient: 10 (Max 10)

6] GRADIENT (ft/mi): 5.0 DRAINAGE AREA (sq.mi.): 242 Approx

%POOL:	10	%GLIDE:	
%RIFFLE:	10	%RUN:	80

*Best areas must be large enough to support a population of riffle-dwelling fish species.

Reach #5

Is Sampling Reach Representative of the Stream (Y/N) X If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☒
- WWTP ☒
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☒
- CSOs ☒
- Suburban Impacts ☒
- Mining ☐
- Channelization ☒
- Riparian Removal ☒
- Landfills ☒
- Natural ☐
- Dams ☒
- Other Flow Alteration ☐
- Other: _____ ☐

Subjective Rating (1-10)	Aesthetic Rating (1-10)
3	3

Gradient: ☐ - Low, ☐ - Moderate, ☐ - High

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 59

River Code: Reach #6 RM: ____ Stream Wildcat Creek
Date 6-19-01 Location upstream of Markland and below Phillips St
Scorers Initials: MM Comments

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☐☐-BOULDER [9]			☒☒-SAND [6]	80	20
☐☐-COBBLE [8]			☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☒☒-SILT [2]	100	0			

NOTE: (Ignores ludge originating from point-sources; score on natural substrates)

NUMBER OF SUBSTRATE TYPES: ☒-5 or More [2] ☐-4 or Less [0]

SUBSTRATE ORIGIN — Check ONE (OR 2 & AVERAGE):
☐ -LIMESTONE [1]
☐ -TILLS [1]
☐ -WETLANDS[0]
☐ -HARDPAN [0]
☐ -SANDSTONE [0]
☐ -RIP/RAP [0]
☒ -LACUSTRINE [0]
☐ -SHALE [-1]
☐-COAL FINES [-2]

SUBSTRATE QUALITY — Check ONE (OR 2 & AVERAGE):
SILT:
☒ -*SILT HEAVY [-2]*
☐ -SILT MODERATE [-1]
☐ -SILT NORMAL [0]
☐ -SILT FREE [1]
EMBEDDEDNESS:
☐ -EXTENSIVE [-2]
☐ -MODERATE [-1]
☒ -NORMAL [0]
☐ -NONE [1]

Substrate: 8 (Max 20)

COMMENTS:

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ UNDERCUT BANKS [1]
☒ OVERHANGING VEGETATION [1]
☒ SHALLOWS (IN SLOW WATER) [1]
☐ ROOTMATS [1]
☒ POOLS> 70 cm [2]
☒ ROOTWADS [1]
☒ BOULDERS [1]
☐ OXBOWS, BACKWATERS [1]
☐ AQUATIC MACROPHYTES [1]
☒ LOGS OR WOODY DEBRIS [1]

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☒ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

COMMENTS:

Cover: 15 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☒ - IMPOUND.
☐ - MODERATE [3]	☐ - GOOD [5]	☐ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☒ - RECOVERING [3]	☐ - LOW [1]	☒ - CANOPY REMOVAL	☐ - LEVEED
☒ - NONE [1]	☒ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 7 (Max 20)

COMMENTS:

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank)):
☐☐-WIDE > 50m [4]
☐☐ - MODERATE 10-50m [3]
☐☐-NARROW 5-10 m [2]
☒☒ - VERY NARROW <5 m[1]
☐☐ - NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank)):
☐☐-FOREST, SWAMP [3]
☐☐-SHRUB OR OLD FIELD [2]
☒☒-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☐☐-URBAN OR INDUSTRIAL [0]
☐☐-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank)):
☐☐-NONE/LITTLE [3]
☒☒-MODERATE [2]
☐☐-HEAVY/SEVERE[1]

Riparian: 4 (Max 10)

COMMENTS:

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!):
☒ - >1m [6]
☐ - 0.7-1m [4]
☐ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE):
☐-POOL WIDTH > RIFFLE WIDTH [2]
☒-POOL WIDTH = RIFFLE WIDTH [1]
☐-POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply):
☒-EDDIES[1]
☒-FAST[1]
☒-MODERATE [1]
☒-SLOW [1]
☐-TORRENTIAL[-1]
☐-INTERSTITIAL[-1]
☐-INTERMITTENT[-2]

COMMENTS:

Pool/Current: 11 (Max 12)

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH:
☐ -*Best Areas >10 cm [2]
☐ - Best Areas 5-10 cm[1]
☒ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH:
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE:
☒-STABLE (e.g.,Cobble, Boulder) [2]
☐-MOD. STABLE (e.g.,Large Gravel) [1]
☐-UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ - NONE [2]
☒ - LOW [1]
☐ - MODERATE [0]
☐ - EXTENSIVE [-1]

COMMENTS:
☐ - NO RIFFLE [Metric=0]

Riffle/Run: 4 (Max 8)

Gradient: 10 (Max 10)

6] GRADIENT (ft/mi): 5.0 DRAINAGE AREA (sq.mi.): 242 Approx

%POOL: 40 %GLIDE:
%RIFFLE: 10 %RUN: 60

*Best areas must be large enough to support a population of riffle-obligate fish species.

Reach #6

Is Sampling Reach Representative of the Stream (Y/N) Y If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☒
- WWTP ☐
- Ag ☐
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☒
- CSOs ☒
- Suburban Impacts ☒
- Mining ☐
- Channelization ☒
- Riparian Removal ☒
- Landfills ☐
- Natural ☐
- Dams ☒
- Other Flow Alteration ☐
- Other: _____ ☐

Subjective Rating (1-10)	Aesthetic Rating (1-10)
2	2

Gradient: ☐ - Low, ☐ - Moderate, ☐ - High

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 70

River Code: Reach #7 RM: ____ Stream Wildcat Creek
Date 6-16-01 Location Downstr of Kokomo Res.
Scorers Initials: MM Comments

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☐☒-BOULDER [9]		100	☐☐-SAND [6]		
☐☒-COBBLE [8]		100	☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☐-SILT [2]					

NOTE: (Ignores sludge originating from point-sources; score natural substrates)

NUMBER OF SUBSTRATE TYPES: ☐-5 or More [2] ☒-4 or Less [0]

SUBSTRATE ORIGIN — Check ONE (OR 2 & AVERAGE):
☐ -LIMESTONE [1]
☐ -TILLS [1]
☐ -WETLANDS[0]
☐ -HARDPAN [0]
☐ -SANDSTONE [0]
☐ -RIP/RAP [0]
☐ -LACUSTRINE [0]
☒ -SHALE [-1]
☐ -COAL FINES [-2]

SUBSTRATE QUALITY — Check ONE (OR 2 & AVERAGE):
SILT:
☐ -*SILT HEAVY [-2]*
☐ -SILT MODERATE [-1]
☐ -SILT NORMAL [0]
☒ -SILT FREE [1]
EMBEDDEDNESS:
☐ -EXTENSIVE [-2]
☐ -MODERATE [-1]
☒ -NORMAL [0]
☐ -NONE [1]

Substrate: 17 (Max 20)

COMMENTS

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)
☒ ___UNDERCUT BANKS [1]
☒ ___OVERHANGING VEGETATION [1]
☒ ___SHALLOWS (IN SLOW WATER) [1]
☐ ___ROOTMATS [1]
☐ ___POOLS> 70 cm [2]
☒ ___ROOTWADS [1]
☒ ___BOULDERS [1]
☐ ___OXBOWS, BACKWATERS [1]
☐ ___AQUATIC MACROPHYTES [1]
☒ ___LOGS OR WOODY DEBRIS [1]

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☒ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

COMMENTS:

Cover: 13 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING
☐ - MODERATE [3]	☒ - GOOD [5]	☒ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION
☒ - LOW [2]	☐ - FAIR [3]	☐ - RECOVERING [3]	☐ - LOW [1]	☒ - CANOPY REMOVAL
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING
				☐ - ONE SIDE CHANNEL MODIFICATIONS
				☒ - IMPOUND.
				☐ - ISLANDS
				☒ - LEVEED
				☐ - BANK SHAPING

COMMENTS:

Channel: 13 (Max 20)

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH — L R (Per Bank)
☐☐-WIDE > 50m [4]
☐☒- MODERATE 10-50m [3]
☒☐-NARROW 5-10 m [2]
☐☐- VERY NARROW <5 m[1]
☐☐- NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) — L R (Most Predominant Per Bank)
☐☐-FOREST, SWAMP [3]
☒☒-SHRUB OR OLD FIELD [2]
☐☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☐☐-URBAN OR INDUSTRIAL [0]
☐☐-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION — L R (Per Bank)
☐☐-NONE/LITTLE [3]
☐☒-MODERATE [2]
☒☐-HEAVY/SEVERE[1]

COMMENTS:

Riparian: 7 (Max 10)

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)
☐ - >1m [6]
☐ - 0.7-1m [4]
☒ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE)
☒ -POOL WIDTH > RIFFLE WIDTH [2]
☐ -POOL WIDTH = RIFFLE WIDTH [1]
☐ -POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply)
☒ -EDDIES[1]
☒ -FAST[1]
☒ -MODERATE [1]
☒ -SLOW [1]
☒ -TORRENTIAL[-1]
☐ -INTERSTITIAL[-1]
☐ -INTERMITTENT[-2]

COMMENTS:

Pool/Current: 7 (Max 12)

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH
☐ - Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE
☒ -STABLE (e.g.,Cobble, Boulder) [2]
☐ -MOD. STABLE (e.g.,Large Gravel) [1]
☐ -UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ - NONE [2]
☒ - LOW [1]
☐ - MODERATE [0]
☐ - EXTENSIVE [-1]

COMMENTS: ☐ - NO RIFFLE [Metric=0]

Riffle/Run: 5 (Max 8)

6] GRADIENT (ft/mi): ____ DRAINAGE AREA (sq.mi.): 242

%POOL: 50 %GLIDE: ____
%RIFFLE: 20 %RUN: 30

Gradient: 8 (Max 10)

*Best areas must be large enough to support a population of riffle-dwelling fish species.

Reach #7

Is Sampling Reach Representative of the Stream (Y/N) N If Not, Explain: Dam present

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Subjective Rating (1-10): 5

Aesthetic Rating (1-10): 5

Gradient: ☐ - Low, ☐ - Moderate, ☐ - High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Major Suspected Sources of Impacts (Check All That Apply):

- None ☐
- Industrial ☐
- WWTP ☐
- Agr. ☒
- Livestock ☐
- Silviculture ☐
- Construction ☐
- Urban Runoff ☐
- CSOs ☐
- Suburban Impacts ☐
- Mining ☐
- Channelization ☐
- Riparian Removal ☐
- Landfills ☐
- Natural ☐
- Dams ☒
- Other Flow Alteration ☐
- Other: _____ ☐

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

OhioEPA Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 72

River Code: Reach #8 RM: ____ Stream Little Deer Ck
Date 6-18-01 Location upstream of Hy 29 bridge
Scorers Initials: ____ Comments ____

1] SUBSTRATE (Check *ONLY* Two Substrate *TYPE BOXES; Estimate % present*);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDR /SLBS[10]			☐☐-GRAVEL [7]		
☐☐-BOULDER [9]			☒☒-SAND [6]	80	20
☒☐-COBBLE [8]	20	80	☐☐-BEDROCK[5]		
☐☐-HARDPAN [4]			☐☐-DETRITUS[3]		
☐☐-MUCK [2]			☐☐-ARTIFICIAL[0]		
☐☐-SILT [2]					

NOTE: (Ignores sludge originating from point-sources; scores natural substrates)

NUMBER OF SUBSTRATE TYPES: ☒-5 or More [2] ☐-4 or Less [0]

SUBSTRATE ORIGIN (Check ONE (OR 2 & AVERAGE)): ☐-LIMESTONE [1] ☐-TILLS [1] ☐-WETLANDS[0] ☐-HARDPAN [0] ☐-SANDSTONE [0] ☐-RIP/RAP [0] ☒-LACUSTRINE [0] ☐-SHALE [-1] ☐-COAL FINES [-2]

SILT: ☐-SILT HEAVY [-2] ☒-SILT MODERATE [-1] ☐-SILT NORMAL [0] ☐-SILT FREE [1]

EMBEDDEDNESS: ☐-EXTENSIVE [-2] ☐-MODERATE [-1] ☒-NORMAL [0] ☐-NONE [1]

SUBSTRATE QUALITY (Check ONE (OR 2 & AVERAGE)): ☐-SILT HEAVY [-2]

Substrate: 15 (Max 20)

COMMENTS ____

2] INSTREAM COVER (see back for instructions for additional cover scoring method)

TYPE: (Check *All* That Apply)

☒ UNDERCUT BANKS [1]
☒ OVERHANGING VEGETATION [1]
☒ SHALLOWS (IN SLOW WATER) [1]
☒ ROOTMATS [1]
☐ POOLS> 70 cm [2]
☒ ROOTWADS [1]
☒ BOULDERS [1]
☐ OXBOWS, BACKWATERS [1]
☒ AQUATIC MACROPHYTES [1]
☒ LOGS OR WOODY DEBRIS [1]

COMMENTS: ____

AMOUNT: (Check *ONLY* One or check 2 and *AVERAGE*)
☐ - EXTENSIVE > 75% [11]
☒ - MODERATE 25-75% [7]
☐ - SPARSE 5-25% [3]
☐ - NEARLY ABSENT < 5%[1]

Cover: 15 (Max 20)

3] CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☒ - HIGH [4]	☐ - EXCELLENT [7]	☒ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING	☐ - IMPOUND.
☐ - MODERATE [3]	☒ - GOOD [5]	☐ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION	☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☐ - RECOVERING [3]	☐ - LOW [1]	☐ - CANOPY REMOVAL	☐ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING	☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS	

Channel: 15 (Max 20)

COMMENTS: ____

4]. RIPARIAN ZONE AND BANK EROSION-(check ONE box per bank or check 2 and AVERAGE per bank) ★River Right Looking Downstream★

RIPARIAN WIDTH (L R (Per Bank)):
☐☐-WIDE > 50m [4]
☒☒- MODERATE 10-50m [3]
☐☐-NARROW 5-10 m [2]
☐☐- VERY NARROW <5 m[1]
☐☐- NONE [0]

FLOOD PLAIN QUALITY (*PAST 100 Meter RIPARIAN*) (L R (Most Predominant Per Bank)):
☐☐-FOREST, SWAMP [3]
☐☐-SHRUB OR OLD FIELD [2]
☐☐-RESIDENTIAL,PARK,NEW FIELD [1]
☐☐-FENCED PASTURE [1]
☐☐-CONSERVATION TILLAGE [1]
☐☐-URBAN OR INDUSTRIAL [0]
☒☒-OPEN PASTURE,ROWCROP [0]
☐☐-MINING/CONSTRUCTION [0]

BANK EROSION (L R (Per Bank)):
☐☐-NONE/LITTLE [3]
☒☒-MODERATE [2]
☐☐-HEAVY/SEVERE[1]

Riparian: 5 (Max 10)

COMMENTS: ____

5.]POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!):
☐ - >1m [6]
☐ - 0.7-1m [4]
☒ - 0.4-0.7m [2]
☐ - 0.2-0.4m [1]
☐ - < 0.2m [POOL=0]

MORPHOLOGY (Check 1 or 2 & AVERAGE):
☒-POOL WIDTH > RIFFLE WIDTH [2]
☐-POOL WIDTH = RIFFLE WIDTH [1]
☐-POOL WIDTH< RIFFLE W. [0]

CURRENT VELOCITY [POOLS & RIFFLES!] (Check *All* That Apply):
☒-EDDIES[1]
☒-FAST[1]
☒-MODERATE [1]
☒-SLOW [1]
☐-TORRENTIAL[-1]
☐-INTERSTITIAL[-1]
☐-INTERMITTENT[-2]

Pool/Current: 8 (Max 12)

COMMENTS: ____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH:
☐ - *Best Areas >10 cm [2]
☒ - Best Areas 5-10 cm[1]
☐ - Best Areas < 5 cm [RIFFLE=0]

RUN DEPTH:
☐ - MAX > 50 [2]
☒ - MAX < 50[1]

RIFFLE/RUN SUBSTRATE:
☒-STABLE (e.g.,Cobble, Boulder) [2]
☐-MOD. STABLE (e.g.,Large Gravel) [1]
☐-UNSTABLE (Fine Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ - NONE [2]
☐ - LOW [1]
☒ - MODERATE [0]
☐ - EXTENSIVE [-1]

Riffle/Run Gradient: 4 (Max 8)

COMMENTS: ____ ☐ - NO RIFFLE [Metric=0]

6] GRADIENT (ft/mi): 8.65 DRAINAGE AREA (sq.mi.): 34 m.²

%POOL: 30 %GLIDE: ____
%RIFFLE: 20 %RUN: 50

Gradient: 10 (Max 10)

*Best areas must be large enough to support a population of riffle-obligate fish species.

Reach #8

Is Sampling Reach Representative of the Stream (Y/N) Y If Not, Explain: _____

Major Suspected Sources of Impacts (Check All That Apply):
- None ☐
- Industrial ☐
- WWTP ☐
- Ag ☒
- Livestock ☒
- Silviculture ☐
- Construction ☐
- Urban Runoff ☐
- CSOs ☐
- Suburban Impacts ☐
- Mining ☐
- Channelization ☐
- Riparian Removal ☐
- Landfills ☐
- Natural ☐
- Dams ☐
- Other Flow Alteration ☐
- Other: _____ ☐

	Gear:	Distance:	Water Clarity:	Water Stage:	Canopy -% Open
First Sampling Pass					

Subjective Rating (1-10): 8

Aesthetic Rating (1-10): 8

Gradient: ☐ - Low, ☐ - Moderate, ☐ -High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area Width	Entrench. Ratio

Stream Drawing:

Instructions for Scoring the Alternate Cover Metric: Each Cover Type Should Receive a Score of Between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality cover include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Attachment 3

Benthic Macroinvertebrates Collected from Wildcat, Kokomo, and Little Deer Creeks, June 2001

ATTACHMENT 3

Benthic Macroinvertebrates Collected from Wildcat, Kokomo, and Little Deer Creeks, June 2001

SPECIES	T.V.**	F.F.G.***	Station location CS2-IX01	Station location CS2-IX02	Station location CS2-IX03	Station location CS2-IX05	Station location CS2-IX06	Station location CS2-IX07	Station location CS2-IX04	Station location CS2-IX08
PLATYHELMINTHES										
Turbellaria										
Tricladida										
Planariidae										
Dugesia tigrina	*7.23		470	40	100	870	1400	10		200
MOLLUSCA										
Bivalvia										
Veneroida										
Corbiculidae										
Corbicula fluminea	4	FC	12							
Sphaeriidae	8	FC								
Musculium transversum	8	FC	232	52	15	1902	103		3	
Sphaerium sp.	5	FC						21		20
Gastropoda										
Mesogastropoda										
Pleuroceridae										
Elimia sp.	5	SC			1					1
Viviparidae										
Campeloma crassula	7	SC					1			
Basommatophora										
Ancylidae		SC								
Ferrissia rivularis	7	SC	10	40	1					
Physidae										
Physella sp.	8	CG				10	801	10	51	
Planorbidae	6	SC								
Menetus dilatatus	*8.23	SC	1	10		10				
ANNELIDA										
Oligochaeta	10	CG								
Haplotaxida										
Enchytraidae	10	CG								
Lumbricidae		CG								
Naididae	8	CG	572	272	700	405	27450		1050	20
Nais sp.	8	CG	143	218	500	1			700	
Nais bretscheri	6	CG						99		10
Ophidonais serpentina	6	CG		54			1525	50	150	
Pristina sp.	8	CG			400					
Slavina appendiculata	6	CG	72	164		403			100	
Tubificidae w.o.h.c.	10	CG	572	382	1200	1207	1525	742		20
Limnodrilus hoffmeisteri	10	CG	72		100			99		10
Hirudinea	8	P								
Branchiobdellida			60	10						
Erpobdellidae	8	P	240	90		60	400	200		
ARTHROPODA										
Arachnoidea										
Acariformes										
Lebertiidae										
Lebertia sp.	*5.53	-							10	
Crustacea										
Cladocera										
Chydoridae	-								10	
Daphnidae	-									
Daphnia sp.							11			
Isopoda										
Asellidae	8	SH								
Caecidotea sp.	6	CG	70	260	300	10	200		200	
Amphipoda										
Talitridae	8									
Hyalella azteca	5	CG	20					10	4	11
Decapoda										
Cambaridae			11	4		4		10		
Orconectes sp.	6	SH	1		5		2		4	12
Insecta										
Collembola										
Isotomidae									50	
Ephemeroptera										
Baetidae	4	CG								
Baetis sp.	4	CG		11						644
Baetis intercalaris	7	CG	51		101	30			50	
Caenidae	7	CG								
Caenis sp.	6	CG					200			11
Heptageniidae	4	SC		10						10
Leucrocuta sp.	1	SC				10				11
Stenacron interpunctatum	4	SC				10				20
Stenonema sp.	4	SC								10
Isonychiidae	2	FC								
Isonychia sp.	3	FC				2	1			93
Tricorythidae	4	CG								
Tricorythodes sp.	5	CG								10

ATTACHMENT 3

Benthic Macroinvertebrates Collected from Wildcat, Kokomo, and Little Deer Creeks, June 2001

SPECIES	T.V.**	F.F.G.**	Station location CS2-IX01	Station location CS2-IX02	Station location CS2-IX03	Station location CS2-IX05	Station location CS2-IX06	Station location CS2-IX07	Station location CS2-IX04	Station location CS2-IX08
Megaloptera										
Corydalidae	0	P								
Corydalus cornutus	6	P								2
Sialidae	4	P								
Sialis sp.	4	P		11		71				20
Trichoptera										
Hydropsychidae	4	FC	1101	655	406	51	702		50	220
Ceratopsyche morosa	6	FC	638	256	2107			10		343
Cheumatopsyche sp.	6	FC	1452	1023	3928	587	706	10	205	1769
Hydropsyche sp.	5	FC				10				131
Hydroptilidae	4	PI				10				
Hydroptila sp.	2	FC	261	10	200	150	200		1430	90
Coleoptera										
Elmidae	5	CG								
Dubiraphia sp.	5	SC								10
Optioservus sp.	4	SC								240
Stenelmis sp.	7	SC	110	60	2200	140	200	20	20	1993
Haliplidae										
Peltodytes sp.	5	SH						10		
Psephenidae	4	SC								
Psephenus herricki	4	SC								110
Diptera										
Ceratopogonidae	5	P								
Bezzia/Palpomyia gp.	6	P								10
Chironomidae			451	40	600	181	300	220	650	70
Ablabesmyia mallochi	6	P							100	
Ablabesmyia rhamphe gp.	6	P							51	
Cardiocladius obscurus	5	P					150			
Chironomus sp.	10	CG		16		40	300	21		
Cricotopus sp.	7	CG	2080	980	2500	727	2700	1165	2503	22
Cricotopus bicinctus	10	CG	256	16	200	162		229	600	
Cricotopus trifascia	6	CG	475	79	800	930	3751	499	504	156
Cryptochironomus fulvus	8	P						42		22
Dicrotendipes sp.	6	CG	73			40		21	50	
Endochironomus sp.	6	SH				203				
Glyptotendipes sp.	10	FC		111	200	526	1351		401	
Microtendipes sp.	6	CG				40			50	558
Nanocladius sp.	3	CG		16	100	242	600		400	
Parametriocnemus lundbecki	5	CG								68
Paratendipes sp.	3	CG		16						
Pentaneura sp.	3	CG								22
Phaenopsectra sp.	4	SC				40				
Polypedilum flavum (convictum)	6	SH	365	111	500	404	5251		450	648
Polypedilum halterale	4	SH								112
Polypedilum illinoense	6	SH	182	47	300	323			500	
Pseudochironomus sp.	5	CG	73							
Rheocricotopus robacki	6	CG		32	100					45
Rheotanytarsus sp.	6	FC				121	750	42		112
Tanytarsus sp.	7	FC	110	63	200					178
Thienemanniella xena	2	CG		32	200	81			300	
Thienemannimyia gp.	6	P	36	63		162	150	62	51	112
Tvetenia bavarica gp.	5	CG			100					156
Zavrelia sp.	4	CG								22
Empididae	6	P					100			
Hemerodromia sp.	6	P		10	100		101			
Simuliidae	6	FC	20				1000			
Simulium sp.	6	FC	530	310	5400	650	27200	10	3250	180
Tipulidae	3	SH								
Antocha sp.	5	CG								30
Hexatoma sp.	4	P								11
Tipula sp.	4	SH								1
TOTAL NO. OF ORGANISMS			**10822**	**5574**	**23564**	**10825**	**79131**	**3612**	**13947**	**8576**
TAXA RICHNESS			**34**	**37**	**31**	**39**	**31**	**24**	**32**	**48**
EPT INDEX			**5**	**6**	**5**	**9**	**5**	**2**	**4**	**13**
EPT TAXA ABUNDANCE			**3503**	**1965**	**6742**	**860**	**1809**	**20**	**1735**	**3362**
RATIO OF EPT/TOTAL			**0.32**	**0.35**	**0.29**	**0.08**	**0.02**	**0.01**	**0.12**	**0.39**
PERCENT DOMINANT TAXA			**19.22%**	**18.35%**	**22.92%**	**17.57%**	**34.69%**	**32.25%**	**23.30%**	**23.24%**
EPT/CHIRONOMIDAE			**0.85**	**1.21**	**1.16**	**0.20**	**0.12**	**0.01**	**0.26**	**1.46**
CHIRONOMIDAE ABUNDANCE			**4101**	**1622**	**5800**	**4222**	**15303**	**2301**	**6610**	**2303**
TOTAL NO. INDIVIDUALS TO SUB SAMPLE SIZE			**1082.2**	**557.4**	**235.64**	**1082.5**	**791.31**	**361.2**	**278.94**	**857.6**
HILSENHOFF BIOTIC INDEX			**6.54**	**6.53**	**6.54**	**7.17**	**6.90**	**7.78**	**6.15**	**5.84**

Attachment 4

Fish Species Data from Wildcat, Kokomo, and Little Deer Creeks, June 2001

ATTACHMENT 4

Fish Species Data from Wildcat, Kokomo, and Little Deer Creeks, June 2001

		Wildcat Creek						Kokomo Creek	Little Deer Creek			
Common Name	**Scientific Name**	**CS2-IX01**	**CS2-IX02**	**CS2-IX03**	**CS2-IX05**	**CS2-IX06**	**CS2-IX07**	**CS2-IX04**	**CS2-IX08**	**Trophic Guild**	**Reproductive Guild**	**Tolerance**
Gizzard shad	*Dorosoma cepedianum*		1			1	1			O	M	T
Common carp	*Cyprinus carpio*	8	13	8	12	7	7	4	1	O	M	T
Goldfish	*Carassius auratus*				1					O	M	T
Golden shiner	*Notemigonus crysoleucus*					3				I	M	T
Creek Chub	*Semotilus atromaculatus*	2							17	G	N	T
Redfin shiner	*Cyprinella lutrens*			6					4	I	N	T
Spotfin shiner	*Cyprinella spiloptera*	64		12				1		I	M	
Bluntnose minnow	*Pimephales notatus*			3				2	119	O	C	T
Sand shiner	*Notropis ludibundus*	5		9					22	I	M	M
Quillback	*Carpiodes cyprinus*		2				4			O	M	T
White sucker	*Catostomus commersoni*	5	17	6	15	4			3	O	S	T
Spotted sucker	*Minytrema melanops*	1	10	14	47	54	18	1		I	S	
Northern hog sucker	*Hypentilium nigricans*	4	11	14	1	2		3	2	I	S	M
Black redhorse	*Moxostoma duquesnei*			1	1					I	S	R
Golden redhorse	*Moxostoma erythrurum*	9	14	17	14	16	31		4	I	S	M
Channel catfish	*Ictalurus punctatus*				2					C	C	T
Yellow bullhead	*Ameiurus natalis*							3		I	C	T
White bass	*Morone chrysops*			1	3					P	M	T
Black crappie	*Pomoxis nigromaculatus*			1	7	1	2				C	
Rock bass	*Ambloplites rupestris*	3	11	2	4	1	1	5	25	C	C	M
Largemouth bass	*Micropterus salmoides*	1		2	1	3		1		C	C	
Spotted bass	*Micropterus punctulatus*				3	5				C	C	
Smallmouth bass	*Micropterus dolomieu*	1	12	2	3		1		1	C	C	M
Green sunfish	*Lepomis cyanellus*	2						3		I	C	T
Bluegill	*Lepomis macrochirus*	4	1	6	7	6	5	5		I	C	P
Pumpkinseed	*Lepomis gibbosus*			1	5	10		4	26	I	C	P
Longear sunfish	*Lepomis megalotis*	30	5	2	6	8		3	3	I	C	M
Walleye	*Stizostedion vitreum*	7	4	4	7	4	5			P	S	
Saugeye	*Stizostedion*		1							P	S	M
Logperch	*Percina caprodes*			1					5	I	S	M
Greenside darter	*Etheostoma blennioides*			2	1			1	4	I	M	M
Rainbow darter	*Etheostoma caeruleum*								12	I	S	M
	Total Number of Organisms	146	102	114	140	125	75	36	248			
	Total Number of Species	15	13	21	19	15	10	13	15			

Trophic Guild
G = Generalist Feeder
I = Insectivore
C = Carnivore
O = Omnivore
P = Piscivore

Reproductive Guild
N = Complex, no parental care
C = Complex, with parental care
S = Simple lithophil

Tolerance Level
T = Highly Tolerant
P = Moderately Tolerant
M = Moderantly Intolerant
I = Common Intolerant

Attachment 5

Preliminary Analytical Reports

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-2
Lab Sample Number 913724-001
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 20	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	11	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	20	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	31	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	41	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	12	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1600	99	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1400	99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	16	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-3
Lab Sample Number 913724-002
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	8.0	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.10	0.10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.10	0.10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	26	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	40	10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	280	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	12	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1400	50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1200	100	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	14	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-4
Lab Sample Number 913724-003
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/15/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	36	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	17	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	26	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	77	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	430	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	28	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1900	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.46	0.46	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1700	97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	20	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-5
Lab Sample Number 913724-004
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	32	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	11	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	20000	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	34	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	66	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	360	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	14	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1500	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	18	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-6
Lab Sample Number 913724-005
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	12	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.090	0.090	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.090	0.090	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	9.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.27	0.27	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	31	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	47	9.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	350	4.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	14	0.18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	0.93	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1700	90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	17	1.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-7
Lab Sample Number 913724-006
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	41	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	21	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	30	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	56	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	440	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	13	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1600	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1600	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	19	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-8
Lab Sample Number 913724-007
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	17	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	22	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	36	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	380	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	20	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	1.3	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1600	93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	16	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-1
Lab Sample Number 913724-008
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/12/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.096	0.096	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.096	0.096	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	4800	9.6	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.2	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	11	9.6	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	300	4.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	1.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.065	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3200	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	590	96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	6.8	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-2
Lab Sample Number 913724-009
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/13/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.64	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	7900	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	360	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.2	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2700	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.2	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	730	94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	10	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-3
Lab Sample Number 913724-010
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/14/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 20	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	3600	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	4.4	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	33	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	280	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	1.8	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2800	250	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	510	99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	9.3	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-3 DUP
Lab Sample Number 913724-011
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/14/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	41	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.99	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.095	0.095	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.095	0.095	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	12000	9.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	0.37	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	380	4.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.069	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2800	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	990	95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	14	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-4
Lab Sample Number 913724-012
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 18	18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.091	0.091	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.091	0.091	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	12000	9.1	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.27	0.27	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	19	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.1	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	1.1	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	370	4.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	3.9	0.18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.048	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	0.93	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2200	230	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	970	91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	22	1.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-5
Lab Sample Number 913724-013
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	27	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	5700	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.4	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	58	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	3.4	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2600	250	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.5	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.48	0.48	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	670	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	11	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-6
Lab Sample Number 913724-014
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	2.5	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	11000	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.4	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	430	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.1	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.046	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3000	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	730	94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	13	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-7
Lab Sample Number 913724-015
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/15/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	6900	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.7	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	2.8	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2900	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.4	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	670	97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	12	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-8
Lab Sample Number 913724-016
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/16/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	2.0	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	4700	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.3	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	310	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3100	230	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	2.2	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.44	0.44	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	640	93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	10	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268700	**Collection Date :**	10/30/01
Lab Sample Number	913848-001	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	41000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268701

Lab Sample Number 913848-002

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	52000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268701MS

Lab Sample Number 913848-003

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	62000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268701MSD

Lab Sample Number 913848-004

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	66000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268702	**Collection Date :**	10/30/01
Lab Sample Number	913848-005	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	62000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268703

Lab Sample Number 913848-006

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	65000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268704	**Collection Date :**	10/30/01
Lab Sample Number	913848-007	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	63000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268705

Lab Sample Number 913848-008

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	58000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268706	**Collection Date :**	10/30/01
Lab Sample Number	913848-009	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	59000	1000	mg/kg		11/13/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268707

Lab Sample Number 913848-010

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	54000	1000	mg/kg		11/14/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268708	**Collection Date :**	10/30/01
Lab Sample Number	913848-011	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	120000	5000	mg/kg		11/14/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268709

Lab Sample Number 913848-012

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	98000	5000	mg/kg		11/15/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268710	**Collection Date :**	10/30/01
Lab Sample Number	913848-013	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	110000	5000	mg/kg		11/15/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name NORTHERN LAKE SERVICE

Project Number 63447

Field ID : 268711

Lab Sample Number 913848-014

Lab Project Number 913848

Submitter : NORTHERN LAKE SERVICE, INC

Report Date : 11/16/01

Collection Date : 10/30/01

Matrix Type SOIL

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	15000	1000	mg/kg		11/15/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise

- Preliminary Analytical Report -

Project Name	NORTHERN LAKE SERVICE	**Submitter :**	NORTHERN LAKE SERVICE, INC
Project Number	63447	**Report Date :**	11/16/01
Field ID :	268712	**Collection Date :**	10/30/01
Lab Sample Number	913848-015	**Matrix Type**	SOIL
Lab Project Number	913848	**WI DNR LAB ID :**	113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
TOC as NPOC	3700	500	mg/kg		11/15/01	SW846 9060M	SW846 9060M

All soil results are reported on a dry weight basis unless otherwise i

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-2
Lab Sample Number 913724-001
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 20	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	11	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	20	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	31	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	41	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	12	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1600	99	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1400	99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	16	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-3
Lab Sample Number 913724-002
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	8.0	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.10	0.10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.10	0.10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	26	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	40	10	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	280	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	12	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1400	50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1200	100	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 1.0	1.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	14	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-4
Lab Sample Number 913724-003
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/15/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	36	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	17	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	26	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	77	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	430	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	28	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1900	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.46	0.46	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1700	97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	20	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-5
Lab Sample Number 913724-004
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	32	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	11	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	20000	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	34	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	66	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	360	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	14	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1500	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	18	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-6
Lab Sample Number 913724-005
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	12	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.090	0.090	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.090	0.090	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	18000	9.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.27	0.27	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	31	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	47	9.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	350	4.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	14	0.18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	0.93	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1700	90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.90	0.90	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	17	1.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : IT-7
Lab Sample Number 913724-006
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/20/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	41	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	21	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	30	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	56	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	440	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	13	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1600	49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1600	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	19	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL

Project Number 162558

Field ID : IT-8

Lab Sample Number 913724-007

Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE

Report Date : 11/19/01

Collection Date : 6/18/01

Matrix Type BIOTA

WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	21	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	17	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	26000	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	22	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	36	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	380	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	20	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	1800	47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Selenium	1.3	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	1600	93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	16	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-1
Lab Sample Number 913724-008
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/12/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.096	0.096	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.096	0.096	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	4800	9.6	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.2	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	11	9.6	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	300	4.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	1.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.065	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3200	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	590	96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.96	0.96	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	6.8	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-2
Lab Sample Number 913724-009
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/13/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.64	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	7900	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	360	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.2	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2700	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.2	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	730	94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	10	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-3
Lab Sample Number 913724-010
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/14/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 20	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.099	0.099	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	3600	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.30	0.30	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	4.4	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	33	9.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	280	5.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	1.8	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2800	250	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	510	99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.99	0.99	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.50	0.50	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	9.3	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-3 DUP
Lab Sample Number 913724-011
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/14/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	41	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	0.99	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.095	0.095	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.095	0.095	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	12000	9.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	0.37	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	380	4.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.069	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2800	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	990	95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.95	0.95	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	14	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-4
Lab Sample Number 913724-012
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 18	18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.091	0.091	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.091	0.091	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	12000	9.1	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.27	0.27	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	19	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	12	9.1	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	1.1	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	370	4.5	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	3.9	0.18	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.048	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	0.93	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2200	230	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.1	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.48	0.48	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Sodium	970	91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.91	0.91	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.45	0.45	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	22	1.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-5
Lab Sample Number 913724-013
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	27	20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.098	0.098	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	5700	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.4	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	58	9.8	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	3.4	0.20	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2600	250	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.5	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.48	0.48	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	670	98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.98	0.98	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	11	2.0	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-6
Lab Sample Number 913724-014
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/19/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	2.5	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.094	0.094	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	11000	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.4	9.4	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	430	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.1	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	0.046	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3000	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.7	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.47	0.47	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	730	94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.94	0.94	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	13	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-7
Lab Sample Number 913724-015
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/15/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	1.6	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.097	0.097	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	6900	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.29	0.29	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.7	9.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	330	4.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	2.8	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	2900	240	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	1.4	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.50	0.50	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	670	97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.97	0.97	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.49	0.49	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	12	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B

- Preliminary Analytical Report -

Project Name CONTINENTAL STEEL
Project Number 162558
Field ID : FT-8
Lab Sample Number 913724-016
Lab Project Number 913724

Submitter : CH2M HILL, INC - MILWAUKEE
Report Date : 11/19/01
Collection Date : 6/18/01
Matrix Type BIOTA
WI DNR LAB ID : 113172950

Preliminary Inorganic Results

Test	Result	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method
Aluminum	< 19	19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Antimony	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Arsenic	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Barium	2.0	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Beryllium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cadmium	< 0.093	0.093	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Calcium	4700	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Chromium	< 0.28	0.28	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Cobalt	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Copper	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Iron	< 9.3	9.3	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Lead	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Magnesium	310	4.7	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Manganese	4.5	0.19	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Mercury	< 0.033	0.033	mg/Kg		11/15/01	SW846 7471A	SW846 7471A
Nickel	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Potassium	3100	230	mg/Kg as is		11/15/01	SW846 3050B	SW846 6010B
Selenium	2.2	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Silver	< 0.44	0.44	mg/Kg as is		11/14/01	SW846 3050B	SW846 6010B
Sodium	640	93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Thallium	< 0.93	0.93	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Vanadium	< 0.47	0.47	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B
Zinc	10	1.9	mg/Kg as is		11/13/01	SW846 3050B	SW846 6010B