

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0020 **USGS Hydrologic Unit:** 050902030502
Stream Name: Little Laughery Creek **County:** Franklin
Description: SR 46 **Latitude:** 39 18 30.86396 **Longitude:** -85 14 21.90295
Drainage: 5.200 **Site Number:** 19T-001

SiteID: OML-05-0020 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39546
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	52 %		ASTM D888-09(C)
DO	4.61 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	569 umho/cm		SM2510B
Temperature	21 °C		SM2550B(2)
Turbidity (Hach)	7.39 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #: 500-167907-1</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	210 mg/L	5	SM2320B
Chloride	45 mg/L	2	EPA 300.0
Hardness (as CaCO3)	230 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	18 mg/L	5	SM2540D
Solids, Total (TS)	280 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	330 mg/L	10	SM2540C
Sulfate	15 mg/L	2	EPA 300.0
Calcium (Total)	63 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.053 mg/L	0.05	SM4500P-E
TKN	0.57 mg/L	0.4	SM4500N(Org)-D
TOC	4.9 mg/L	1	SM5310C

<u>Lab ID #: AB39546</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	613.1 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0020 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38451
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	21.1 %		ASTM D888-09(C)
DO	1.89 mg/L		ASTM D888-09(C)
pH (Field)	7.51 SU		EPA 150.2
Specific Conductance (Field)	756 umho/cm		SM2510B
Temperature	21.5 °C		SM2550B(2)
Turbidity (Hach)	14 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0020 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40463
Water Flow Type Riffle **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Isolated pool, low flow.

Lab ID #:	Result	Reporting Limit	Method
% Sat	41.6 %		ASTM D888-09(C)
DO	3.88 mg/L		ASTM D888-09(C)
pH (Field)	7.46 SU		EPA 150.2
Specific Conductance (Field)	708 umho/cm		SM2510B
Temperature	18.2 °C		SM2550B(2)
Turbidity (Hach)	8.29 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-1	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	68 mg/L	4	EPA 300.0
Hardness (as CaCO3)	240 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	5	SM2540D
Solids, Total (TS)	370 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	350 mg/L	10	SM2540C
Sulfate	21 mg/L	1	EPA 300.0
Calcium (Total)	62 mg/L	0.2	EPA 200.7
Magnesium (Total)	20 mg/L	0.1	EPA 200.7
COD	28 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.69 mg/L	0.4	SM4500N(Org)-D
TOC	7.6 mg/L	1	SM5310C

Lab ID #: AB40463	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	56.5 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0021 **USGS Hydrologic Unit:** 050902030502
Stream Name: Little Laughery Creek **County:** Ripley
Description: SR 229 **Latitude:** 39 15 35.63184 **Longitude:** -85 14 34.33649
Drainage: 14.737 **Site Number:** 19T-002

SiteID: OML-05-0021 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39564
Water Flow Type Glide **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	79.8 %		ASTM D888-09(C)
DO	6.82 mg/L		ASTM D888-09(C)
pH (Field)	7.66 SU		EPA 150.2
Specific Conductance (Field)	863 umho/cm		SM2510B
Temperature	23 °C		SM2550B(2)
Turbidity (Hach)	7.06 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-4	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	110 mg/L	10	EPA 300.0
Hardness (as CaCO3)	190 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4 mg/L	5	SM2540D
Solids, Total (TS)	520 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	550 mg/L	10	SM2540C
Sulfate	87 mg/L	10	EPA 300.0
Calcium (Total)	56 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	21 mg/L	10	SM5220C
Nitrogen, Ammonia	0.17 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	11 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.33 mg/L	0.05	SM4500P-E
TKN	0.94 mg/L	0.4	SM4500N(Org)-D
TOC	6.1 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39564	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	579.4 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0021 **Sample Date:** 8/13/2019 **IDEM Sample #:** AB38450
Water Flow Type Riffle **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	70.9 %		ASTM D888-09(C)
DO	6.05 mg/L		ASTM D888-09(C)
pH (Field)	7.49 SU		EPA 150.2
Specific Conductance (Field)	810 umho/cm		SM2510B
Temperature	23.1 °C		SM2550B(2)
Turbidity (Hach)	13.9 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0021 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40481
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	82.6 %		ASTM D888-09(C)
DO	7.53 mg/L		ASTM D888-09(C)
pH (Field)	7.58 SU		EPA 150.2
Specific Conductance (Field)	667 umho/cm		SM2510B
Temperature	19.8 °C		SM2550B(2)
Turbidity (Hach)	3.33 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-3	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	78 mg/L	5	SM2320B
Chloride	120 mg/L	5	EPA 300.0
Hardness (as CaCO3)	190 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	4 mg/L	5	SM2540D
Solids, Total (TS)	570 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	550 mg/L	10	SM2540C
Sulfate	89 mg/L	5	EPA 300.0
Calcium (Total)	55 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	24 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	23 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.34 mg/L	0.05	SM4500P-E
TKN	0.68 mg/L	0.4	SM4500N(Org)-D
TOC	6.6 mg/L	1	SM5310C

Lab ID #: AB40481	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	307.6 MPN/100mL	1	SM9223B

SiteID: OML-05-0021 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40718
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	68.8 %		ASTM D888-09(C)
DO	6.64 mg/L		ASTM D888-09(C)
pH (Field)	7.31 SU		EPA 150.2
Specific Conductance (Field)	865 umho/cm		SM2510B
Temperature	16.8 °C		SM2550B(2)
Turbidity (Hach)	3.43 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-10	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	70 mg/L	5	SM2320B
Chloride	130 mg/L	5	EPA 300.0
Hardness (as CaCO3)	160 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	540 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	500 mg/L	10	SM2540C
Sulfate	94 mg/L	5	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	11 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	22 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.3 mg/L	0.05	SM4500P-E
TKN	0.97 mg/L	0.4	SM4500N(Org)-D
TOC	7.4 mg/L	1	SM5310C

Lab ID #: AB40718	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	185 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0022 **USGS Hydrologic Unit:** 050902030502
Stream Name: Bobs Cr **County:** Ripley
Description: CR 1300 N **Latitude:** 39 15 52.87559 **Longitude:** -85 14 28.52278
Drainage: 9.177 **Site Number:** 19T-003

SiteID: OML-05-0022 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39563
Water Flow Type: Glide **Water Appearance:** Clear **Water Depth:** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %:** 0-20%
Sampler Comments: Very low flow

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	38.3 %		ASTM D888-09(C)
DO	3.37 mg/L		ASTM D888-09(C)
pH (Field)	7.29 SU		EPA 150.2
Specific Conductance (Field)	373 umho/cm		SM2510B
Temperature	21.2 °C		SM2550B(2)
Turbidity (Hach)	14.3 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-3	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	160 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	180 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	6.5 mg/L	5	SM2540D
Solids, Total (TS)	210 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	220 mg/L	10	SM2540C
Sulfate	10 mg/L	1	EPA 300.0
Calcium (Total)	51 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	24 mg/L	10	SM5220C
Nitrogen, Ammonia	0.16 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.08 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.66 mg/L	0.4	SM4500N(Org)-D
TOC	5.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39563	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1203.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0022

Sample Date: 8/13/2019

IDEM Sample #: AB38432

Water Flow Type Pool

Water Appearance Clear

Water Depth Algae?

Water Flow (cf/sec):

Flow Estimated?

Aquatic Life?

Canopy Closed % 0-20%

Sampler Comments: Green algae film on surface

Lab ID #:	Result	Reporting Limit	Method
% Sat	42.2 %		ASTM D888-09(C)
DO	3.62 mg/L		ASTM D888-09(C)
pH (Field)	7.42 SU		EPA 150.2
Specific Conductance (Field)	360.8 umho/cm		SM2510B
Temperature	22.9 °C		SM2550B(2)
Turbidity (Hach)	7.19 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0023 **USGS Hydrologic Unit:** 050902030502
Stream Name: Little Laughery Creek **County:** Ripley
Description: CR 1250 N/Legion Road **Latitude:** 39 15 6.14490 **Longitude:** -85 14 26.27253
Drainage: 25.228 **Site Number:** 19T-004

SiteID: OML-05-0023 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39565
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	66.4 %		ASTM D888-09(C)
DO	5.61 mg/L		ASTM D888-09(C)
pH (Field)	7.53 SU		EPA 150.2
Specific Conductance (Field)	785 umho/cm		SM2510B
Temperature	23.4 °C		SM2550B(2)
Turbidity (Hach)	14.1 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-5	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	100 mg/L	4	EPA 300.0
Hardness (as CaCO3)	200 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	480 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	460 mg/L	10	SM2540C
Sulfate	70 mg/L	4	EPA 300.0
Calcium (Total)	58 mg/L	0.2	EPA 200.7
Magnesium (Total)	14 mg/L	0.1	EPA 200.7
COD	23 mg/L	10	SM5220C
Nitrogen, Ammonia	0.21 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	9.6 mg/L	1	SM4500NO3-F
Phosphorus, Total	0.23 mg/L	0.05	SM4500P-E
TKN	0.57 mg/L	0.4	SM4500N(Org)-D
TOC	5.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39565	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	139.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0023 **Sample Date:** 8/13/2019 **IDEM Sample #:** AB38431
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	63 %		ASTM D888-09(C)
DO	5.34 mg/L		ASTM D888-09(C)
pH (Field)	7.56 SU		EPA 150.2
Specific Conductance (Field)	826 umho/cm		SM2510B
Temperature	23.5 °C		SM2550B(2)
Turbidity (Hach)	14.9 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0023 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40482
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	79.8 %		ASTM D888-09(C)
DO	7.21 mg/L		ASTM D888-09(C)
pH (Field)	7.63 SU		EPA 150.2
Specific Conductance (Field)	821 umho/cm		SM2510B
Temperature	20.2 °C		SM2550B(2)
Turbidity (Hach)	9.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-4	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	89 mg/L	5	SM2320B
Chloride	110 mg/L	5	EPA 300.0
Hardness (as CaCO3)	190 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	520 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	530 mg/L	10	SM2540C
Sulfate	78 mg/L	5	EPA 300.0
Calcium (Total)	55 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	17 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.27 mg/L	0.05	SM4500P-E
TKN	0.82 mg/L	0.4	SM4500N(Org)-D
TOC	6.2 mg/L	1	SM5310C

Lab ID #: AB40482	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	328.2 MPN/100mL	1	SM9223B

SiteID: OML-05-0023 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40719
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	68.3 %		ASTM D888-09(C)
DO	6.54 mg/L		ASTM D888-09(C)
pH (Field)	7.42 SU		EPA 150.2
Specific Conductance (Field)	785 umho/cm		SM2510B
Temperature	17.4 °C		SM2550B(2)
Turbidity (Hach)	5.45 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-11	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	98 mg/L	5	SM2320B
Chloride	140 mg/L	5	EPA 300.0
Hardness (as CaCO3)	160 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	6 mg/L	5	SM2540D
Solids, Total (TS)	530 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	490 mg/L	10	SM2540C
Sulfate	96 mg/L	5	EPA 300.0
Calcium (Total)	47 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	14 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.25 mg/L	0.05	SM4500P-E
TKN	0.83 mg/L	0.4	SM4500N(Org)-D
TOC	7.5 mg/L	1	SM5310C

Lab ID #: AB40719	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	172.2 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0009 **USGS Hydrologic Unit:** 050902030501
Stream Name: Laughery Creek **County:** Ripley
Description: CR 250 W **Latitude:** 39 15 18.76687 **Longitude:** -85 18 20.21532
Drainage: 13.253 **Site Number:** 19T-005

SiteID: OML-05-0009 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39547
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	82 %		ASTM D888-09(C)
DO	6.92 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	257 umho/cm		SM2510B
Temperature	24.3 °C		SM2550B(2)
Turbidity (Hach)	9.97 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-10	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	100 mg/L	5	SM2320B
Chloride	10 mg/L	1	EPA 300.0
Hardness (as CaCO3)	120 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	160 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	160 mg/L	10	SM2540C
Sulfate	8.9 mg/L	1	EPA 300.0
Calcium (Total)	35 mg/L	0.2	EPA 200.7
Magnesium (Total)	7.3 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.26 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.09 mg/L	0.05	SM4500P-E
TKN	0.49 mg/L	0.4	SM4500N(Org)-D
TOC	4.1 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39547	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	161.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0009 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38449
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	50.6 %		ASTM D888-09(C)
DO	4.47 mg/L		ASTM D888-09(C)
pH (Field)	7.62 SU		EPA 150.2
Specific Conductance (Field)	307.5 umho/cm		SM2510B
Temperature	21.267 °C		SM2550B(2)
Turbidity (Hach)	21.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0009 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40464
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	75.1 %		ASTM D888-09(C)
DO	6.48 mg/L		ASTM D888-09(C)
pH (Field)	7.65 SU		EPA 150.2
Specific Conductance (Field)	379 umho/cm		SM2510B
Temperature	22.8 °C		SM2550B(2)
Turbidity (Hach)	5.62 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-9	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	34 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	270 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	230 mg/L	10	SM2540C
Sulfate	15 mg/L	1	EPA 300.0
Calcium (Total)	45 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.15 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.073 mg/L	0.05	SM4500P-E
TKN	0.49 mg/L	0.4	SM4500N(Org)-D
TOC	5.2 mg/L	1	SM5310C

Lab ID #: AB40464	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	238.2 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0024 **USGS Hydrologic Unit:** 050902030501
Stream Name: Tub Creek **County:** Ripley
Description: CR 250 W **Latitude:** 39 15 21.78944 **Longitude:** -85 18 19.81808
Drainage: 11.356 **Site Number:** 19T-006

SiteID: OML-05-0024 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39548
Water Flow Type Glide **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	172.6 %		ASTM D888-09(C)
DO	12.97 mg/L		ASTM D888-09(C)
pH (Field)	8.08 SU		EPA 150.2
Specific Conductance (Field)	419 umho/cm		SM2510B
Temperature	29.7 °C		SM2550B(2)
Turbidity (Hach)	3.38 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-11	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	20 mg/L	1	EPA 300.0
Hardness (as CaCO3)	210 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	19 mg/L	1	EPA 300.0
Calcium (Total)	56 mg/L	0.2	EPA 200.7
Magnesium (Total)	16 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.27 mg/L	0.05	SM4500P-E
TKN	0.39 mg/L	0.4	SM4500N(Org)-D
TOC	3.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39548	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	79.4 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0024 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38448
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	81.8 %		ASTM D888-09(C)
DO	6.81 mg/L		ASTM D888-09(C)
pH (Field)	7.73 SU		EPA 150.2
Specific Conductance (Field)	430.7 umho/cm		SM2510B
Temperature	23.653 °C		SM2550B(2)
Turbidity (Hach)	3.09 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0024 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40465
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Very low flow, lots of algae mats

Lab ID #:	Result	Reporting Limit	Method
% Sat	236.6 %		ASTM D888-09(C)
DO	18.49 mg/L		ASTM D888-09(C)
pH (Field)	8.85 SU		EPA 150.2
Specific Conductance (Field)	378 umho/cm		SM2510B
Temperature	27.8 °C		SM2550B(2)
Turbidity (Hach)	3.25 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-10	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	27 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	6 mg/L	5	SM2540D
Solids, Total (TS)	220 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	25 mg/L	1	EPA 300.0
Calcium (Total)	39 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.47 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	3.8 mg/L	1	SM5310C

Lab ID #: AB40465	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	30.5 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0025 **USGS Hydrologic Unit:** 050902030503
Stream Name: Ripley Cr **County:** Ripley
Description: SR 48 **Latitude:** 39 12 25.68560 **Longitude:** -85 8 41.99721
Drainage: 7.280 **Site Number:** 19T-007

SiteID: OML-05-0025 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39556
Water Flow Type Pool **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	43 %		ASTM D888-09(C)
DO	3.85 mg/L		ASTM D888-09(C)
pH (Field)	7.47 SU		EPA 150.2
Specific Conductance (Field)	722 umho/cm		SM2510B
Temperature	22.6 °C		SM2550B(2)
Turbidity (Hach)	7.24 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-19	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	230 mg/L	5	SM2320B
Chloride	71 mg/L	4	EPA 300.0
Hardness (as CaCO3)	280 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	420 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	450 mg/L	10	SM2540C
Sulfate	32 mg/L	1	EPA 300.0
Calcium (Total)	78 mg/L	0.2	EPA 200.7
Magnesium (Total)	20 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.23 mg/L	0.05	SM4500P-E
TKN	0.59 mg/L	0.4	SM4500N(Org)-D
TOC	5.1 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39556	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	95.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0025 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38447
Water Flow Type Pool **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	56.8 %		ASTM D888-09(C)
DO	4.89 mg/L		ASTM D888-09(C)
pH (Field)	7.65 SU		EPA 150.2
Specific Conductance (Field)	779 umho/cm		SM2510B
Temperature	22.4 °C		SM2550B(2)
Turbidity (Hach)	16 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0025 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40473
Water Flow Type Pool **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Very low flow, duckweed present

Lab ID #:	Result	Reporting Limit	Method
% Sat	34.6 %		ASTM D888-09(C)
DO	3.17 mg/L		ASTM D888-09(C)
pH (Field)	7.34 SU		EPA 150.2
Specific Conductance (Field)	783 umho/cm		SM2510B
Temperature	19.9 °C		SM2550B(2)
Turbidity (Hach)	9.93 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-16	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	94 mg/L	4	EPA 300.0
Hardness (as CaCO3)	240 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	5	SM2540D
Solids, Total (TS)	450 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	460 mg/L	10	SM2540C
Sulfate	42 mg/L	4	EPA 300.0
Calcium (Total)	65 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.58 mg/L	0.05	SM4500P-E
TKN	0.69 mg/L	0.4	SM4500N(Org)-D
TOC	6.9 mg/L	1	SM5310C

Lab ID #: AB40473	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	90.8 MPN/100mL	1	SM9223B

SiteID: OML-05-0025 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40710
Water Flow Type Pool **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: low flow, lots of duckweed, pooled

Lab ID #:	Result	Reporting Limit	Method
% Sat	15.7 %		ASTM D888-09(C)
DO	1.67 mg/L		ASTM D888-09(C)
pH (Field)	7.35 SU		EPA 150.2
Specific Conductance (Field)	1030 umho/cm		SM2510B
Temperature	15.6 °C		SM2550B(2)
Turbidity (Hach)	12.3 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-3	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	280 mg/L	5	SM2320B
Chloride	150 mg/L	5	EPA 300.0
Hardness (as CaCO3)	290 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	5	SM2540D
Solids, Total (TS)	610 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	630 mg/L	10	SM2540C
Sulfate	42 mg/L	1	EPA 300.0
Calcium (Total)	77 mg/L	0.2	EPA 200.7
Magnesium (Total)	25 mg/L	0.1	EPA 200.7
COD	30 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.075 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	1.1 mg/L	0.25	SM4500P-E
TKN	1 mg/L	0.4	SM4500N(Org)-D
TOC	9.4 mg/L	1	SM5310C

Lab ID #: AB40710	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	185 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0026 **USGS Hydrologic Unit:** 050902030503
Stream Name: Ripley Cr **County:** Ripley
Description: N Old Milan Rd **Latitude:** 39 10 29.31366 **Longitude:** -85 10 12.11020
Drainage: 18.703 **Site Number:** 19T-008

SiteID: OML-05-0026 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39555
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	51.3 %		ASTM D888-09(C)
DO	4.38 mg/L		ASTM D888-09(C)
pH (Field)	7.44 SU		EPA 150.2
Specific Conductance (Field)	415 umho/cm		SM2510B
Temperature	22.9 °C		SM2550B(2)
Turbidity (Hach)	6.38 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-18	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	22 mg/L	1	EPA 300.0
Hardness (as CaCO3)	250 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	11 mg/L	5	SM2540D
Solids, Total (TS)	340 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	19 mg/L	1	EPA 300.0
Calcium (Total)	70 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.052 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.088 mg/L	0.05	SM4500P-E
TKN	0.39 mg/L	0.4	SM4500N(Org)-D
TOC	3.9 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39555	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	387.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0026 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38433
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	69.4 %		ASTM D888-09(C)
DO	5.91 mg/L		ASTM D888-09(C)
pH (Field)	7.79 SU		EPA 150.2
Specific Conductance (Field)	518 umho/cm		SM2510B
Temperature	23.4 °C		SM2550B(2)
Turbidity (Hach)	6.07 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0026 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40472
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	46.9 %		ASTM D888-09(C)
DO	4.28 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	547 umho/cm		SM2510B
Temperature	19.8 °C		SM2550B(2)
Turbidity (Hach)	8.24 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-15	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	210 mg/L	5	SM2320B
Chloride	29 mg/L	2	EPA 300.0
Hardness (as CaCO3)	240 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	9.5 mg/L	5	SM2540D
Solids, Total (TS)	310 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	27 mg/L	1	EPA 300.0
Calcium (Total)	65 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.076 mg/L	0.05	SM4500P-E
TKN	0.89 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

Lab ID #: AB40472	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	201.4 MPN/100mL	1	SM9223B

SiteID: OML-05-0026 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40709
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Low flow and stream is pooled

Lab ID #:	Result	Reporting Limit	Method
% Sat	30.1 %		ASTM D888-09(C)
DO	3.13 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	573 umho/cm		SM2510B
Temperature	13.4 °C		SM2550B(2)
Turbidity (Hach)	5.09 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-2	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	260 mg/L	5	SM2320B
Chloride	39 mg/L	2	EPA 300.0
Hardness (as CaCO3)	250 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	7 mg/L	5	SM2540D
Solids, Total (TS)	340 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	330 mg/L	10	SM2540C
Sulfate	6.7 mg/L	1	EPA 300.0
Calcium (Total)	65 mg/L	0.2	EPA 200.7
Magnesium (Total)	21 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.13 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

Lab ID #: AB40709	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1553.1 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0027 **USGS Hydrologic Unit:** 050902030504
Stream Name: Ripley Cr **County:** Ripley
Description: SR 48 **Latitude:** 39 11 57.27241 **Longitude:** -85 12 7.53762
Drainage: 27.588 **Site Number:** 19T-009

SiteID: OML-05-0027 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39554
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	67 %		ASTM D888-09(C)
DO	5.78 mg/L		ASTM D888-09(C)
pH (Field)	7.55 SU		EPA 150.2
Specific Conductance (Field)	412 umho/cm		SM2510B
Temperature	22.4 °C		SM2550B(2)
Turbidity (Hach)	5.27 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

<u>Lab ID #:</u> 500-167907-17	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	19 mg/L	1	EPA 300.0
Hardness (as CaCO3)	200 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	13 mg/L	5	SM2540D
Solids, Total (TS)	260 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	58 mg/L	0.2	EPA 200.7
Magnesium (Total)	14 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.099 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.065 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	5.1 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39554	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	22.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0027 Sample Date: 8/12/2019 IDEM Sample #: AB38446
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	95.2 %		ASTM D888-09(C)
DO	8.15 mg/L		ASTM D888-09(C)
pH (Field)	7.8 SU		EPA 150.2
Specific Conductance (Field)	412.9 umho/cm		SM2510B
Temperature	23 °C		SM2550B(2)
Turbidity (Hach)	5.15 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0027 Sample Date: 9/10/2019 IDEM Sample #: AB40471
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments: Very low flow

Lab ID #:	Result	Reporting Limit	Method
% Sat	43.5 %		ASTM D888-09(C)
DO	3.96 mg/L		ASTM D888-09(C)
pH (Field)	7.55 SU		EPA 150.2
Specific Conductance (Field)	443 umho/cm		SM2510B
Temperature	19.9 °C		SM2550B(2)
Turbidity (Hach)	4.64 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-14	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	21 mg/L	1	EPA 300.0
Hardness (as CaCO3)	200 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	300 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	230 mg/L	10	SM2540C
Sulfate	11 mg/L	1	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	16 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.033 mg/L	0.05	SM4500P-E
TKN	0.71 mg/L	0.4	SM4500N(Org)-D
TOC	5.5 mg/L	1	SM5310C

Lab ID #: AB40471	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	52.7 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0028 **USGS Hydrologic Unit:** 050902030504
Stream Name: N Br Ripley Cr **County:** Ripley
Description: N Adams Church Rd **Latitude:** 39 12 42.35535 **Longitude:** -85 12 21.51943
Drainage: 6.323 **Site Number:** 19T-010

SiteID: OML-05-0028 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39552
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	64.3 %		ASTM D888-09(C)
DO	5.67 mg/L		ASTM D888-09(C)
pH (Field)	7.68 SU		EPA 150.2
Specific Conductance (Field)	430 umho/cm		SM2510B
Temperature	21 °C		SM2550B(2)
Turbidity (Hach)	19.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-15	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	22 mg/L	1	EPA 300.0
Hardness (as CaCO3)	210 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	23 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	58 mg/L	0.2	EPA 200.7
Magnesium (Total)	15 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.025 mg/L	0.05	SM4500P-E
TKN	0.6 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39552	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	88.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0029 **USGS Hydrologic Unit:** 050902030504
Stream Name: Ripley Cr **County:** Ripley
Description: SR 129 **Latitude:** 39 12 35.72030 **Longitude:** -85 12 32.74782
Drainage: 38.692 **Site Number:** 19T-011

SiteID: OML-05-0029 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39551
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	64.5 %		ASTM D888-09(C)
DO	5.47 mg/L		ASTM D888-09(C)
pH (Field)	7.57 SU		EPA 150.2
Specific Conductance (Field)	396 umho/cm		SM2510B
Temperature	22.6 °C		SM2550B(2)
Turbidity (Hach)	8.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #: 500-167907-14</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	23 mg/L	1	EPA 300.0
Hardness (as CaCO3)	180 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	230 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.15 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.11 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.06 mg/L	0.05	SM4500P-E
TKN	0.53 mg/L	0.4	SM4500N(Org)-D
TOC	5.8 mg/L	1	SM5310C

<u>Lab ID #: AB39551</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	285.1 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0029 **Sample Date:** 8/13/2019 **IDEM Sample #:** AB38444
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	52.9 %		ASTM D888-09(C)
DO	4.57 mg/L		ASTM D888-09(C)
pH (Field)	7.56 SU		EPA 150.2
Specific Conductance (Field)	398.3 umho/cm		SM2510B
Temperature	22.6 °C		SM2550B(2)
Turbidity (Hach)	7.02 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0029 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40468
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	58.3 %		ASTM D888-09(C)
DO	5.28 mg/L		ASTM D888-09(C)
pH (Field)	7.56 SU		EPA 150.2
Specific Conductance (Field)	352 umho/cm		SM2510B
Temperature	20.1 °C		SM2550B(2)
Turbidity (Hach)	8.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	160 mg/L	5	SM2320B
Chloride	19 mg/L	1	EPA 300.0
Hardness (as CaCO3)	180 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	200 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	210 mg/L	10	SM2540C
Sulfate	9.2 mg/L	1	EPA 300.0
Calcium (Total)	48 mg/L	0.2	EPA 200.7
Magnesium (Total)	14 mg/L	0.1	EPA 200.7
COD	14 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.071 mg/L	0.05	SM4500P-E
TKN	0.87 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

Lab ID #: AB40468	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	60.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0030 **USGS Hydrologic Unit:** 050902030505
Stream Name: Laughery Creek **County:** Ripley
Description: SR 48 **Latitude:** 39 11 50.29840 **Longitude:** -85 14 51.02670
Drainage: 115.769 **Site Number:** 19T-012

SiteID: OML-05-0030 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39550
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	49.7 %		ASTM D888-09(C)
DO	4.22 mg/L		ASTM D888-09(C)
pH (Field)	7.34 SU		EPA 150.2
Specific Conductance (Field)	415 umho/cm		SM2510B
Temperature	23.3 °C		SM2550B(2)
Turbidity (Hach)	16.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #: 500-167907-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	29 mg/L	1	EPA 300.0
Hardness (as CaCO3)	180 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	18 mg/L	5	SM2540D
Solids, Total (TS)	230 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	20 mg/L	1	EPA 300.0
Calcium (Total)	51 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	0.19 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.41 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.054 mg/L	0.05	SM4500P-E
TKN	0.4 mg/L	0.4	SM4500N(Org)-D
TOC	4.1 mg/L	1	SM5310C

Lab ID #: AB39550	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	137.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0030 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38443
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Oil sheen present, pictured.

Lab ID #:	Result	Reporting Limit	Method
% Sat	63 %		ASTM D888-09(C)
DO	5.41 mg/L		ASTM D888-09(C)
pH (Field)	7.71 SU		EPA 150.2
Specific Conductance (Field)	450.4 umho/cm		SM2510B
Temperature	22.8 °C		SM2550B(2)
Turbidity (Hach)	6.95 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0030 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40467
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	71.5 %		ASTM D888-09(C)
DO	6.4 mg/L		ASTM D888-09(C)
pH (Field)	7.92 SU		EPA 150.2
Specific Conductance (Field)	356 umho/cm		SM2510B
Temperature	20.8 °C		SM2550B(2)
Turbidity (Hach)	12.2 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-12	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	41 mg/L	2	EPA 300.0
Hardness (as CaCO3)	160 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	11 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	42 mg/L	1	EPA 300.0
Calcium (Total)	48 mg/L	0.2	EPA 200.7
Magnesium (Total)	11 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.54 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.044 mg/L	0.05	SM4500P-E
TKN	11 mg/L	8	SM4500N(Org)-D
TOC	5.3 mg/L	1	SM5310C

Lab ID #: AB40467	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	325.5 MPN/100mL	1	SM9223B

SiteID: OML-05-0030 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40704
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	82.2 %		ASTM D888-09(C)
DO	8.36 mg/L		ASTM D888-09(C)
pH (Field)	7.98 SU		EPA 150.2
Specific Conductance (Field)	677 umho/cm		SM2510B
Temperature	14.4 °C		SM2550B(2)
Turbidity (Hach)	6.98 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-1	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	94 mg/L	4	EPA 300.0
Hardness (as CaCO3)	180 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	10 mg/L	5	SM2540D
Solids, Total (TS)	400 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	420 mg/L	10	SM2540C
Sulfate	59 mg/L	4	EPA 300.0
Calcium (Total)	50 mg/L	0.2	EPA 200.7
Magnesium (Total)	14 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.38 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.073 mg/L	0.05	SM4500P-E
TKN	0.56 mg/L	0.4	SM4500N(Org)-D
TOC	5.5 mg/L	1	SM5310C

Lab ID #: AB40704	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	260.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0031 **USGS Hydrologic Unit:** 050902030505
Stream Name: Laughery Creek **County:** Ripley
Description: Salem Rd **Latitude:** 39 13 38.71781 **Longitude:** -85 14 31.34545
Drainage: 68.782 **Site Number:** 19T-013

SiteID: OML-05-0031 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39567
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	68.2 %		ASTM D888-09(C)
DO	5.83 mg/L		ASTM D888-09(C)
pH (Field)	7.64 SU		EPA 150.2
Specific Conductance (Field)	552 umho/cm		SM2510B
Temperature	22.6 °C		SM2550B(2)
Turbidity (Hach)	14.4 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #: 500-167907-7</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	54 mg/L	2	EPA 300.0
Hardness (as CaCO3)	180 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	15 mg/L	5	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	330 mg/L	10	SM2540C
Sulfate	34 mg/L	2	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	3.8 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.11 mg/L	0.05	SM4500P-E
TKN	0.62 mg/L	0.4	SM4500N(Org)-D
TOC	4.2 mg/L	1	SM5310C

<u>Lab ID #: AB39567</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	501.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0031 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38430
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Slight oil sheen at X, pictured.

Lab ID #:	Result	Reporting Limit	Method
% Sat	56.6 %		ASTM D888-09(C)
DO	4.95 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	760 umho/cm		SM2510B
Temperature	22.1 °C		SM2550B(2)
Turbidity (Hach)	14.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0031 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40484
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	71 %		ASTM D888-09(C)
DO	6.5 mg/L		ASTM D888-09(C)
pH (Field)	7.71 SU		EPA 150.2
Specific Conductance (Field)	466 umho/cm		SM2510B
Temperature	19.9 °C		SM2550B(2)
Turbidity (Hach)	9.88 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-6	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	61 mg/L	4	EPA 300.0
Hardness (as CaCO3)	180 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	10 mg/L	5	SM2540D
Solids, Total (TS)	300 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	43 mg/L	1	EPA 300.0
Calcium (Total)	50 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	23 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	3.1 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.18 mg/L	0.05	SM4500P-E
TKN	0.63 mg/L	0.4	SM4500N(Org)-D
TOC	5.3 mg/L	1	SM5310C

Lab ID #: AB40484	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	123.6 MPN/100mL	1	SM9223B

SiteID: OML-05-0031 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40721
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	60.2 %		ASTM D888-09(C)
DO	5.77 mg/L		ASTM D888-09(C)
pH (Field)	7.37 SU		EPA 150.2
Specific Conductance (Field)	880 umho/cm		SM2510B
Temperature	17.2 °C		SM2550B(2)
Turbidity (Hach)	6.03 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	130 mg/L	5	EPA 300.0
Hardness (as CaCO3)	190 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	530 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	480 mg/L	10	SM2540C
Sulfate	91 mg/L	5	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	11 mg/L	2.5	SM4500NO3-F
Phosphorus, Total	0.14 mg/L	0.05	SM4500P-E
TKN	0.84 mg/L	0.4	SM4500N(Org)-D
TOC	7 mg/L	1	SM5310C

Lab ID #: AB40721	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	152.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0007 **USGS Hydrologic Unit:** 050902030505
Stream Name: Laughery Creek **County:** Ripley
Description: SR 229 **Latitude:** 39 14 43.58250 **Longitude:** -85 14 52.34751
Drainage: 39.718 **Site Number:** 19T-014

SiteID: OML060-0007 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39566
Water Flow Type Riffle **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	73.7 %		ASTM D888-09(C)
DO	6.32 mg/L		ASTM D888-09(C)
pH (Field)	7.66 SU		EPA 150.2
Specific Conductance (Field)	269 umho/cm		SM2510B
Temperature	22.9 °C		SM2550B(2)
Turbidity (Hach)	12.8 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-6	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	110 mg/L	5	SM2320B
Chloride	13 mg/L	1	EPA 300.0
Hardness (as CaCO3)	130 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	150 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	190 mg/L	10	SM2540C
Sulfate	10 mg/L	1	EPA 300.0
Calcium (Total)	37 mg/L	0.2	EPA 200.7
Magnesium (Total)	7.9 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.49 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.082 mg/L	0.05	SM4500P-E
TKN	0.35 mg/L	0.4	SM4500N(Org)-D
TOC	3.9 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39566	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	410.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0007 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38455
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Oily sheen on water surface; algal sheen on surface of pooled area

Lab ID #:	Result	Reporting Limit	Method
% Sat	53 %		ASTM D888-09(C)
DO	4.66 mg/L		ASTM D888-09(C)
pH (Field)	7.46 SU		EPA 150.2
Specific Conductance (Field)	386 umho/cm		SM2510B
Temperature	21.6 °C		SM2550B(2)
Turbidity (Hach)	9.28 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML060-0007 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40483
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	50.7 %		ASTM D888-09(C)
DO	4.61 mg/L		ASTM D888-09(C)
pH (Field)	7.62 SU		EPA 150.2
Specific Conductance (Field)	325 umho/cm		SM2510B
Temperature	19.5 °C		SM2550B(2)
Turbidity (Hach)	6.94 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-5	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	15 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	6 mg/L	5	SM2540D
Solids, Total (TS)	190 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	200 mg/L	10	SM2540C
Sulfate	6.4 mg/L	1	EPA 300.0
Calcium (Total)	45 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	21 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.31 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.097 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

Lab ID #: AB40483	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	191.8 MPN/100mL	1	SM9223B

SiteID: OML060-0007 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40720
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Very low flow, nearly isolated pools

Lab ID #:	Result	Reporting Limit	Method
% Sat	51.3 %		ASTM D888-09(C)
DO	5.01 mg/L		ASTM D888-09(C)
pH (Field)	7.53 SU		EPA 150.2
Specific Conductance (Field)	468 umho/cm		SM2510B
Temperature	16.4 °C		SM2550B(2)
Turbidity (Hach)	4.94 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-12	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	60 mg/L	2	EPA 300.0
Hardness (as CaCO3)	200 mg/L	4.6	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	260 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	11 mg/L	1	EPA 300.0
Calcium (Total)	53 mg/L	1	EPA 200.7
Magnesium (Total)	16 mg/L	0.5	EPA 200.7
COD	10 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.05 mg/L	0.05	SM4500P-E
TKN	0.4 mg/L	0.4	SM4500N(Org)-D
TOC	4.8 mg/L	1	SM5310C

Lab ID #: AB40720	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	365.4 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0005 **USGS Hydrologic Unit:** 050902030505
Stream Name: Tributary of Laughery Creek **County:** Ripley
Description: CR 1050 N **Latitude:** 39 13 40.78137 **Longitude:** -85 16 49.51887
Drainage: 4.515 **Site Number:** 19T-015

SiteID: OML060-0005 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39568
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	67.2 %		ASTM D888-09(C)
DO	5.94 mg/L		ASTM D888-09(C)
pH (Field)	7.76 SU		EPA 150.2
Specific Conductance (Field)	362 umho/cm		SM2510B
Temperature	21.1 °C		SM2550B(2)
Turbidity (Hach)	4.63 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-8	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	18 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	200 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	210 mg/L	10	SM2540C
Sulfate	11 mg/L	1	EPA 300.0
Calcium (Total)	52 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.2 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.45 mg/L	0.4	SM4500N(Org)-D
TOC	2.6 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39568	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	125.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0005 Sample Date: 8/12/2019 IDEM Sample #: AB38453
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	65.8 %		ASTM D888-09(C)
DO	5.94 mg/L		ASTM D888-09(C)
pH (Field)	7.82 SU		EPA 150.2
Specific Conductance (Field)	358.9 umho/cm		SM2510B
Temperature	20.3 °C		SM2550B(2)
Turbidity (Hach)	13.5 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML060-0005 Sample Date: 9/9/2019 IDEM Sample #: AB40485
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	75.9 %		ASTM D888-09(C)
DO	7.03 mg/L		ASTM D888-09(C)
pH (Field)	7.9 SU		EPA 150.2
Specific Conductance (Field)	319 umho/cm		SM2510B
Temperature	19.4 °C		SM2550B(2)
Turbidity (Hach)	7.96 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-7	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	12 mg/L	1	EPA 300.0
Hardness (as CaCO3)	160 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	140 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	190 mg/L	10	SM2540C
Sulfate	8.3 mg/L	1	EPA 300.0
Calcium (Total)	47 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	26 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.24 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.037 mg/L	0.05	SM4500P-E
TKN	0.37 mg/L	0.4	SM4500N(Org)-D
TOC	3.5 mg/L	1	SM5310C

Lab ID #: AB40485	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	47.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0032 **USGS Hydrologic Unit:** 050902030505
Stream Name: Walnut Fork **County:** Ripley
Description: CR 1300 N **Latitude:** 39 15 53.34097 **Longitude:** -85 16 48.17450
Drainage: 3.980 **Site Number:** 19T-016

SiteID: OML-05-0032 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39549
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	60.5 %		ASTM D888-09(C)
DO	5.31 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	462 umho/cm		SM2510B
Temperature	21.3 °C		SM2550B(2)
Turbidity (Hach)	5.74 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-12	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	21 mg/L	1	EPA 300.0
Hardness (as CaCO3)	220 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	12 mg/L	1	EPA 300.0
Calcium (Total)	60 mg/L	0.2	EPA 200.7
Magnesium (Total)	17 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.08 mg/L	0.05	SM4500P-E
TKN	0.43 mg/L	0.4	SM4500N(Org)-D
TOC	5.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39549	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	387.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0032 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38442
Water Flow Type Stagnant **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Intermittent past upstream portion of sampling reach. Duckweed in sampling reach. Large Gerrids seen, but not able to be collected for sample.

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	14.3 %		ASTM D888-09(C)
DO	1.27 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	489.1 umho/cm		SM2510B
Temperature	21.337 °C		SM2550B(2)
Turbidity (Hach)	4.3 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0032 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40466
Water Flow Type Pool **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Water/air smells like manure, brown sheen on water.

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	9.3 %		ASTM D888-09(C)
DO	0.87 mg/L		ASTM D888-09(C)
pH (Field)	7.63 SU		EPA 150.2
Specific Conductance (Field)	450 umho/cm		SM2510B
Temperature	19 °C		SM2550B(2)
Turbidity (Hach)	4.38 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-11	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	210 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	15 mg/L	5	SM2540D
Solids, Total (TS)	280 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	270 mg/L	10	SM2540C
Sulfate	7.5 mg/L	1	EPA 300.0
Calcium (Total)	56 mg/L	0.2	EPA 200.7
Magnesium (Total)	16 mg/L	0.1	EPA 200.7
COD	24 mg/L	10	SM5220C
Nitrogen, Ammonia	0.17 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.11 mg/L	0.05	SM4500P-E
TKN	0.71 mg/L	0.4	SM4500N(Org)-D
TOC	7.1 mg/L	1	SM5310C

Lab ID #: AB40466	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	686.7 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0006 **USGS Hydrologic Unit:** 050902030505
Stream Name: Laughery Creek **County:** Ripley
Description: CR 200 W **Latitude:** 39 14 44.80411 **Longitude:** -85 17 28.78470
Drainage: 30.815 **Site Number:** 19T-017

SiteID: OML060-0006 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39569
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	82.4 %		ASTM D888-09(C)
DO	7.01 mg/L		ASTM D888-09(C)
pH (Field)	7.78 SU		EPA 150.2
Specific Conductance (Field)	229 umho/cm		SM2510B
Temperature	23.4 °C		SM2550B(2)
Turbidity (Hach)	8.73 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 500-167907-9	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	100 mg/L	5	SM2320B
Chloride	9.9 mg/L	1	EPA 300.0
Hardness (as CaCO3)	120 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	170 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	160 mg/L	10	SM2540C
Sulfate	8.9 mg/L	1	EPA 300.0
Calcium (Total)	34 mg/L	0.2	EPA 200.7
Magnesium (Total)	7.3 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.54 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.095 mg/L	0.05	SM4500P-E
TKN	0.53 mg/L	0.4	SM4500N(Org)-D
TOC	4.2 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39569	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	272.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML060-0006 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38454
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Mucket (Unionid mussel) found in sampling reach.

Lab ID #:	Result	Reporting Limit	Method
% Sat	75 %		ASTM D888-09(C)
DO	6.47 mg/L		ASTM D888-09(C)
pH (Field)	7.79 SU		EPA 150.2
Specific Conductance (Field)	291.2 umho/cm		SM2510B
Temperature	22.635 °C		SM2550B(2)
Turbidity (Hach)	7.79 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML060-0006 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40486
Water Flow Type Glide **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	92.1 %		ASTM D888-09(C)
DO	8.14 mg/L		ASTM D888-09(C)
pH (Field)	7.87 SU		EPA 150.2
Specific Conductance (Field)	334 umho/cm		SM2510B
Temperature	21.2 °C		SM2550B(2)
Turbidity (Hach)	17.1 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-8	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	9.5 mg/L	5	SM2540D
Solids, Total (TS)	180 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	170 mg/L	10	SM2540C
Sulfate	9.4 mg/L	1	EPA 300.0
Calcium (Total)	42 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.055 mg/L	0.05	SM4500P-E
TKN	0.47 mg/L	0.4	SM4500N(Org)-D
TOC	4.5 mg/L	1	SM5310C

Lab ID #: AB40486	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	62.7 MPN/100mL	1	SM9223B

SiteID: OML060-0006 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40723
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	56.5 %		ASTM D888-09(C)
DO	5.35 mg/L		ASTM D888-09(C)
pH (Field)	7.58 SU		EPA 150.2
Specific Conductance (Field)	358 umho/cm		SM2510B
Temperature	16.8 °C		SM2550B(2)
Turbidity (Hach)	8.22 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-14	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	160 mg/L	5	SM2320B
Chloride	19 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	5	SM2540D
Solids, Total (TS)	200 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	190 mg/L	10	SM2540C
Sulfate	7.7 mg/L	1	EPA 300.0
Calcium (Total)	45 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	13 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.067 mg/L	0.05	SM4500P-E
TKN	0.46 mg/L	0.4	SM4500N(Org)-D
TOC	5.2 mg/L	1	SM5310C

Lab ID #: AB40723	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	25.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0033 **USGS Hydrologic Unit:** 050902030506
Stream Name: Plum Creek **County:** Ripley
Description: SR 350 **Latitude:** 39 8 51.29511 **Longitude:** -85 15 22.04081
Drainage: 8.732 **Site Number:** 19T-018

SiteID: OML-05-0033 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39561
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	96.5 %		ASTM D888-09(C)
DO	8.41 mg/L		ASTM D888-09(C)
pH (Field)	7.83 SU		EPA 150.2
Specific Conductance (Field)	1162 umho/cm		SM2510B
Temperature	22 °C		SM2550B(2)
Turbidity (Hach)	2.81 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-23	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	110 mg/L	5	SM2320B
Chloride	240 mg/L	10	EPA 300.0
Hardness (as CaCO3)	240 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	2.5 mg/L	5	SM2540D
Solids, Total (TS)	720 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	690 mg/L	10	SM2540C
Sulfate	53 mg/L	2	EPA 300.0
Calcium (Total)	75 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	0.1 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	13 mg/L	2.5	SM4500NO3-F
Phosphorus, Total	0.086 mg/L	0.05	SM4500P-E
TKN	0.42 mg/L	0.4	SM4500N(Org)-D
TOC	4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39561	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	275.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0033 Sample Date: 8/13/2019 IDEM Sample #: AB38441
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	73.6 %		ASTM D888-09(C)
DO	7.38 mg/L		ASTM D888-09(C)
pH (Field)	7.83 SU		EPA 150.2
Specific Conductance (Field)	1111 umho/cm		SM2510B
Temperature	21.7 °C		SM2550B(2)
Turbidity (Hach)	3.36 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	6 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0033 Sample Date: 9/10/2019 IDEM Sample #: AB40478
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	88.3 %		ASTM D888-09(C)
DO	7.92 mg/L		ASTM D888-09(C)
pH (Field)	7.78 SU		EPA 150.2
Specific Conductance (Field)	1255 umho/cm		SM2510B
Temperature	20.5 °C		SM2550B(2)
Turbidity (Hach)	2.04 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-20	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	98 mg/L	5	SM2320B
Chloride	250 mg/L	10	EPA 300.0
Hardness (as CaCO3)	240 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	760 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	720 mg/L	10	SM2540C
Sulfate	59 mg/L	2	EPA 300.0
Calcium (Total)	77 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	17 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.088 mg/L	0.05	SM4500P-E
TKN	0.65 mg/L	0.4	SM4500N(Org)-D
TOC	4.3 mg/L	1	SM5310C

Lab ID #: AB40478	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	22.3 MPN/100mL	1	SM9223B

SiteID: OML-05-0033 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40715
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	81.6 %		ASTM D888-09(C)
DO	8.57 mg/L		ASTM D888-09(C)
pH (Field)	7.69 SU		EPA 150.2
Specific Conductance (Field)	1593 umho/cm		SM2510B
Temperature	13.1 °C		SM2550B(2)
Turbidity (Hach)	1.58 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-8	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	91 mg/L	5	SM2320B
Chloride	360 mg/L	20	EPA 300.0
Hardness (as CaCO3)	230 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	890 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	840 mg/L	10	SM2540C
Sulfate	63 mg/L	2	EPA 300.0
Calcium (Total)	72 mg/L	0.2	EPA 200.7
Magnesium (Total)	11 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	24 mg/L	2	SM4500NO3-F
Phosphorus, Total	0.16 mg/L	0.05	SM4500P-E
TKN	0.34 mg/L	0.4	SM4500N(Org)-D
TOC	5.1 mg/L	1	SM5310C

Lab ID #: AB40715	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	93.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0042 **USGS Hydrologic Unit:** 050902030506
Stream Name: Laughery Creek **County:** Ripley
Description: SR 350, Osgood Water Intake **Latitude:** 39 8 59.10005 **Longitude:** -85 15 13.40180
Drainage: 126.043 **Site Number:** 19T-019

SiteID: OML-05-0042 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39560
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	92.5 %		ASTM D888-09(C)
DO	7.74 mg/L		ASTM D888-09(C)
pH (Field)	7.97 SU		EPA 150.2
Specific Conductance (Field)	426 umho/cm		SM2510B
Temperature	24.2 °C		SM2550B(2)
Turbidity (Hach)	8.97 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-22	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	29 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	10 mg/L	5	SM2540D
Solids, Total (TS)	280 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	21 mg/L	1	EPA 300.0
Calcium (Total)	50 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.037 mg/L	0.05	SM4500P-E
TKN	0.54 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39560	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	5.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0042 **Sample Date:** 8/13/2019 **IDEM Sample #:** AB38428
Water Flow Type Run **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	51.1 %		ASTM D888-09(C)
DO	4.33 mg/L		ASTM D888-09(C)
pH (Field)	7.84 SU		EPA 150.2
Specific Conductance (Field)	426.7 umho/cm		SM2510B
Temperature	23.8 °C		SM2550B(2)
Turbidity (Hach)	12.1 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0042 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40477
Water Flow Type Glide **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	70.6 %		ASTM D888-09(C)
DO	6.25 mg/L		ASTM D888-09(C)
pH (Field)	7.22 SU		EPA 150.2
Specific Conductance (Field)	582 umho/cm		SM2510B
Temperature	21.3 °C		SM2550B(2)
Turbidity (Hach)	14.7 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-19	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	68 mg/L	4	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	16 mg/L	5	SM2540D
Solids, Total (TS)	330 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	42 mg/L	1	EPA 300.0
Calcium (Total)	47 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	13 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.16 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.042 mg/L	0.05	SM4500P-E
TKN	1 mg/L	0.4	SM4500N(Org)-D
TOC	5.3 mg/L	1	SM5310C

Lab ID #: AB40477	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	74.8 MPN/100mL	1	SM9223B

SiteID: OML-05-0042 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40714
Water Flow Type Pool **Water Appearance** Green **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: low flow, very pooled (as usual)

Lab ID #:	Result	Reporting Limit	Method
% Sat	40.1 %		ASTM D888-09(C)
DO	3.89 mg/L		ASTM D888-09(C)
pH (Field)	7.41 SU		EPA 150.2
Specific Conductance (Field)	586 umho/cm		SM2510B
Temperature	16.7 °C		SM2550B(2)
Turbidity (Hach)	13 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-7	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	71 mg/L	4	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	13 mg/L	5	SM2540D
Solids, Total (TS)	350 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	43 mg/L	1	EPA 300.0
Calcium (Total)	47 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.12 mg/L	0.05	SM4500P-E
TKN	0.55 mg/L	0.4	SM4500N(Org)-D
TOC	4.9 mg/L	1	SM5310C

Lab ID #: AB40714	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	30.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0034 **USGS Hydrologic Unit:** 050902030506
Stream Name: Castators Creek **County:** Ripley
Description: SR 350 **Latitude:** 39 8 59.63440 **Longitude:** -85 14 34.94307
Drainage: 7.371 **Site Number:** 19T-020

SiteID: OML-05-0034 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39559
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	86 %		ASTM D888-09(C)
DO	7.62 mg/L		ASTM D888-09(C)
pH (Field)	7.83 SU		EPA 150.2
Specific Conductance (Field)	269 umho/cm		SM2510B
Temperature	21.2 °C		SM2550B(2)
Turbidity (Hach)	4.57 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-21	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	6 mg/L	1	EPA 300.0
Hardness (as CaCO3)	130 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4 mg/L	5	SM2540D
Solids, Total (TS)	160 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	170 mg/L	10	SM2540C
Sulfate	2.4 mg/L	0.2	EPA 300.0
Calcium (Total)	41 mg/L	0.2	EPA 200.7
Magnesium (Total)	6.2 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.14 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.7 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	3.8 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39559	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	101.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0034 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38440
Water Flow Type Run **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	76.6 %		ASTM D888-09(C)
DO	6.92 mg/L		ASTM D888-09(C)
pH (Field)	7.92 SU		EPA 150.2
Specific Conductance (Field)	256.5 umho/cm		SM2510B
Temperature	20.2 °C		SM2550B(2)
Turbidity (Hach)	6.43 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0034 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40476
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	75.4 %		ASTM D888-09(C)
DO	6.91 mg/L		ASTM D888-09(C)
pH (Field)	7.93 SU		EPA 150.2
Specific Conductance (Field)	267 umho/cm		SM2510B
Temperature	19.8 °C		SM2550B(2)
Turbidity (Hach)	6.15 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-18	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	110 mg/L	5	SM2320B
Chloride	5.6 mg/L	1	EPA 300.0
Hardness (as CaCO3)	130 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	16 mg/L	5	SM2540D
Solids, Total (TS)	180 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	180 mg/L	10	SM2540C
Sulfate	1.8 mg/L	0.2	EPA 300.0
Calcium (Total)	42 mg/L	0.2	EPA 200.7
Magnesium (Total)	5.7 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.6 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.028 mg/L	0.05	SM4500P-E
TKN	0.38 mg/L	0.4	SM4500N(Org)-D
TOC	5.2 mg/L	1	SM5310C

Lab ID #: AB40476	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	68.9 MPN/100mL	1	SM9223B

SiteID: OML-05-0034 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40713
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	70.5 %		ASTM D888-09(C)
DO	7.22 mg/L		ASTM D888-09(C)
pH (Field)	7.65 SU		EPA 150.2
Specific Conductance (Field)	244 umho/cm		SM2510B
Temperature	14.2 °C		SM2550B(2)
Turbidity (Hach)	4.86 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-6	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	110 mg/L	5	SM2320B
Chloride	3.7 mg/L	0.2	EPA 300.0
Hardness (as CaCO3)	120 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	100 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	120 mg/L	10	SM2540C
Sulfate	1.3 mg/L	0.2	EPA 300.0
Calcium (Total)	38 mg/L	0.2	EPA 200.7
Magnesium (Total)	5.1 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.8 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.035 mg/L	0.05	SM4500P-E
TKN	0.55 mg/L	0.4	SM4500N(Org)-D
TOC	5.4 mg/L	1	SM5310C

Lab ID #: AB40713	Result	Reporting Limit	Method
Coliforms (Total)	2419.6 MPN/100mL	1	SM9223B
E. coli	45 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0012 **USGS Hydrologic Unit:** 050902030507
Stream Name: Laughery Creek **County:** Ripley
Description: CR 450 N **Latitude:** 39 8 24.22718 **Longitude:** -85 14 58.64216
Drainage: 142.604 **Site Number:** 19T-021

SiteID: OML-05-0012 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39562
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	81.9 %		ASTM D888-09(C)
DO	6.82 mg/L		ASTM D888-09(C)
pH (Field)	7.73 SU		EPA 150.2
Specific Conductance (Field)	460 umho/cm		SM2510B
Temperature	24.4 °C		SM2550B(2)
Turbidity (Hach)	9.03 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-24	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	42 mg/L	2	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	10 mg/L	5	SM2540D
Solids, Total (TS)	310 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	280 mg/L	10	SM2540C
Sulfate	21 mg/L	1	EPA 300.0
Calcium (Total)	51 mg/L	0.2	EPA 200.7
Magnesium (Total)	11 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.63 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.044 mg/L	0.05	SM4500P-E
TKN	0.59 mg/L	0.4	SM4500N(Org)-D
TOC	4.2 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39562	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	49.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0012 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38439
Water Flow Type Stagnant **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Oil sheen and surface bubbles present throughout reach. no visible impedence.

Lab ID #:	Result	Reporting Limit	Method
% Sat	98.3 %		ASTM D888-09(C)
DO	8.25 mg/L		ASTM D888-09(C)
pH (Field)	7.98 SU		EPA 150.2
Specific Conductance (Field)	468 umho/cm		SM2510B
Temperature	24.1 °C		SM2550B(2)
Turbidity (Hach)	6.78 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0012 **Sample Date:** 9/10/2019 **IDEM Sample #:** AB40479
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	75.3 %		ASTM D888-09(C)
DO	6.61 mg/L		ASTM D888-09(C)
pH (Field)	7.61 SU		EPA 150.2
Specific Conductance (Field)	591 umho/cm		SM2510B
Temperature	21.7 °C		SM2550B(2)
Turbidity (Hach)	9.66 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-21	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	74 mg/L	4	EPA 300.0
Hardness (as CaCO3)	170 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	5.5 mg/L	5	SM2540D
Solids, Total (TS)	390 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	370 mg/L	10	SM2540C
Sulfate	40 mg/L	1	EPA 300.0
Calcium (Total)	49 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	0.15 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.4 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.041 mg/L	0.05	SM4500P-E
TKN	0.65 mg/L	0.4	SM4500N(Org)-D
TOC	4.8 mg/L	1	SM5310C

Lab ID #: AB40479	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	91 MPN/100mL	1	SM9223B

SiteID: OML-05-0012 **Sample Date:** 10/8/2019 **IDEM Sample #:** AB40716
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	100.1 %		ASTM D888-09(C)
DO	9.92 mg/L		ASTM D888-09(C)
pH (Field)	7.78 SU		EPA 150.2
Specific Conductance (Field)	1046 umho/cm		SM2510B
Temperature	15.9 °C		SM2550B(2)
Turbidity (Hach)	7.41 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-9	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	140 mg/L	5	SM2320B
Chloride	210 mg/L	20	EPA 300.0
Hardness (as CaCO3)	200 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	5.5 mg/L	5	SM2540D
Solids, Total (TS)	650 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	570 mg/L	10	SM2540C
Sulfate	47 mg/L	1	EPA 300.0
Calcium (Total)	61 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	4.8 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.033 mg/L	0.05	SM4500P-E
TKN	0.6 mg/L	0.4	SM4500N(Org)-D
TOC	5.3 mg/L	1	SM5310C

Lab ID #: AB40716	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	201.4 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0035 **USGS Hydrologic Unit:** 050902030502
Stream Name: Trib of Little Laughery Cr **County:** Franklin
Description: Huntersville Rd **Latitude:** 39 18 26.16139 **Longitude:** -85 14 5.17977
Drainage: 3.482 **Site Number:** 19T-022

SiteID: OML-05-0035 **Sample Date:** 8/5/2019 **IDEM Sample #:** AB39557
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Small piles of asphalt dropped into stream at bridge. A sheen around the piles was observed at the surface. Sampled upstream to avoid contamination. Very low flow from upstream dam structure. field calibration DO at 4.3 mg/L.

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	44.1 %		ASTM D888-09(C)
DO	3.86 mg/L		ASTM D888-09(C)
pH (Field)	7.48 SU		EPA 150.2
Specific Conductance (Field)	565 umho/cm		SM2510B
Temperature	21.6 °C		SM2550B(2)
Turbidity (Hach)	2.49 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #: 500-167907-2</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	73 mg/L	2	EPA 300.0
Hardness (as CaCO3)	200 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	3.5 mg/L	5	SM2540D
Solids, Total (TS)	310 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	14 mg/L	2	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	16 mg/L	0.1	EPA 200.7
COD	26 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.029 mg/L	0.05	SM4500P-E
TKN	0.55 mg/L	0.4	SM4500N(Org)-D
TOC	4.6 mg/L	1	SM5310C

<u>Lab ID #: AB39557</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	86 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0035 **Sample Date:** 8/12/2019 **IDEM Sample #:** AB38438
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Sampled downstream of bridge and lowhead dam. Sampled right side of bank while facing downstream for MHAB. Asphalt deposits near bridge. Replaced turbidity meter (Q3) batteries.

Lab ID #:	Result	Reporting Limit	Method
% Sat	57.9 %		ASTM D888-09(C)
DO	5.15 mg/L		ASTM D888-09(C)
pH (Field)	7.77 SU		EPA 150.2
Specific Conductance (Field)	537 umho/cm		SM2510B
Temperature	21.087 °C		SM2550B(2)
Turbidity (Hach)	5.49 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: OML-05-0035 **Sample Date:** 9/9/2019 **IDEM Sample #:** AB40474
Water Flow Type Pool **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	84.7 %		ASTM D888-09(C)
DO	7.88 mg/L		ASTM D888-09(C)
pH (Field)	7.71 SU		EPA 150.2
Specific Conductance (Field)	425 umho/cm		SM2510B
Temperature	18.9 °C		SM2550B(2)
Turbidity (Hach)	3.13 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-2	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	47 mg/L	2	EPA 300.0
Hardness (as CaCO3)	190 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	270 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	55 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	23 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.44 mg/L	0.4	SM4500N(Org)-D
TOC	4.9 mg/L	1	SM5310C

Lab ID #: AB40474	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	32.7 MPN/100mL	1	SM9223B

SiteID: OML-05-0035 **Sample Date:** 10/7/2019 **IDEM Sample #:** AB40711
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments: Algae mats under bridge

Lab ID #:	Result	Reporting Limit	Method
% Sat	68.1 %		ASTM D888-09(C)
DO	6.63 mg/L		ASTM D888-09(C)
pH (Field)	7.41 SU		EPA 150.2
Specific Conductance (Field)	571 umho/cm		SM2510B
Temperature	16.6 °C		SM2550B(2)
Turbidity (Hach)	4.52 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-4	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	87 mg/L	5	EPA 300.0
Hardness (as CaCO3)	180 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	13 mg/L	5	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	13 mg/L	1	EPA 300.0
Calcium (Total)	48 mg/L	0.2	EPA 200.7
Magnesium (Total)	15 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.58 mg/L	0.05	SM4500P-E
TKN	0.42 mg/L	0.4	SM4500N(Org)-D
TOC	6.5 mg/L	1	SM5310C

Lab ID #: AB40711	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1986.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0036 **USGS Hydrologic Unit:** 050902030504
Stream Name: Trib of Ripley Cr **County:** Ripley
Description: CR 950 N **Latitude:** 39 12 34.61357 **Longitude:** -85 11 42.88160
Drainage: 3.229 **Site Number:** 19T-023

SiteID: OML-05-0036 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39553
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	45.9 %		ASTM D888-09(C)
DO	4.2 mg/L		ASTM D888-09(C)
pH (Field)	7.49 SU		EPA 150.2
Specific Conductance (Field)	481 umho/cm		SM2510B
Temperature	20.5 °C		SM2550B(2)
Turbidity (Hach)	8.1 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 500-167907-16	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	240 mg/L	5	SM2320B
Chloride	7.6 mg/L	1	EPA 300.0
Hardness (as CaCO3)	260 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	8 mg/L	5	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	9.5 mg/L	1	EPA 300.0
Calcium (Total)	77 mg/L	0.2	EPA 200.7
Magnesium (Total)	16 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	0.25 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.077 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	1.1 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

<u>Lab ID #:</u> AB39553	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	39.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0036

Sample Date: 8/12/2019

IDEM Sample #: AB38437

Water Flow Type Pool

Water Appearance Clear

Water Depth Algae?

Water Flow (cf/sec):

Flow Estimated?

Aquatic Life?

Canopy Closed % 0-20%

Sampler Comments: Stream reduced to one pool at bridge, 20 x 4 ft. No water for at least 50 m upstream of this pool.

Lab ID #:	Result	Reporting Limit	Method
% Sat	41.6 %		ASTM D888-09(C)
DO	3.65 mg/L		ASTM D888-09(C)
pH (Field)	7.68 SU		EPA 150.2
Specific Conductance (Field)	445.3 umho/cm		SM2510B
Temperature	21.8 °C		SM2550B(2)
Turbidity (Hach)	12.1 NTU		EPA 180.1
Air Temp	Lookup		Observation
Sky Conditions	Lookup		Observation
Wind Direction	Lookup		Observation
Wind Strength	Lookup		Observation

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0040 **USGS Hydrologic Unit:** 050902030503
Stream Name: Trib of Ripley Cr **County:** Ripley
Description: N Spades Rd **Latitude:** 39 12 11.37145 **Longitude:** -85 7 55.62252
Drainage: 3.944 **Site Number:** 19T-027

SiteID: OML-05-0040 **Sample Date:** 8/6/2019 **IDEM Sample #:** AB39558
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	87.2 %		ASTM D888-09(C)
DO	7.75 mg/L		ASTM D888-09(C)
pH (Field)	7.99 SU		EPA 150.2
Specific Conductance (Field)	541 umho/cm		SM2510B
Temperature	21.1 °C		SM2550B(2)
Turbidity (Hach)	5.56 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #: 500-167907-20</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	240 mg/L	5	SM2320B
Chloride	18 mg/L	1	EPA 300.0
Hardness (as CaCO3)	300 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	360 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	340 mg/L	10	SM2540C
Sulfate	28 mg/L	1	EPA 300.0
Calcium (Total)	82 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	7.8 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.59 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.33 mg/L	0.4	SM4500N(Org)-D
TOC	1.8 mg/L	1	SM5310C

<u>Lab ID #: AB39558</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	727 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: OML-05-0040 Sample Date: 8/12/2019 IDEM Sample #: AB38429
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	93.5 %		ASTM D888-09(C)
DO	8.36 mg/L		ASTM D888-09(C)
pH (Field)	8.08 SU		EPA 150.2
Specific Conductance (Field)	550 umho/cm		SM2510B
Temperature	20.8 °C		SM2550B(2)
Turbidity (Hach)	4.18 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: OML-05-0040 Sample Date: 9/10/2019 IDEM Sample #: AB40475
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	95.8 %		ASTM D888-09(C)
DO	8.73 mg/L		ASTM D888-09(C)
pH (Field)	8 SU		EPA 150.2
Specific Conductance (Field)	553 umho/cm		SM2510B
Temperature	19.8 °C		SM2550B(2)
Turbidity (Hach)	2.86 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-169836-17

	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	240 mg/L	5	SM2320B
Chloride	20 mg/L	1	EPA 300.0
Hardness (as CaCO3)	280 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	330 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	32 mg/L	1	EPA 300.0
Calcium (Total)	77 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	6.6 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.47 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	< 0.05 mg/L	0.05	SM4500P-E
TKN	0.32 mg/L	0.4	SM4500N(Org)-D
TOC	2.3 mg/L	1	SM5310C

Lab ID #: AB40475

	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	686.7 MPN/100mL	1	SM9223B

SiteID: OML-05-0040

Sample Date: 10/8/2019

IDEM Sample #: AB40712

Water Flow Type Run

Water Appearance Clear

Water Depth Algae?

Water Flow (cf/sec):

Flow Estimated?

Aquatic Life?

Canopy Closed % 0-20%

Sampler Comments:

Lab ID #:

	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	86.3 %		ASTM D888-09(C)
DO	8.97 mg/L		ASTM D888-09(C)
pH (Field)	8.03 SU		EPA 150.2
Specific Conductance (Field)	560 umho/cm		SM2510B
Temperature	13.5 °C		SM2550B(2)
Turbidity (Hach)	1.78 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID #: 500-171433-5	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	250 mg/L	5	SM2320B
Chloride	22 mg/L	1	EPA 300.0
Hardness (as CaCO3)	270 mg/L	0.91	SM2340B
Solids, Suspended Total, (TSS)	2 mg/L	5	SM2540D
Solids, Total (TS)	340 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	29 mg/L	1	EPA 300.0
Calcium (Total)	72 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	11 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.17 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.045 mg/L	0.05	SM4500P-E
TKN	0.27 mg/L	0.4	SM4500N(Org)-D
TOC	3.1 mg/L	1	SM5310C

Lab ID #: AB40712	Result	Reporting Limit	Method
Coliforms (Total)	2419.6 MPN/100mL	1	SM9223B
E. coli	770.1 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	