

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

**SiteID:** WL190-0010      **USGS Hydrologic Unit:** 051201081504  
**Stream Name:** Big Raccoon Creek      **County:** Parke  
**Description:** CR 600 West      **Latitude:** 39 45 34.24778      **Longitude:** -87 21 3.83528  
**Drainage:**      **Site Number:** 23T-001

**SiteID:** WL190-0010      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53448  
**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	96.2 %		ASTM D888-09(C)
DO	11.2 mg/L		ASTM D888-09(C)
pH (Field)	8.15 SU		EPA 150.2
Specific Conductance (Field)	371 umho/cm		SM2510B
Temperature	8.7 °C		SM2550B(2)
Turbidity (Hach)	15.9 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 50331050004	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	149 mg/L	10	SM2320B
Chloride	15 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	180 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	21.1 mg/L	3.1	SM2540D
Solids, Total (TS)	209 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	193 mg/L	10	SM2540C
Sulfate	14.7 mg/L	0.25	EPA 300.0
Calcium (Total)	40100 ug/L	1000	EPA 200.7
Magnesium (Total)	19400 ug/L	1000	EPA 200.7
COD	15.4 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.38 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	0.95 mg/L	0.5	EPA 351.2
TOC	3.6 mg/L	1	SM5310C

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

SiteID: WLV190-0010      Sample Date: 12/15/2022      IDEM Sample #: AB53726  
 Water Flow Type Run      Water Appearance Green      Water Depth  Algae?  
 Water Flow (cf/sec):  Flow Estimated?       Aquatic Life?      Canopy Closed % 0-20%  
 Sampler Comments:

Lab ID #:	Result	Reporting Limit	Method
% Sat	90.5 %		ASTM D888-09(C)
DO	11.03 mg/L		ASTM D888-09(C)
pH (Field)	8.74 SU		EPA 150.2
Specific Conductance (Field)	480.7 umho/cm		SM2510B
Temperature	6.8 °C		SM2550B(2)
Turbidity (Hach)	12.6 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #: 50333676003	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	208 mg/L	10	SM2320B
Chloride	12.8 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	247 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	2.5	SM2540D
Solids, Total (TS)	281 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	26.9 mg/L	2.5	EPA 300.0
Calcium (Total)	63800 ug/L	1000	EPA 200.7
Magnesium (Total)	21300 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.72 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	< 0.5 mg/L	0.5	EPA 351.2
TOC	3.1 mg/L	1	SM5310C

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

SiteID: WLV190-0010

Sample Date: 1/10/2023

IDEM Sample #: AB57982

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	94.8 %		ASTM D888-09(C)
DO	12.24 mg/L		ASTM D888-09(C)
pH (Field)	8.06 SU		EPA 150.2
Specific Conductance (Field)	511 umho/cm		SM2510B
Temperature	4.5 °C		SM2550B(2)
Turbidity (Hach)	4.54 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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:** WL190-0003      **USGS Hydrologic Unit:** 051201081503  
**Stream Name:** Big Raccoon Creek      **County:** Parke  
**Description:** CR 325 West      **Latitude:** 39 39 9.00000      **Longitude:** -87 17 38.00000  
**Drainage:** 448      **Site Number:** 23T-006

**SiteID:** WL190-0003      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53449  
**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	98.2 %		ASTM D888-09(C)
DO	11.19 mg/L		ASTM D888-09(C)
pH (Field)	8.05 SU		EPA 150.2
Specific Conductance (Field)	339.9 umho/cm		SM2510B
Temperature	9.6 °C		SM2550B(2)
Turbidity (Hach)	14.1 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 50331050005	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	147 mg/L	10	SM2320B
Chloride	14.8 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	172 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	17.8 mg/L	5	SM2540D
Solids, Total (TS)	225 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	185 mg/L	10	SM2540C
Sulfate	13.9 mg/L	0.25	EPA 300.0
Calcium (Total)	38100 ug/L	1000	EPA 200.7
Magnesium (Total)	18700 ug/L	1000	EPA 200.7
COD	11 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.33 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	0.79 mg/L	0.5	EPA 351.2
TOC	3.6 mg/L	1	SM5310C

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

SiteID: WLV190-0003      Sample Date: 12/15/2022      IDEM Sample #: AB53725  
 Water Flow Type Run      Water Appearance Brown      Water Depth  Algae?  
 Water Flow (cf/sec):  Flow Estimated?       Aquatic Life?      Canopy Closed % 0-20%  
 Sampler Comments: Blue/green hue

Lab ID #:	Result	Reporting Limit	Method
% Sat	88.7 %		ASTM D888-09(C)
DO	10.78 mg/L		ASTM D888-09(C)
pH (Field)	9.11 SU		EPA 150.2
Specific Conductance (Field)	458.8 umho/cm		SM2510B
Temperature	6.9 °C		SM2550B(2)
Turbidity (Hach)	8.98 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #: 50333676002	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	201 mg/L	10	SM2320B
Chloride	12.8 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	238 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	6.8 mg/L	2.5	SM2540D
Solids, Total (TS)	281 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	232 mg/L	10	SM2540C
Sulfate	22 mg/L	2.5	EPA 300.0
Calcium (Total)	62000 ug/L	1000	EPA 200.7
Magnesium (Total)	20200 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.85 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	0.63 mg/L	0.5	EPA 351.2
TOC	2.9 mg/L	1	SM5310C

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

SiteID: WLV190-0003

Sample Date: 1/10/2023

IDEM Sample #: AB57981

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 %		ASTM D888-09(C)
DO	12.24 mg/L		ASTM D888-09(C)
pH (Field)	8.06 SU		EPA 150.2
Specific Conductance (Field)	481 umho/cm		SM2510B
Temperature	3.8 °C		SM2550B(2)
Turbidity (Hach)	4.45 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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:** WLV-15-0006      **USGS Hydrologic Unit:** 051201081503  
**Stream Name:** Rock Run      **County:** Parke  
**Description:** CR 325 West      **Latitude:** 39 39 43.35924      **Longitude:** -87 17 40.75221  
**Drainage:**      **Site Number:** 23T-007

**SiteID:** WLV-15-0006      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53450  
**Water Flow Type** Run      **Water Appearance** Brown      **Water Depth**  **Algae?**  
**Water Flow (cf/sec):**       **Flow Estimated?**       **Aquatic Life?**      **Canopy Closed %** 0-20%  
**Sampler Comments:** Heavy erosion. Tractor or ATV evidence. Heavy sedimentation west side of covered bridge.

<u>Lab ID #:</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	92.6 %		ASTM D888-09(C)
DO	12.64 mg/L		ASTM D888-09(C)
pH (Field)	8 SU		EPA 150.2
Specific Conductance (Field)	519 umho/cm		SM2510B
Temperature	2.4 °C		SM2550B(2)
Turbidity (Hach)	4.19 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 50331050006	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	266 mg/L	10	SM2320B
Chloride	6.7 mg/L	0.25	EPA 300.0
Hardness (as CaCO3)	299 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	< 2.5 mg/L	2.5	SM2540D
Solids, Total (TS)	321 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	311 mg/L	10	SM2540C
Sulfate	33.3 mg/L	2.5	EPA 300.0
Calcium (Total)	76800 ug/L	1000	EPA 200.7
Magnesium (Total)	26000 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	< 0.5 mg/L	0.5	EPA 351.2
TOC	2.4 mg/L	1	SM5310C

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

**SiteID:** WLW-15-0006      **Sample Date:** 12/15/2022      **IDEM Sample #:** AB53724  
**Water Flow Type** Run      **Water Appearance** Brown      **Water Depth**  **Algae?**  
**Water Flow (cf/sec):**  **Flow Estimated?**       **Aquatic Life?**      **Canopy Closed %** 0-20%  
**Sampler Comments:** Excess sediment

<b>Lab ID #:</b>	<b>Result</b>	<b>Reporting Limit</b>	<b>Method</b>
% Sat	86.5 %		ASTM D888-09(C)
DO	10.77 mg/L		ASTM D888-09(C)
pH (Field)	7.99 SU		EPA 150.2
Specific Conductance (Field)	463 umho/cm		SM2510B
Temperature	5.9 °C		SM2550B(2)
Turbidity (Hach)	38.7 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

<b>Lab ID #: 50333676001</b>	<b>Result</b>	<b>Reporting Limit</b>	<b>Method</b>
Alkalinity (as CaCO3)	186 mg/L	10	SM2320B
Chloride	11.4 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	243 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	44.4 mg/L	5	SM2540D
Solids, Total (TS)	333 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	263 mg/L	10	SM2540C
Sulfate	39 mg/L	2.5	EPA 300.0
Calcium (Total)	63000 ug/L	1000	EPA 200.7
Magnesium (Total)	20800 ug/L	1000	EPA 200.7
COD	22.2 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.74 mg/L	0.1	EPA 353.2
Phosphorus, Total	0.12 mg/L	0.05	EPA 365.1
TKN	0.82 mg/L	0.5	EPA 351.2
TOC	6.9 mg/L	1	SM5310C



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

SiteID: WLV-15-0006

Sample Date: 1/10/2023

IDEM Sample #: AB57980

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	90.2 %		ASTM D888-09(C)
DO	12.45 mg/L		ASTM D888-09(C)
pH (Field)	8.24 SU		EPA 150.2
Specific Conductance (Field)	604 umho/cm		SM2510B
Temperature	2 °C		SM2550B(2)
Turbidity (Hach)	5.14 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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:** WLW-15-0007      **USGS Hydrologic Unit:** 051201081502  
**Stream Name:** Rocky Run      **County:** Parke  
**Description:** Arabia Road      **Latitude:** 39 46 19.80264      **Longitude:** -87 19 20.42222  
**Drainage:**      **Site Number:** 23T-011

**SiteID:** WLW-15-0007      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53446  
**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	99.6 %		ASTM D888-09(C)
DO	13.01 mg/L		ASTM D888-09(C)
pH (Field)	7.91 SU		EPA 150.2
Specific Conductance (Field)	700 umho/cm		SM2510B
Temperature	4 °C		SM2550B(2)
Turbidity (Hach)	0.55 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID #:</u> 50331050002	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	331 mg/L	10	SM2320B
Chloride	22.6 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	359 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	< 2.5 mg/L	2.5	SM2540D
Solids, Total (TS)	431 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	395 mg/L	10	SM2540C
Sulfate	41.9 mg/L	2.5	EPA 300.0
Calcium (Total)	90000 ug/L	1000	EPA 200.7
Magnesium (Total)	32500 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	EPA 353.2
Phosphorus, Total	0.055 mg/L	0.05	EPA 365.1
TKN	< 0.5 mg/L	0.5	EPA 351.2
TOC	1.1 mg/L	1	SM5310C

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

SiteID: WLV-15-0007      Sample Date: 12/15/2022      IDEM Sample #: AB53728  
 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	93.3 %		ASTM D888-09(C)
DO	11.36 mg/L		ASTM D888-09(C)
pH (Field)	8.53 SU		EPA 150.2
Specific Conductance (Field)	609 umho/cm		SM2510B
Temperature	6.8 °C		SM2550B(2)
Turbidity (Hach)	2.81 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #: 50333676005	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	249 mg/L	10	SM2320B
Chloride	23.5 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	290 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	< 2.5 mg/L	2.5	SM2540D
Solids, Total (TS)	372 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	343 mg/L	10	SM2540C
Sulfate	48.7 mg/L	2.5	EPA 300.0
Calcium (Total)	73500 ug/L	1000	EPA 200.7
Magnesium (Total)	25700 ug/L	1000	EPA 200.7
COD	13.9 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.18 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	< 0.5 mg/L	0.5	EPA 351.2
TOC	4.4 mg/L	1	SM5310C

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

SiteID: WLV-15-0007

Sample Date: 1/10/2023

IDEM Sample #: AB57984

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	100.5 %		ASTM D888-09(C)
DO	12.57 mg/L		ASTM D888-09(C)
pH (Field)	8.42 SU		EPA 150.2
Specific Conductance (Field)	678 umho/cm		SM2510B
Temperature	5.8 °C		SM2550B(2)
Turbidity (Hach)	0.82 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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:** WLV-15-0008      **USGS Hydrologic Unit:** 051201081502  
**Stream Name:** Leatherwood Creek      **County:** Parke  
**Description:** CR 40 North      **Latitude:** 39 46 24.41280      **Longitude:** -87 19 51.98520  
**Drainage:**      **Site Number:** 23T-012

**SiteID:** WLV-15-0008      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53447  
**Water Flow Type** Riffle      **Water Appearance** Clear      **Water Depth**  **Algae?**  
**Water Flow (cf/sec):**       **Flow Estimated?**       **Aquatic Life?**      **Canopy Closed %** 0-20%  
**Sampler Comments:**

<b>Lab ID #:</b>	<b>Result</b>	<b>Reporting Limit</b>	<b>Method</b>
% Sat	107.9 %		ASTM D888-09(C)
DO	13.92 mg/L		ASTM D888-09(C)
pH (Field)	8.22 SU		EPA 150.2
Specific Conductance (Field)	594 umho/cm		SM2510B
Temperature	4.5 °C		SM2550B(2)
Turbidity (Hach)	0.8 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	1 Lookup		Observation

<b>Lab ID #: 50331050003</b>	<b>Result</b>	<b>Reporting Limit</b>	<b>Method</b>
Alkalinity (as CaCO3)	285 mg/L	10	SM2320B
Chloride	16 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	319 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	< 2.5 mg/L	2.5	SM2540D
Solids, Total (TS)	336 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	333 mg/L	10	SM2540C
Sulfate	34.2 mg/L	2.5	EPA 300.0
Calcium (Total)	75500 ug/L	1000	EPA 200.7
Magnesium (Total)	31600 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	0.13 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	0.52 mg/L	0.5	EPA 351.2
TOC	1.8 mg/L	1	SM5310C

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

SiteID: WLW-15-0008      Sample Date: 12/15/2022      IDEM Sample #: AB53727  
 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	91.6 %		ASTM D888-09(C)
DO	11.26 mg/L		ASTM D888-09(C)
pH (Field)	8.52 SU		EPA 150.2
Specific Conductance (Field)	558 umho/cm		SM2510B
Temperature	6.4 °C		SM2550B(2)
Turbidity (Hach)	3.57 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #: 50333676004	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	247 mg/L	10	SM2320B
Chloride	14.4 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	295 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	2.5	SM2540D
Solids, Total (TS)	334 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	301 mg/L	10	SM2540C
Sulfate	33.6 mg/L	2.5	EPA 300.0
Calcium (Total)	71500 ug/L	1000	EPA 200.7
Magnesium (Total)	28200 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	1.1 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	< 0.5 mg/L	0.5	EPA 351.2
TOC	2.9 mg/L	1	SM5310C

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

SiteID: WLV-15-0008

Sample Date: 1/10/2023

IDEM Sample #: AB57983

Water Flow Type Run

Water Appearance Clear

Water Depth  Algae?

Water Flow (cf/sec):

Flow Estimated?

Aquatic Life?

Canopy Closed % 0-20%

Sampler Comments: Pool of algae.

Lab ID #:	Result	Reporting Limit	Method
% Sat	97.3 %		ASTM D888-09(C)
DO	12.59 mg/L		ASTM D888-09(C)
pH (Field)	8.08 SU		EPA 150.2
Specific Conductance (Field)	648 umho/cm		SM2510B
Temperature	4.4 °C		SM2550B(2)
Turbidity (Hach)	1.12 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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:** WLV-15-0012      **USGS Hydrologic Unit:** 051201081501  
**Stream Name:** Leatherwood Creek      **County:** Parke  
**Description:** Hill Top Road      **Latitude:** 39 49 19.03199      **Longitude:** -87 16 25.14550  
**Drainage:**      **Site Number:** 23T-016

**SiteID:** WLV-15-0012      **Sample Date:** 11/14/2022      **IDEM Sample #:** AB53445  
**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	114.4 %		ASTM D888-09(C)
DO	15.51 mg/L		ASTM D888-09(C)
pH (Field)	8.08 SU		EPA 150.2
Specific Conductance (Field)	621 umho/cm		SM2510B
Temperature	2.6 °C		SM2550B(2)
Turbidity (Hach)	0.69 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	9 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #:</u> 50331050001	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	286 mg/L	10	SM2320B
Chloride	20.9 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	322 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	< 2.5 mg/L	2.5	SM2540D
Solids, Total (TS)	369 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	348 mg/L	10	SM2540C
Sulfate	30.3 mg/L	2.5	EPA 300.0
Calcium (Total)	77200 ug/L	1000	EPA 200.7
Magnesium (Total)	31400 ug/L	1000	EPA 200.7
COD	< 10 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	1 mg/L	0.1	EPA 353.2
Phosphorus, Total	< 0.05 mg/L	0.05	EPA 365.1
TKN	0.5 mg/L	0.5	EPA 351.2
TOC	2.1 mg/L	1	SM5310C



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

SiteID: WLV-15-0012      Sample Date: 12/15/2022      IDEM Sample #: AB53729  
 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	97.2 %		ASTM D888-09(C)
DO	12.03 mg/L		ASTM D888-09(C)
pH (Field)	8.55 SU		EPA 150.2
Specific Conductance (Field)	573 umho/cm		SM2510B
Temperature	6.1 °C		SM2550B(2)
Turbidity (Hach)	5.95 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #: 50333676006	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	239 mg/L	10	SM2320B
Chloride	20.5 mg/L	2.5	EPA 300.0
Hardness (as CaCO3)	277 mg/L	10	SM2340B
Solids, Suspended Total, (TSS)	3 mg/L	2.5	SM2540D
Solids, Total (TS)	345 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	306 mg/L	10	SM2540C
Sulfate	31.2 mg/L	2.5	EPA 300.0
Calcium (Total)	69300 ug/L	1000	EPA 200.7
Magnesium (Total)	25200 ug/L	1000	EPA 200.7
COD	18.5 mg/L	10	EPA 410.4
Nitrogen, Ammonia	< 0.1 mg/L	0.1	EPA 350.1
Nitrogen, Nitrate+Nitrite	1.6 mg/L	0.1	EPA 353.2
Phosphorus, Total	0.065 mg/L	0.05	EPA 365.1
TKN	0.66 mg/L	0.5	EPA 351.2
TOC	5.4 mg/L	1	SM5310C

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

SiteID: WLV-15-0012

Sample Date: 1/10/2023

IDEM Sample #: AB57985

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	118.8 %		ASTM D888-09(C)
DO	15.27 mg/L		ASTM D888-09(C)
pH (Field)	8.77 SU		EPA 150.2
Specific Conductance (Field)	670 umho/cm		SM2510B
Temperature	4.7 °C		SM2550B(2)
Turbidity (Hach)	1.06 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	0 Lookup		Observation
Wind Strength	0 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	