

## 2012 Study Plan for the Mill Creek Watershed (Union and Logan counties, OH)

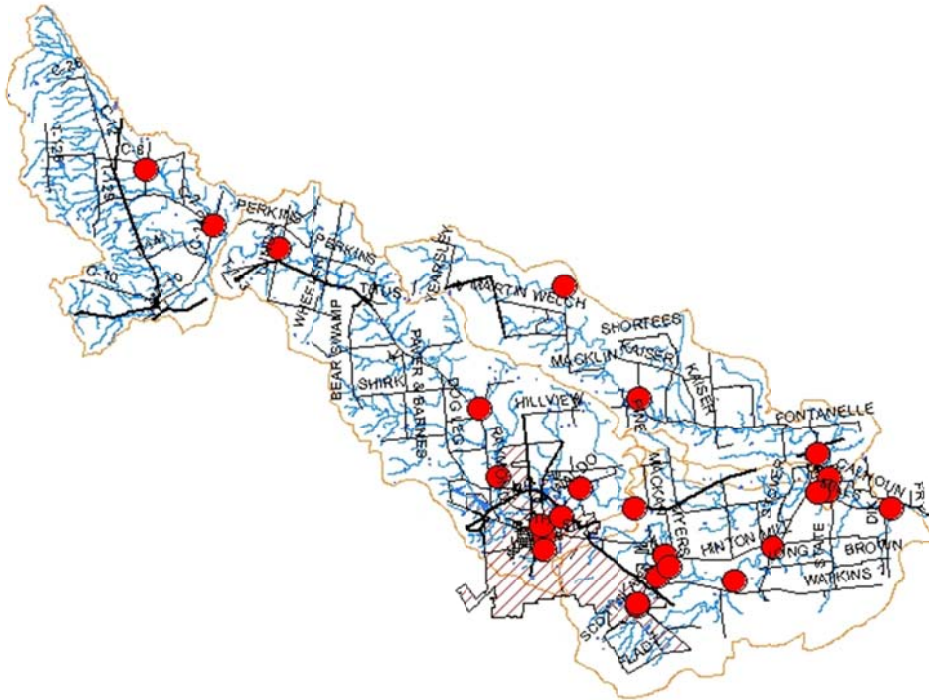


Figure 1. Study area for the Mill Creek watershed, 2012.

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## Introduction

As part of the five-year basin approach for NPDES permitting and the TMDL process, an intensive ambient assessment will be conducted during the 2012 field sampling season within the Mill Creek watershed. The study area will include all tributaries having a drainage area approximately 8.0 miles<sup>2</sup> or greater (Fig. 1). A total of 25 sampling stations will be completed in the Mill Creek study area. Ambient biology, macrohabitat quality, and water column chemistry will be collected from each site, which will be sampled for water column chemistry, Datasonde®, or WWTP effluent chemistry only. Fish tissue samples will be collected at four sites (Table 3).

A geometric site selection methodology was employed to derive the initial station list. This method has proved efficient in generating an objective and comprehensive collection of potential sampling sites where an assessment of an entire catchment is desired. However, a negative and unavoidable consequence of the geometric selection method includes substantial data gaps in lower or larger stream segments. It was therefore necessary to directly target these higher order segments (or tributaries) to ensure an even distribution of sampling effort. Lastly, many of the areas that have been previously sampled and evaluated by the Ohio EPA will be revisited for the purposes of trends assessment. A list of field sampling stations can be found in Table 2.

### Sampling Objectives

- 1 Systematically sample and assess the principal drainage networks of the Mill Creek watershed in support of the TMDL process,
- 2 Gather ambient environmental information (biological, chemical, and physical) from designated water bodies, to assess current Beneficial Uses (e.g., aquatic life, recreational, water supply), Table 2,
- 3 Collect fish tissue samples at selected stations as listed in Table 3,

- 4 Verify the appropriateness of existing, unverified, Beneficial Use Designations,
- 5 Establish baseline ambient biological conditions at selected reference stations to evaluate the effectiveness of future pollution abatement efforts, and
- 6 Document any changes in biological, chemical, and physical conditions of the study areas where historical information exists, thus expanding the Ohio EPA data base for statewide trends analysis (e.g., 305[b]).

### **Total Maximum Daily Load (TMDL)**

Information collected as part of this survey will support TMDL development for this study area. The objectives of the TMDL process are to estimate pollutant loads from the various sources within the basin, define or characterize allowable loads to support the various beneficial uses, and to allocate pollutant loads among different pollutant sources through appropriate controls (e.g., NPDES permitting, storm water management, 319 proposals, NPS controls or other abatement strategies).

The components of the TMDL process supported by this survey are primarily the identification of impaired waters, verification (and redesignating if necessary) of beneficial use designations, and sources of use impairment. These data are necessary precursors to the development of effective control or abatement strategies.

### **Aquatic Life Use Designations**

Many of the streams contained within the study area are designated WWH (Warm Water Habitat). The Ohio EPA is obligated to review, evaluate, or recommend (where appropriate) Beneficial Uses prior to basing any permitting actions on existing, unverified designations, or entirely unclassified water bodies. Much of the sampling effort for this survey is allocated to fulfill this obligation.

**Study Planning Team: Assigned DSW Staff**

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\*Please contact Ben Rich for any updates to this study plan

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**Table 1.** Facilities regulated by the National Pollutant Discharge elimination system which discharge to Mill Creek watershed.

OEPA NO	FACILITY	OUTFALL	TYPE	2011 FLOW (mgd)	STREAM	COUNTY	LATITUDE	LONGITUDE
1PZ00023	Benjamin Logan High School	1	SAN	0.018	U.T. Mill C.	Logan	40.41188000	-83.65098000
4PH00037	Liberty Twp Regional Treatment Facility	1	SAN	NA	Mill C.	Union	40.31556763	-83.43805152
4PE00002	Marysville WRF	1	SAN	3.26	Mill C.	Union	40.21473000	-83.26303000
4IW00120	Marysville WTP	1	PWS	NA	Mill C.	Union	40.24173000	-83.36935000
4PG00036	Mill Creek Estates WWTP	1	SAN	0.117	Mill C.	Union	40.23144000	-83.30240000
4IN00038	Nestle R & D Center Inc Ohio	1	IND	0.055	Mill C.	Union	40.24261000	-83.37262000
4PV00014	New Dover Estates MHP	1	SAN	0.024	U.T. Dun R.	Delaware	40.25966000	-83.26808000
4PA00007	Ostrander WWTP	1	SAN	0.039	Mill C.	Delaware	40.25591000	-83.21095000
4PG00006	Parrott Village WWTP	1	SAN	0.032	Phelps R.	Union	40.29287000	-83.34601000
4PT00130	Raymond Elementary School	1	SAN	0.006	U.T. Mill C.	Union	40.33277778	-83.46444444
4IJ00013	Shelly Mat'ls Inc Ostrander	2	SW	5.860	U.T. Mill C.	Delaware	40.21215000	-83.20795000
4IJ00013	Shelly Mat'ls Inc Ostrander	1	SW	1.470	U.T. Mill C.	Union	40.21594000	-83.20635000
4IF00000	The Scotts Co	6	NCCW	NA	N.B. Crosses R.	Union	40.20345000	-83.31977000
4IF00000	The Scotts Co	106	SW	0.039	N.B. Crosses R.	Union	40.20357000	-83.31428000
4IF00000	The Scotts Co	105	SW	NA	Crosses R.	Union	40.20604000	-83.31439000
4IF00000	The Scotts Co	107	SW	NA	N.B. Crosses R.	Union	40.20687000	-83.32519000
4IF00000	The Scotts Co	104	SW	NA	Crosses R.	Union	40.20698000	-83.31539000
4IF00000	The Scotts Co	103	SW	0.021	Crosses R.	Union	40.20763000	-83.31600000
4IF00000	The Scotts Co	102	SW	0.013	N.B. Crosses R.	Union	40.20825000	-83.32166000
4IF00000	The Scotts Co	7	NCCW	NA	N.B. Crosses R.	Union	40.20828000	-83.32185000
4IM00102	United Rotary Brush Co Inc	1	SAN	0.001	Phelps R.	Union	40.29175000	-83.34381000

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**Table 2.** Mill Creek watershed sample locations, 2012.

Station ID	NAME	Basin	Stream	Trib	RM	DA	ALU	HUC	Lat	Long	Comments	F	B	C	Bac-T	S	E	D	DW	
V03W12	MILL CREEK N OF NORTH GREENFIELD @ T-131	02	109	000	42.56	11.1	WWH	05060001070010	40.388600	-83.588300	HIST GEO	x	x	x						
V03K07	MILL CREEK NE OF EAST LIBERTY @ CO. RD. 142	02	109	000	39.20	22.5	WWH	05060001070010	40.365000	-83.549900	HIST GEO	x	x	x	x	X			x	
V03W13	MILL CREEK S OF LUNDA @ BENNINGTON-NEWLAND RD.	02	109	000	36.05	38.0	WWH	05060001070020	40.355800	-83.514200	HIST GEO	x	x	x	x					
V03S17	Mill Creek @ Wheeler Green Rd	02	109	000	28.13	54.0	WWH	05060001070020	40.311880	-83.435594	HIST				x	x				
V03P14	MILL CREEK UPST. MARYSVILLE @ COTTON SLASH RD.	02	109	000	24.74	62.0	WWH	05060001070020	40.289200	-83.401100	HIST GEO	x	x	x	x				x	
301874	Mill Creek upst inflatable dam and water intake	02	109	000	21.65	65.0	WWH	05060001070020	40.260132	-83.390823	Upst Inflatable Dam Structure Access at park at end of Millwood Blvd off of SR 31	x	x	x						x
V03S07	MILL CREEK AT MARYSVILLE @ ST. RT. 4 (MAIN ST.)	02	109	000	19.00	80.0	WWH	05060001070020	40.240000	-83.366800	HIST, Partial Attain, upst Town Run	x	x	x					x	
301928	Mill Creek Upst. Cherry Street, Dst. Old sewage disposal and post dam removal	02	109	000	18.20	82.0	WWH	05060001070020	40.243198	-83.355904	Access off city park off Cherry street	x	x	x	x	x			x	

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<b>601350</b>	MILL CK OFF WALDO ROAD @ MARYSVILLE	02	109	000	16.80	88.0	WWH	05060001070020	40.255800	-83.345400	HIST, NON Attain, Dst Marysville WWTP. Access @ 17250 Waldo Rd, park @ back of drive and walk down the hill	x	x	x			x
<b>V03P19</b>	MILL CREEK E OF MARYSVILLE @ U.S. RT. 36	02	109	000	14.54	94.7	WWH	05060001070030	40.247200	-83.315000	HIST, For trends dnst NON Attain site above	x	x	x			x
<b>301925</b>	Mill Creek Estates WWTP Outfall Effluent Only	02	109	000	12.59	NA	WWH	05060001070030	40.231440	-83.302400	Effluent Only						x
<b>V03P20</b>	MILL CREEK DST. MARYSVILLE @ HINTON MILL RD.	02	109	000	12.17	102.0	WWH	05060001070030	40.227500	-83.298100	HIST Ust Crosses Run	x	x	x	x		x
<b>V03W07</b>	MILL CREEK DST. CROSSES RUN	02	109	000	11.70	107.0	WWH	05060001070030	40.222500	-83.295500	HIST, Partial Attain, Dst Crosses Run (Access from 13600 Watkins Rd, follow gravel drive to right of outbuilding across ford on Crosses Run to site) Permission given to all of us for the whole summer	x	x	x			x





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<b>V03S10</b>	BLUES CREEK @ LEEPER-PERKINS RD.	02	109	001	10.15	16.7	WWH	05060001070040	40.293800	-83.312800	HIST GEO	x	x	x			
<b>V06P12</b>	BLUES CREEK N OF OSTRANDER @ OSTRANDER RD.	02	109	001	2.00	33.8	WWH	05060001070040	40.270800	-83.214200	HIST GEO, N of Ostrander	x	x	x			
<b>V03P25</b>	BLUES CREEK DST. OSTRANDER @ OSTRANDER RD.	02	109	001	0.60	37.1	WWH	05060001070040	40.260800	-83.207800	HIST GEO, Dst Ostrander	x	x	x	x	x	x
<b>V03S18</b>	Crosses Run upst. Industrial Prkwy, dst Scotts, upst B Br	02	109	005	2.00	1.5	WWH	5060001070030	40.205799	-83.312500	dst Scotts	x	x	x			
<b>V03W06</b>	CROSSES RUN E OF MARYSVILLE @ WATKINS RD.	02	109	005	0.80	4.4	WWH	05060001070030	40.218600	-83.301900	HIST GEO	x	x	x		x	x
<b>V03W20</b>	N Br Crosses Run @ Scottslawn, dst Scotts	02	109	006	0.04	2.0	WWH	5060001070030	40.206902	-83.313202	dst Scotts	x	x	x			
<b>V03K10</b>	TOWN RUN AT MARYSVILLE @ WALNUT ST. (LOWER CROSSING)	02	109	015	0.75	1.3	WWH	05060001070020	40.229200	-83.365000	Sampled in 2009, NON Attain, Do we need to resample	x	x	x	x		
<b>V03G02</b>	TOWN RUN AT MARYSVILLE @ 5TH STREET, DST. CULVERT	02	109	015	0.21	1.7	WWH	05060001070020	40.236300	-83.365000	Sampled in 2009, NON Attain, Do we need to resample	x	x	x		x	x

**Sampling Key**

- F - Fish
- B -Macro
- C – Chemistry
- Bac-T - Bacteria
- S - Sediment
- E - WWTP Effluent Only Chem Sample
- D - Datasonde
- DW - Drinking Water

Table 3. Fish tissue sample locations for the Mill Creek watershed, 2012.

<b>Mill Creek (Scioto) Basin</b>		
<b>Stream</b>	<b>RM</b>	<b>Site</b>
Mill Creek (Scioto)	24.8	ust Marysville adj Cotton Slash Rd
Mill Creek (Scioto)	18.0	dst Marysville WWTP - Cherry St
Mill Creek (Scioto)	6.9	near Watkins - ust Hinton Mill Rd
Mill Creek (Scioto)	1.8	at Bellepoint Rd @ USGS gage

### Local Law Enforcement

- Union County Sheriff            221 West 5th Street Marysville (937) 645-4100
- Logan County Sheriff            284 County Road 32 S Bellefontaine (937) 599-3333
- Union County Wildlife Officer      Josh Shields (614) 644-3929 X1213
- Logan County Wildlife Officer      Adam Smith (614) 644-3929 X1208

### Hospital



A. 500 London Avenue  
Marysville  
(937) 644-6115

B. 1140 Charles Lane  
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