LEVEL 3 PROJECT STUDY PLAN

FOR THE

CLERMONT COUNTY, OHIO

2012 WATER QUALITY SAMPLING PROGRAM

MAY 21ST, 2012

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1. OBJECTIVES

As it has for the past 16 years, the Clermont County Office of Environmental Quality (OEQ) will be conducting a multi-faceted water quality sampling program in 2012. The program will involve collecting field data and water samples from a number of locations around the County in support of various initiatives, and data collected from each site is specific to those initiatives (Table 1). Data will be used for estimation purposes, i.e. to ascertain contaminant concentrations and loadings at various locations and within various watersheds, and may provide support to total maximum daily load (TMDL) determinations in the East Fork of the Little Miami River (EFLMR). According to the latest U.S. EPA guidelines, projects generating newly-collected data require a set of performance criteria that are of sufficient quality and quantity to address the project's goals (EPA/240/B-06/001). Clermont County OEQ has developed such performance criteria in the form of Data Quality Objectives for laboratory accuracy, laboratory precision, field accuracy, and field precision (See attached Quality Assurance Project Plan).

1.1. CONTINUOUS WATER QUALITY MONITORING STATIONS & WET WEATHER SAMPLING

Stream level, precipitation, temperature, pH, specific conductance, and dissolved oxygen (D.O.) will be recorded every 15 minutes at two of the five monitoring stations so that staff can identify any potential water quality issues in the watershed of these sites and monitor long term changes in water quality. Time paced, wet weather sampling may also be conducted as weather permits at four of the five monitoring stations to document nutrient loads during high flows.

1.2. AMBIENT WATER QUALITY MONITORING

Samples will be collected at various locations, including at the mouths of some HUC 12 watersheds, on a biweekly basis to characterize EFLMR loadings to support TMDL development.

1.3. GRASSY FORK MONITORING

Biweekly grab samples will be collected from an agricultural watershed in support of a project demonstrating agricultural non-point source (NPS) best management practices (BMP). OEQ will also deploy flow triggered automated, time paced samplers in this watershed with the goal of collecting samples during three wet weather events.

Table 1. 2012 Sample Locations & Analytes.

Location	Sample ID	Field Parameters	Laboratory Parameters
Continuous Water Quality Monitoring Stations			
EFLMR RM 34.8 at Main St., 15 minutes continuous sensing & wet weather	EFRM34.8	level, precipitation, D.O., specific conductance, temperature, pH	TP, NH_3, NO_2, NO_3, TKN, SS
Grassy Fork RM 0.2 at Glancy Corner-Marathon Rd., 15 minute continuous sensing & wet weather	GRSSY0.2	level, precipitation, D.O., specific conductance, temperature, pH	TP, NH_3, NO_2, NO_3, TKN, SS
Stonelick Creek RM 0.9 at US 50., 15 minute continous sensing & wet weather	STEFLMR	level, precipitation	TP, NH_3, NO_2, NO_3, TKN, SS
Shayler Creek RM 1.7 at Baldwin Rd., 15 minute continous sensing & wet weather	SHYLR1.7	level, precipitation	TP, NH_3, NO_2, NO_3, TKN, SS
Ambient Water Quality Monitoring and Three day Dissolved Oxygen Monitoring			
EFLMR RM 9.1 at Olivebranch-Stonelick Road	EFRM9.1	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Stonelick Creek RM 0.9 at US 50 monitoring station	STEFLMR	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
EFLMR RM 15.6 at St. Rt. 222	EFRM15.6	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Poplar Creek RM 2.1 @ Macaedonia Rd.	POPLR2.1	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Barnes Run RM 1.9 at Bethel-Concord Rd.	BARNS1.9	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
EFLMR RM 34.8 at Main St.	EFRM34.8	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
EFLMR RM 70.1 at Wise Rd.	EFRM70.1	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
EFLMR RM 75.3 at Canada Rd	EFRM75.3	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Dodson Creek RM 1.4 at St. Rt. 134	DODSN1.4	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Grassy Fork Monitoring			
Grassy Fork RM 0.2 at Glancy Corner-Marathon Rd.	GRSSY0.2	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Grassy Fork RM 3.0 at Marathon-Edenton Rd.	GRSSY3.0	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor
Grassy Fork RM 3.2 at St. Rt. 131	GRSSY3.2	discharge, level, D.O., specific conductance, temperature, pH	ortho-P, TP, NH_3, NO_2, NO_3, TKN, SS, DOC, TOC, *E.coli,* atrazine, simazine alachlor

2. POINT AND NONPOINT SOURCE ISSUES

Table 2 provides a summary of the point and nonpoint sources of pollution in the watersheds of each sampling location.

Table 2. Summary of point and nonpoint sources of pollution for each sampling location.

Sample ID	Figure No.	Point Source Issues	Non-Point Source Issues
Continuous Water Quality Monitoring Stations			
EFRM34.8	1	WWTPs	HSTS, urban stormwater, agriculture, livestock, wildlife
GRSSY0.2	2	N/A	agriculture, HSTSs, wildlife
STEFLMR	3	WWTPs, Stonelick Lake	HSTS, urban stormwater, agriculture, livestock, wildlife, golf club
SHYLR1.7	3	N/A	I/I, HSTS, urban stormwater, agriculture, wildlife
Ambient Water Quality Monitoring & Diurnal Dissolved Oxygen Profiles			
EFRM9.1	3	WWTP, Harsha Lake	HSTSs, gravel mining, agriculture, urban stormwater, wildlife
STEFLMR	3	WWTPs, Stonelick Lake	HSTS, urban stormwater, agriculture, livestock, wildlife, golf club
EFRM15.6	4	Harsha Lake	I/I, urban stormwater, agriculture, wildlife
POPLR2.1	5	N/A	I/I, HSTS, urban stormwater, agriculture, wildlife
BARNS1.9	6	N/A	HSTS, agriculture, livestock, wildlife
EFRM34.8	1	WWTPs, CECOS	agriculture, HSTSs, wildlife
EFRM70.1	7	WWTPs	HSTS, agriculture, livestock, wildlife, quarries
EFRM75.3	8	WWTPs, Huhtamaki Plastics, WTP	HSTS, agriculture, wildlife, hog confinement facility
DODSN1.4	9	Quarry, WWTPs	HSTS, agriculture, livestock, wildlife, quarries
Grassy Fork Monitoring			
GRSSY0.2	2	N/A	agriculture, HSTSs, wildlife
GRSSY3.0	2	N/A	agriculture, HSTSs, wildlife
GRSSY3.2	2	N/A	agriculture, HSTSs, wildlife

2.1. CONTINUOUS WATER QUALITY MONITORING STATIONS & WET WEATHER SAMPLING

OEQ will maintain water quality monitoring stations at four locations in the county. These stations will record stream level and rainfall at all four sites, and temperature, pH, specific conductance, and D.O. at the GRSSY0.2 & EFRM34.8 sites through January to December every 15 minutes. These data are then examined by OEQ personnel in an effort to identify any potential water quality issues in these watersheds. Data from these stations will be used to further understand source water protection issues and to monitor long term changes in water quality. Rainfall data from these stations will also assist in getting relevant hydrological data during the event based sampling study. Discrete, wet weather sampling will also occur here for ammonia, nitrate, nitrite, total phosphorus, total kjeldahl nitrogen, and suspended solids (Table 1). These data will be used to supplement the data collected by Ohio EPA for the EFLMR TMDL sampling.

Table 2 summarizes the possible point and nonpoint sources of pollution in the watersheds of each sampling location. The site in the EFLMR at river mile 34.8 has a wide variety of point and nonpoint sources in the watershed as this site drains a catchment over 237 square miles. The East Fork LMR watershed upstream from this site is primarily rural and receives runoff from agriculture, livestock, and Home Sewage Treatment Systems (HSTSs). There is some urban storm water runoff from villages such as the Village of Williamsburg where the EFRM34.8 sampling site is located. The site in Grassy Fork receives runoff from row crop agriculture and may drain failing HSTSs. Shayler Creek is likely influenced from inflow and infiltration as a sewer lines runs through the stream in many locations. Nonpoint sources of pollution at the Stonelick Creek monitoring station are discussed in section 2.2.

Point sources in the EFLMR upstream from river mile 34.8 include discharge from five WWTPs (New Vienna, Lynchburg, St. Martin, Fayetteville-Perry, and Williamsburg), one package WWTP (Snow Hill Country Club), and a water treatment plant (New Vienna). Point sources in the Stonelick Creek watershed include the package plants at Clermont Northeastern Schools in Owensville and Stonelick State Park. There are no known point sources in the Grassy Fork or Shayler Creek watersheds.

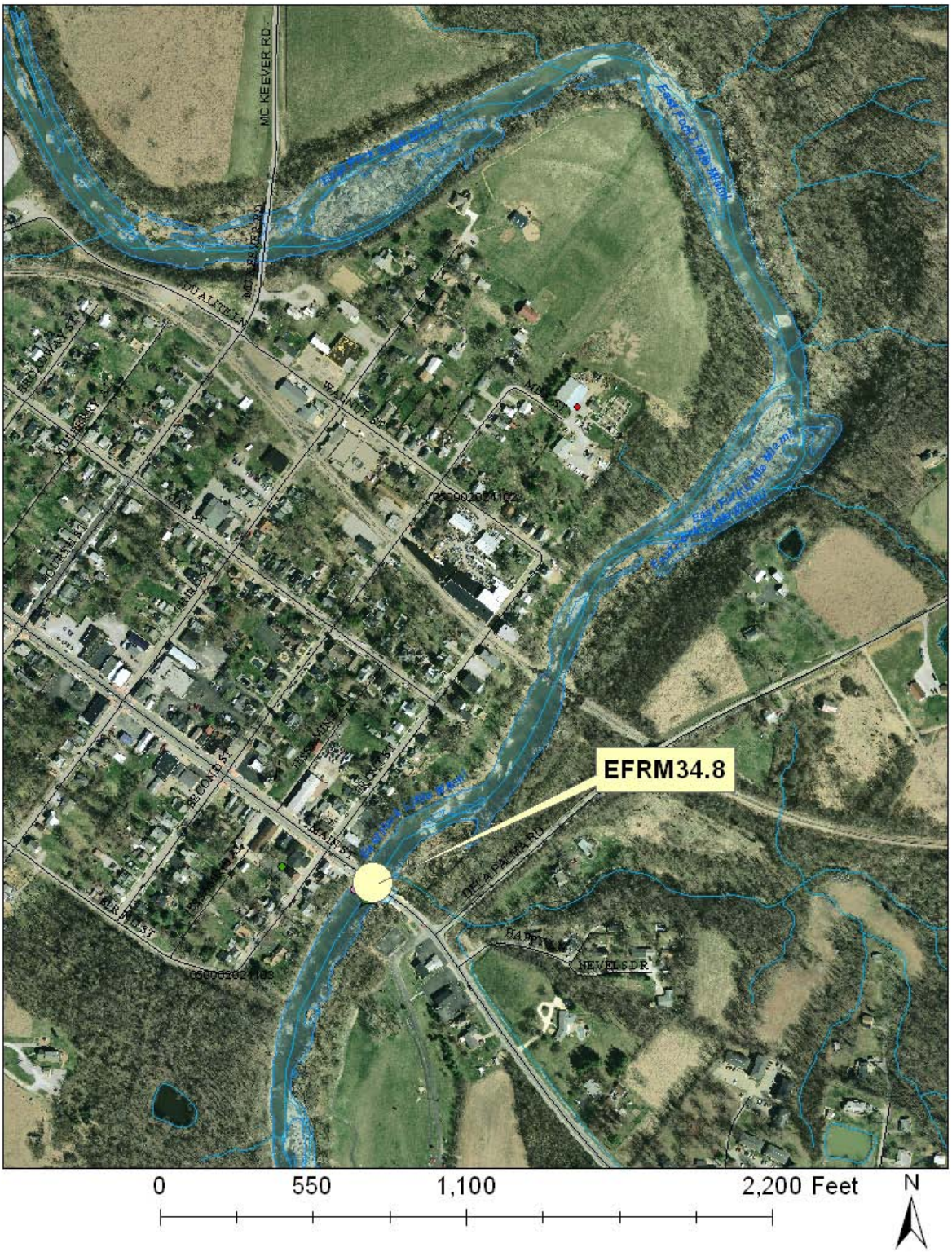


Figure 1

2012 Water Quality Monitoring Program
Continuous Water Quality Monitoring Stations & Wet Weather Sampling

Figure 2

2012 Water Quality Monitoring Program
Continuous Water Quality Monitoring Stations, Wet Weather Sampling, & Grassy Fork Monitoring

2.2. AMBIENT WATER QUALITY MONITORING

OEQ will collect biweekly grab samples from May through August at the mouth of 12 HUC 12 watersheds in the EFLMR, listed in Table 2. This sampling design will also aid in determining the source of any biological impairment identified in the upcoming TMDL and will help calibrate modeling efforts by the East Fork Water Quality Coordinators. The East Fork Water Quality Coordinators are combining efforts to identify how source water protection would impact water quality in the watershed and the economics of drinking water treatment and recreational use in Harsha Lake. Ambient sampling sites are shown in Figures 3 – 10.

Table 2 summarizes the possible point and nonpoint sources of pollution in the watersheds of each sampling location. The lower East Fork watershed (downstream of Harsha Lake) is a mix of commercial, residential, and rural land uses and therefore the EFRM9.1, EFRM15.6, and STEFLMR sampling sites may receive pollutants associated with urban storm water runoff, agricultural activities, or HSTSs. Additional nonpoint sources include Kipp's Gravel Company, which is located along the EFLMR around river mile 9.0. Sampling locations in the EFLMR are also subject to pollutants from inflow and infiltration (I/I) since sewer lines run parallel to most of the EFLMR.

There are four WWTPs that discharge to the lower EFLMR. The Batavia WWTP discharges at RM13.3, the Middle East Fork WWTP discharges at RM 12.5, the Lower East Fork WWTP discharges to an unnamed tributary that enters the EFLMR at RM 4.8, and the Milford WWTP discharges to an unnamed tributary that enters the EFLMR at RM 1.6. The EFRM9.1 site is situated downstream of the BAT and MEF WWTP outfalls.

Land use in the Stonelick Creek watershed is primarily row crop agriculture with parts of the watershed transitioning from being rural to suburban in nature. The STEFLMR site is under the influence of agricultural contaminants and HSTSs. The village of Newtonsville has a dense concentration of HSTSs, many of which are failing. STEFLMR drains the village of Newtonsville and may receive elevated concentrations of nutrients and bacteria from that area. The Cedar Trace Golf Club is located in the Brushy Fork headwaters and could contribute contaminants associated with fertilizers to the STEFLMR site.

There are two WWTPs that discharge in the Stonelick Creek watershed. The Clermont Northeastern Local Schools WWTP discharges into the headwaters of Brushy Fork, influencing the STEFLMR site. The Stonelick State Park WWTP discharges into Stonelick Lake, which is upstream from STEFLMR.

Poplar Creek drains a predominantly agricultural/rural watershed where the majority of households use HSTSs to treat their waste. Poplar Creek drains the village of Bethel which is sewered and may contribute contaminants associated with inflow and infiltration (I/I). There are no NPDES permits in the watersheds of Poplar Creek.

Sites located within the main stem of the East Fork of the Little Miami River (EFRM75.3, EFRM70.1, EFRM34.8) upstream of Harsha Lake have a wide variety of point and nonpoint sources in the watershed as these sites drain catchments over 200 square miles. Table 2 summarizes the possible point and nonpoint sources of pollution in the watersheds of each sampling location. The upper East Fork watershed is primarily rural and receives runoff from agriculture, livestock, and Home Sewage Treatment Systems (HSTS). There is some urban storm water runoff from villages such as the Villages of Williamsburg and Fayetteville. The Pork Champs hog confinement facility located on Rapid Ford Road drains is in the watershed of the EFRM75.3 site. This site is reported to have a nutrient management plan; however, may still be a significant source of pollutant loads to the East Fork LMR.

Point sources in the upper EFLMR watershed include discharge from four WWTPs (New Vienna, Lynchburg, St. Martin, and Fayetteville-Perry), one package WWTP (Snow Hill Country Club), and a water treatment plant (New Vienna). The EFRM75.3 drains the New Vienna WTP & WWTP as well as the Huhtamaki Plastics Industry which discharges cooling water to the river. Additionally, the EFRM34.8 site is downstream from the Village of Williamsburg's WWTP and the storm water pond at the CECOs hazardous waste landfill which may contain contaminants associated with this facility.

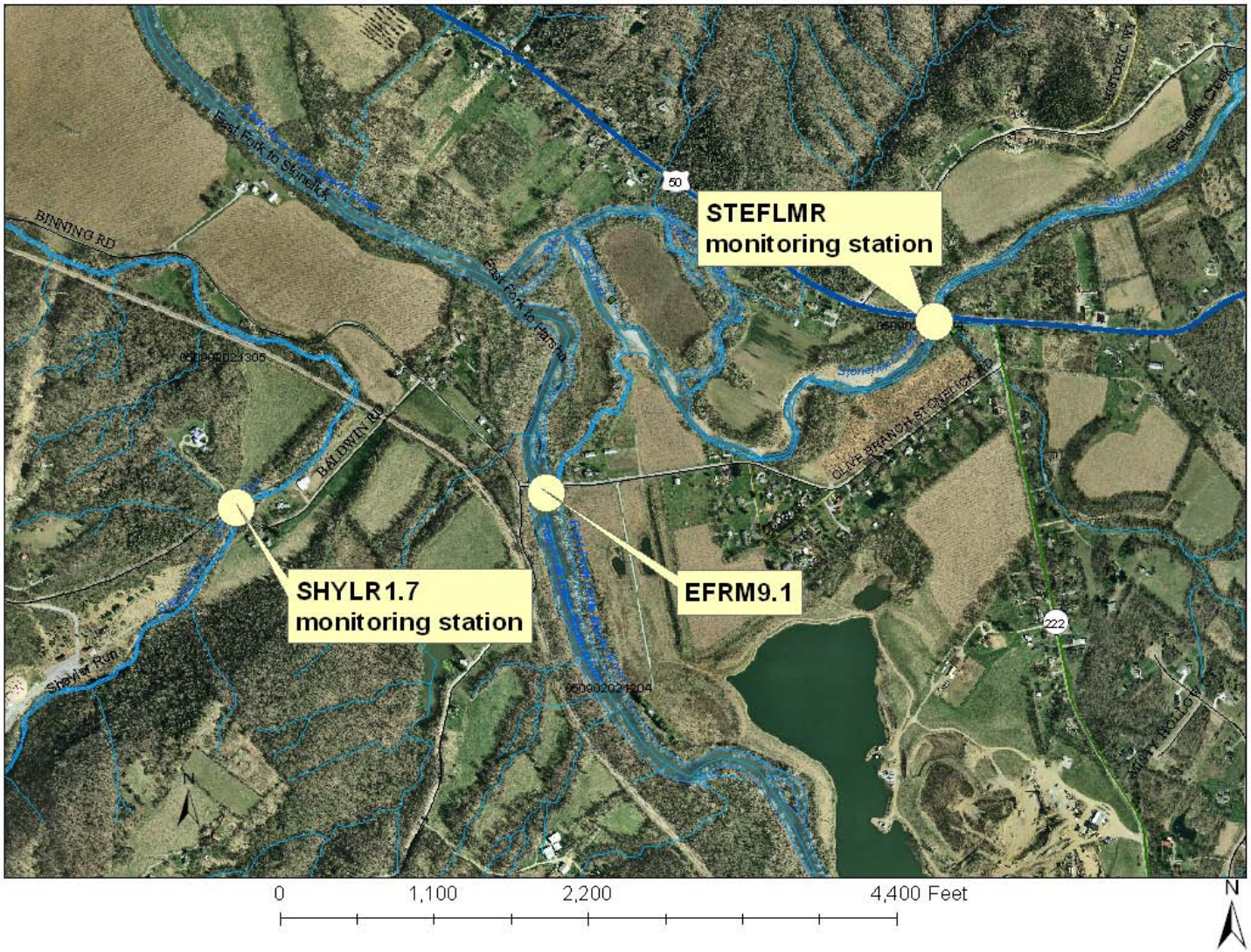


Figure 3

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring, Dissolved Oxygen Profiles, Wet Weather Monitoring

Figure 4

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profiles

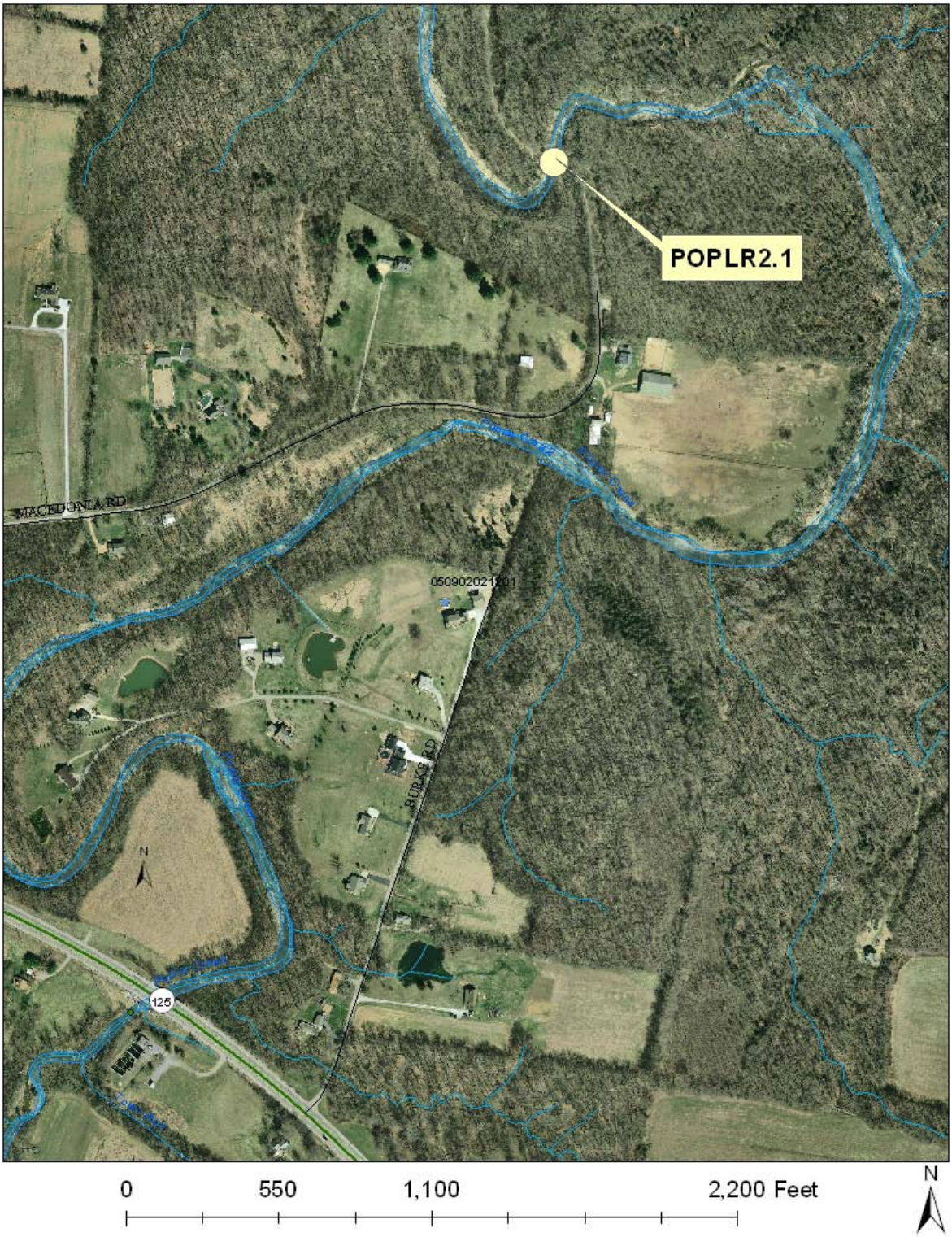


Figure 5

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profiles

Figure 6

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profiles

Figure 7

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profiles

Figure 8

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profiles

Figure 9

2012 Water Quality Monitoring Program
Ambient Water Quality Monitoring & Dissolved Oxygen Profile

2.3. GRASSY FORK MONITORING

OEQ, in collaboration with the East Fork Water Quality Coordinators group is exploring ways of implementing an agricultural BMP demonstration project in the Grassy Fork watershed in an attempt to measure the economics of using BMPs to improve water quality on a scale large enough to improve drinking water treatability and recreational quality in Harsha Lake. OEQ will sample three locations during at least three wet weather events to characterize the background contaminant load in this watershed.

Grassy Run has a predominantly agricultural land use and therefore receives runoff from row-crops and any failing HSTSs. There are no known point sources of pollution in the Grassy Fork watershed.

3. PARAMETERS FOR EACH SAMPLING LOCATION

A list of field measurements and analytes for each sampling location is presented in Table 1.

4. IDENTIFICATION OF FIELD AND LABORATORY METHODS

Standard Operating Procedure (SOP) documents have been developed for all of the field sampling and data collection activities associated with this study except for biological assessments. These SOPs are included in Appendices B, C, D, & E of this Study Plan, along with a Quality Assurance Plan that lists all of the analytical methods used by the laboratory, including detection limits (Appendix A, D, & E). Field measurements and sample collection techniques were developed in accordance with the "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices".

The Clermont County Water and Sewer District laboratory, which is also responsible for NPDES permit testing for all of the County's Waste Water Treatment Plants, will be analyzing ortho-phosphorus, total phosphorus suspended solids, *E. coli*, ammonia, nitrite, and nitrate samples. Pace Analytical, in Columbus, Ohio is accredited by Ohio EPA (See QAP in Appendix D), and will be analyzing TOC, DOC, and TKN. Alloway Laboratories, in Marion, Ohio (See QAP in Appendix E), will be analyzing for alachlor, atrazine, and simazine and is certified for these parameters by Ohio EPA. All laboratories have a complete set of SOPs on file for all laboratory procedures (Clermont SOP: Appendix B; Pace QAM/SOP: Appendix D; Alloway QAM/SOP: Appendix E). Analytical procedures were developed from either the 18th Edition of the Standard Methods for the Examination of Water and Wastewater, Methods for Chemical Analysis of Water and Waste (USEPA, 1983), or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846 (USEPA 2008).

5. EXPLANATION OF PLANNED SAMPLING LOCATIONS

A detailed explanation of planned sampling locations for 2011 is provided in Section 2 and Table 3. Detailed maps of the sampling locations are provided in Figures 1 – 15. Georeferencing data, i.e. boundaries for each map (north and south latitudes and east and west longitudes) are provided in Table 4. Figure 16 is a map of the scale in Figures 1 – 15.

Table 3. Georeferencing Data for Sampling Locations.

Sample ID	Waterbody	River Mile	Latitude (decimal degrees)	Longitude (decimal degrees)	USGS	Township
Continuous Water Quality Monitoring Stations						
EFRM34.8	East Fork LMR	34.8	39.0525	-84.0504	Williamsburg	Williamsburg
GRSSY0.2	Grassy Fork	0.2	39.1329	-84.0153	Newtonsville	Jackson
STEFLMR	Stonelick Creek	0.9	39.1222	-84.1991	Batavia	Stonelick
SHYLR1.7	Shayler Creek	1.7	39.1183	-84.2163	Batavia	Union
Ambient Water Quality Monitoring & Diurnal Dissolved Oxygen Profiles						
EFRM9.1	East Fork LMR	9.1	39.1187	-84.2086	Batavia	Batavia
STEFLMR	Stonelick Creek	0.9	39.1222	-84.1991	Batavia	Stonelick
EFRM15.6	East Fork LMR	15.6	39.0624	-84.1789	Batavia	Batavia
POPLR2.1	Poplar Creek	2.1	38.9736	-84.1062	Bethel	Tate
BARNS1.9	Barnes Run	1.9	39.0082	-84.0733	Williamsburg	Williamsburg
EFRM34.8	East Fork LMR	34.8	39.0525	-84.0504	Williamsburg	Williamsburg
EFRM70.1	East Fork LMR	70.1	39.2251	-83.8255	Lynchburg	Clark
EFRM75.3	East Fork LMR	75.3	39.2731	-83.7812	Martinsburg	Clark
DODSN1.4	Dodson Creek	1.4	39.2088	-83.8141	Lynchburg	Dodson
Grassy Fork Monitoring						
GRSSY0.2	Grassy Fork	0.2	39.1329	-84.0153	Newtonsville	Jackson
GRSSY3.0	Grassy Fork	3.0	39.1664	-84.0092	Newtonsville	Jackson
GRSSY3.2	Grassy Fork	3.2	39.1741	-83.9982	Fayetteville	Perry

Table 4. Georeferencing Data for Figures.

site	North	South	East	West
	Decimal Degrees	Decimal Degrees	Decimal Degrees	Decimal Degrees
Figure 1	39.016	39.050	-84.043	-84.055
Figure 2	39.209	39.122	-83.957	-84.048
Figure 3	39.162	39.153	-84.277	-84.292
Figure 4	39.082	39.060	-84.171	-84.195
Figure 5	38.983	38.972	-84.096	-84.108
Figure 6	39.012	39.004	-84.060	-84.076
Figure 7	39.228	39.219	-83.813	-83.828
Figure 8	39.285	39.271	-83.773	-83.788
Figure 9	39.212	39.203	-83.803	-83.818
Figure 10	39.367	38.902	-83.58	-84.429

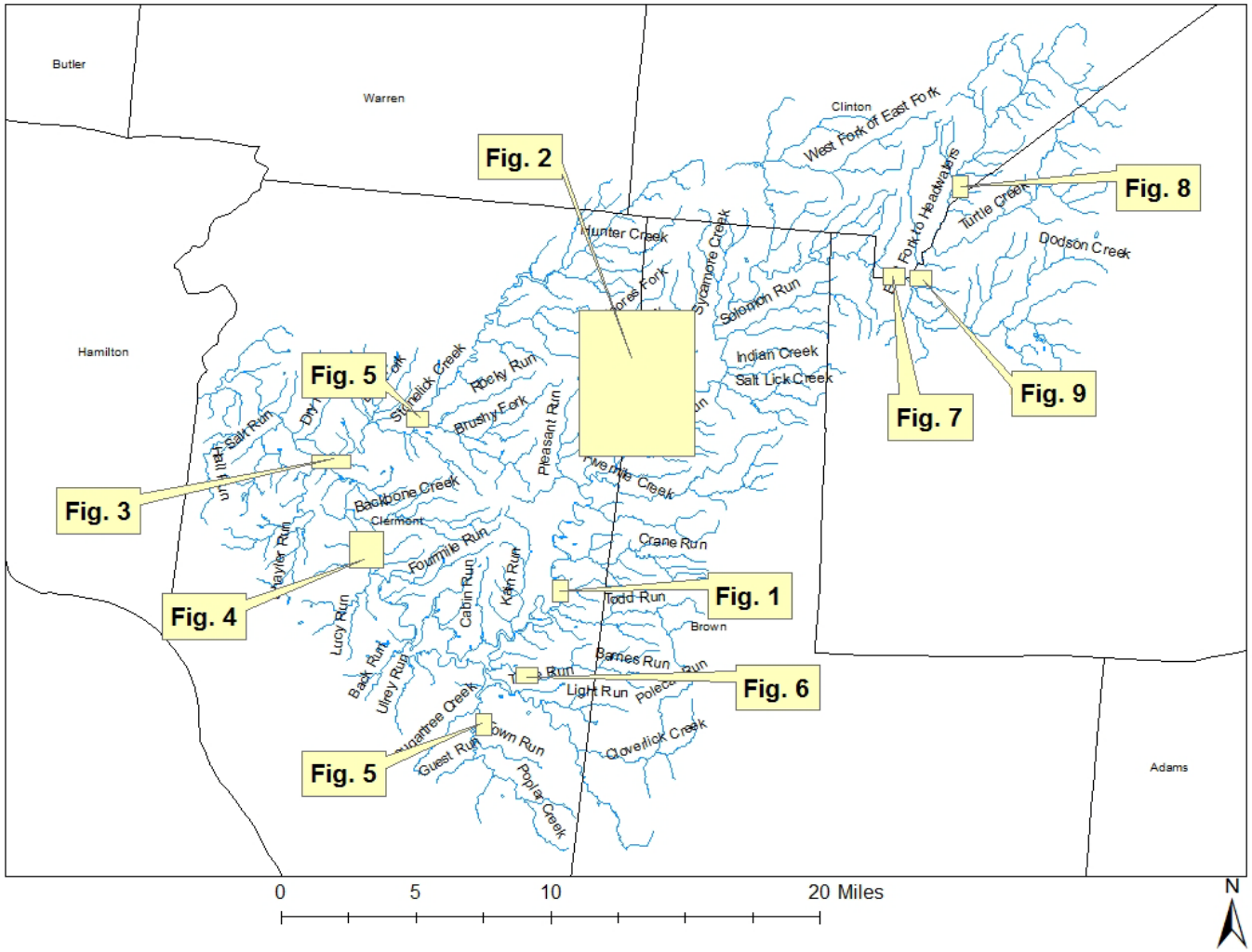


Figure 10

Water Quality Monitoring Program
Continuous Monitoring Stations, Wet Weather Sampling, Dissolved Oxygen Profiles, Ambient Sampling, Grassy Fork Monitoring, & Batavia Dam Removal Project

5.1. CONTINOUS WATER QUALITY MONITORING STATIONS & WET WEATHER SAMPLING

The monitoring station located on the EFLMR at river mile 34.8 was owned and operated by the United States Geological Survey prior to its use by OEQ. This location is close to the inflow at East Fork Lake and represents a large portion of the loading to the lake, making it an ideal source water monitoring location. Grassy Fork was chosen as a representative agricultural watershed for source water monitoring and will also be identified as a target watershed in applications for Conservation Reserve Enhancement Programs and Environmental Quality Incentives Programs. The County hopes to observe water quality improvements in Grassy Fork as BMPs are applied in the watershed. The Shayler Creek monitoring station was sited because it would represent an urban watershed with sewer inflow and infiltration issues. Stonelick Creek was sited because it is a major tributary to the EFLMR and it represents a primarily rural/suburban watershed with mostly HSTS as the wastewater treatment method. Wet weather monitoring is occurring at these four sites in an attempt to supplement the upcoming TMDL for the EFLMR.

5.2. AMBIENT SAMPLING

OEQ selected placed many of the ambient sampling locations near the mouths of HUC 12 watersheds in anticipation of the TMDL monitoring conducted by OEPA. These sites were selected based on watershed characteristics, historical use attainment, and/or the existence of historical data. EFRM9.1 was chosen because it represents an urban watershed with WWTPs and historical data. STEFLMR was chosen because it is a major tributary to the EFLMR, has a high density, of HSTSs and has a permanent monitoring station. EFRM15.6 and POPLR2.1 were chosen because they have a mixed forested/residential land use with no NPDES permits except for Harsha Lake in the EFLMR site. BARNS1.9 was chosen because it was in non-attainment for biology during the last OEPA survey (1996). EFRM34.8 was chosen because it is the main drainage to Harsha Lake and has a monitoring station with historical data. DODSN0.1 was chosen because it is designated an exceptional warmwater habitat (EWH) and lacks any hog confinement facilities. EFRM70.1 and EFRM75.3 were chosen to represent the EFLMR headwaters and agricultural sites. EFRM70.1 is downstream from Lynchburg's WWTP while EFRM75.3 is upstream from the WWTP yet drains a hog confinement facility.

5.3. GRASSY FORK MONITORING

Clermont County chose Grassy Fork as a watershed test-bed or demonstration project for agricultural best management practices for a variety of reasons. It is geologically similar to other agricultural tributaries to the EFLMR, the watershed lies mostly within Clermont County, and OEQ observed high nutrient concentrations in Grassy Fork in 2009. GRSSY0.2 was chosen as the outlet from the watershed to the EFLMR and is the home to a continuous monitoring station. GRSSY3.0 is downstream from the subwatershed where BMPs will be concentrated if federal grant monies are received. GRSSY3.2 drains to GRSSY3.0 but is upstream from the demonstration subwatershed and will therefore serve as the reference condition for BMP impacts on water quality.

6. SCHEDULE OF PLANNED SAMPLING ACTIVITIES

6.1. CONTINOUS WATER QUALITY MONITORING STATIONS & WET WEATHER SAMPLING

OEQ will maintain water quality monitoring stations at four locations in the county. These stations each contain an ISCO Model 4220 Flow Meter with a submerged pressure transducer to measure stream level and a tipping bucket rain gage. OEQ will also have YSI 600-series datasondes deployed at these stations at GRSSY0.2 & EFRM34.8 to measure temperature, pH, specific conductance, and D.O. The flow meter is programmed to collect these data every 15 minutes. All data from the station are downloaded biweekly via telephone modem to a computer using ISCO's Flowlink software. The data are then examined by OEQ personnel in an effort to identify any potential water quality issues in these watersheds.

The four monitoring stations have ISCO refrigerated auto-samplers (model 6700 FR or 6712 FR) which can be triggered by the flow meter to sample when water level reaches a certain height. Each location will be programmed to sample when water level increases by an amount characteristic of a 0.5" or greater rain storm. This sampler "enable" level will be different for each station and will fluctuate throughout the year depending on the current water level or base flow conditions. This "enable" trigger will be modified monthly during autosampler inspections. The autosampler will be programmed to collect separate samples representing the rising limb, asymptote, and falling limb of the hydrograph for each site. Samples will be collected following April 1, 2011 pending wet weather conditions being met. The number of wet weather events sampled per year will vary depending on lab personnel availability and weather conditions.

6.2. AMBIENT SAMPLING

Beginning May 2nd through August 29th, OEQ will conduct biweekly sampling at the nine sites identified in Table 1. The sampling crew will alternate sampling at half of the stations every week so that each site is visited biweekly; yet, all of the sites aren't visited on the same day. Samples will be analyzed for the parameters identified in Table 1. Alachlor, atrazine, and simazine will only be analyzed for during May and possibly June (dependent on management practices) sampling events. After each grab sample has been collected, cross sections, stream level, and velocity will be measured, where possible, in each sampling location.

6.3. GRASSY FORK MONITORING

Biweekly monitoring is conducted at the three sites in Grassy Fork (Table 1) from September through April to capture influences of agricultural cover crops on water quality. Sampling began in May of 2011 and will continue through April, 2012. It will commence again in September, 2012. These sites will be sampled with the same frequency as the ambient sampling sites. Samples will be analyzed for the parameters identified in Table 1. After each grab sample has been collected, cross sections, stream level, and velocity will be measured, where possible, in each sampling location.

Wet weather events will also be sampled as weather permits. GRSSY0.2 will be monitored as explained in section 6.1. Teledyne ISCO Avalanche autosamplers will be used to sample during wet weather events at GRSSY3.0 & GRSSY3.2. Each location will be programmed to sample when water level increases by an amount characteristic of a 0.5" or greater rain storm. The samplers will take time paced samples representing the rising limb, asymptote, and falling limb of the hydrograph for each site. Sample collection will begin April 1, 2012 and continue throughout the year. The number of wet weather events sampled per year will vary depending on lab personnel availability and weather conditions. Higher priority will be given to wet weather sampling in the Grassy Fork Watershed than at the continuous water quality monitoring stations.

7. QUALITY ASSURANCE/QUALITY CONTROL PLAN OR MANUAL

A detailed Quality Assurance Plan for OEQ, which applies to all chemical and physical sampling and all analytes being processed in the Clermont County Wastewater Lab, is included in Appendix A of this Study Plan. A QAP for

Pace Analytical, which covers samples being analyzed for DOC, TOC, and TKN, is included in Appendix D. The NELAC accreditation expires on June 30th, 2012, before the end of scheduled sampling activities for Clermont County. Clermont County will monitor NELAC certification status of the Indianapolis lab and obtain renewed certifications once they become available. A QAP for Alloway labs, which covers samples being analyzed for alachlor, atrazine, and simazine, is included in Appendix E. The certification for Alloway labs was expired April 24th, 2012. The letter on page 113 of Appendix E extends the certification shown on page 114 until the onsite survey has been conducted. The onsite survey is scheduled for July 26th. Clermont County will monitor the certification status of Alloway labs for SOC group 1 and obtain renewed certifications once they become available.

8. WORK PRODUCTS

Interpretation and results of Clermont County's 2012 sampling program will be published in a "2012 Water Quality Sampling Final Report". This report is produced annually and posted on the OEQ website (www.oeq.net). The report will interpret 2012 sampling data relative to existing or proposed OEPA water quality standards in an effort to identify and quantify the extent of water quality problems in the sampled watersheds. Copies of these reports will be submitted to OEPA upon request and most data will be entered into the Credible Data database. Exceptions to database entry include continuous (15 minute interval) sampling and continuous dissolved oxygen (15 minute interval) monitoring data. The daily maximum and minimum D.O. concentrations will be submitted to the database. Eventually, data from the 2012 sampling may be used in conjunction with other data in the development of loading models for the East Fork TMDL.

9. LIST OF QUALITY DATA COLLECTORS AND OTHER PERSONNEL

Hannah Gonzalez, Project Manager for the Clermont County Office of Environmental Quality, has been certified by the Ohio EPA as a Level 3 Quality Data Collector (QDC) for Chemical Water Quality Assessment (QDC No. 274), effective December 23, 2011. She will also be responsible for all data collection activities associated with Clermont County's 2012 sampling program, either by personally collecting samples or supervising those individuals involved in sample collection activities. These individuals may include personnel from the Clermont County Soil and Water Conservation District, the Clermont County Sewer District Laboratory, the Clermont County General Health District, and/or the Clermont County Stormwater Department. Contact information for Mrs. Gonzalez is provided below:

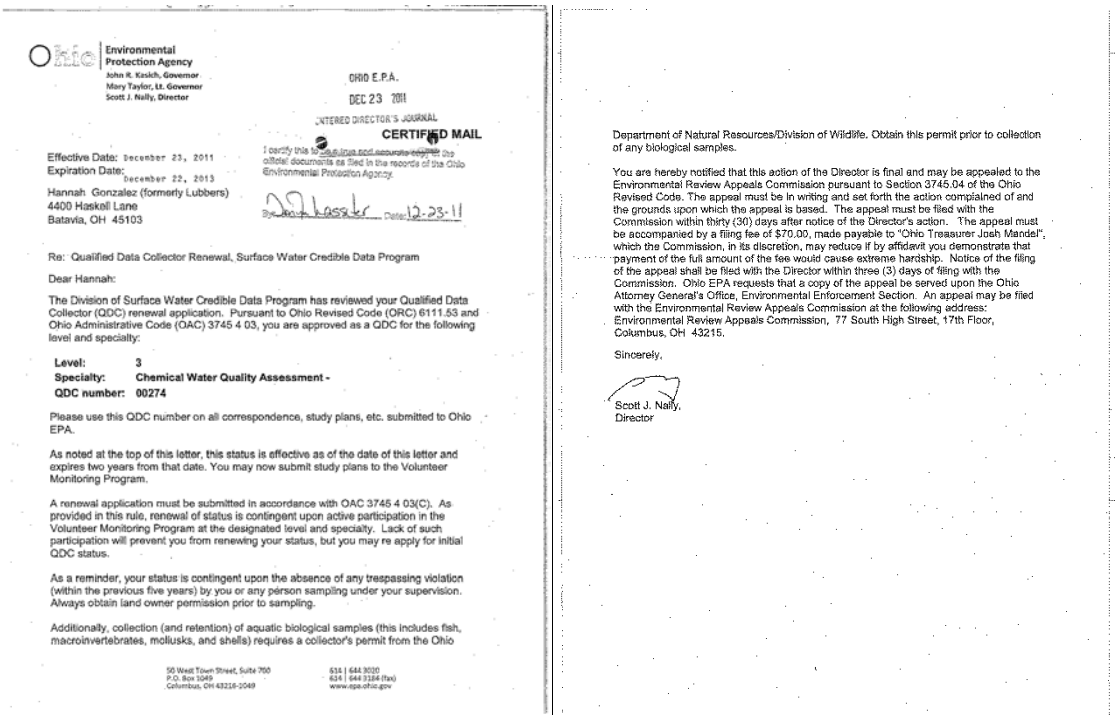
Hannah Gonzalez, Project Manager
Clermont County Office of Environmental Quality
4400 Haskell Lane
Batavia, Ohio 45103
Phone: (513) 732-7894
Email: hgonzalez@clermontcountyohio.gov

Supervision of non-Level 3 QDCs will include the following:

- A thorough review of the Project Study Plan and the sampling locations prior to any sample collection activities. Each sample site will be visited once before sampling by both the Level 3 QDC project manager and any non-level 3 QDC sample collectors.
- A thorough review of all relevant Standard Operating Procedures and Ohio EPA references by the Level 3 QDC project manager with any non-level 3 QDC sample collectors prior to any sample collection activities
- Training of the non-level 3 QDCs by the Level 3 QDC project manager in the use of all sampling equipment, including, but not limited to, the YSI data sondes and current meter prior to any sample collection activities. One training will be conducted in the office and one in the field.
- Direct supervision by the Level 3 QDC project manager of the individual's initial sample collection activities during the first sample round to ensure compliance with the SOPs and Study Plan.

10. DOCUMENTATION OF LEVEL 3 QDC STATUS

Figures 11 is a copy of the certified letter from OEPA Director Scott Nally to Hannah Gonzalez approving her as a Level 3 Quality Data Collector for Stream Chemical Water Quality Assessment.



Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

OHIO E.P.A.
DEC 23 2011
ENTERED DIRECTOR'S JOURNAL

CERTIFIED MAIL

Effective Date: December 23, 2011
Expiration Date: December 22, 2013

Hannah Gonzalez (formerly Lubbers)
4400 Haskell Lane
Batavia, OH 45103

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By [illegible] Date 12-23-11

Re: Qualified Data Collector Renewal, Surface Water Credible Data Program

Dear Hannah:

The Division of Surface Water Credible Data Program has reviewed your Qualified Data Collector (QDC) renewal application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745 4 03, you are approved as a QDC for the following level and specialty:

Level: 3
Specialty: **Chemical Water Quality Assessment -**
QDC number: **00274**

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745 4 03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Josh Mandel", which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 77 South High Street, 17th Floor, Columbus, OH 43215.

Sincerely,

Scott J. Nally,
Director

50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

614 | 644 3020
614 | 644 3184 (fax)
www.epa.ohio.gov

Figure 11.

Documentation for Level 3 Qualified Data Collector
Gonzalez: Chemical Water Quality Assessment

11. IDENTIFICATION OF CONTRACT LABORATORIES

2012 Ortho-phosphorus, *E. coli*, suspended solids, ammonia, nitrite, and nitrate analyses will be performed by the Clermont County Water and Sewer District laboratory, under the supervision of Mr. Kevin Saunders.

Kevin Saunders, Laboratory Manager
Clermont County Water and Sewer District
1003 U.S. Route 50
Milford, Ohio 45150
Phone: (513) 965-4800
Email: ksaunders@co.clermont.oh.us

The analyses for DOC, TOC and TKN will be conducted by Pace Analytical under the supervision of the Lab Supervisor, James Petrevski. TOC and DOC analyses will be conducted at the Columbus lab under Ohio drinking water certification # 1030. TKN analyses will be conducted at the Indianapolis laboratory under the NELAC certification # 04076.

Pace Analytical Services, Inc
1233 Dublin Rd.
Columbus, OH 43215
614-486-5421

Pace Analytical Services, Inc.
7726 Moller Rd.
Indianapolis, IN 46268

The analyses for alachlor, atrazine, and simazine will be conducted by Alloway Laboratories under the supervision of the Chief Chemist, Todd Brown.

Alloway
1776 Marion-Waldo Road
Marion, OH 43302
Phone: (740) 389-5991
Phone: (800) 873-2835
Fax: (740) 389-1481

12. SCIENTIFIC COLLECTORS PERMIT

Not Applicable

13. DIGITAL PHOTO CATALOG

A digital photo catalog of all sampling locations will be maintained for ten years including photos of the specific sampling location, riparian zone adjacent to the sampling location, and general land use in the immediate vicinity of the sampling location. See Figure 18 for certification letter.

14. VOUCHER SPECIMENS

Not Applicable

15. STATEMENT REGARDING CRIMINAL TRESPASSING

Mrs. Gonzalez has not been convicted of or pleaded guilty to a violation of section 2911.21 of the Revised Code (criminal trespass) or a substantially similar municipal ordinance within the previous five years. See Figure 18 for the criminal trespassing statement.

BOARD OF COUNTY COMMISSIONERS

CLERMONT COUNTY, OHIO

ROBERT L. PROUD DAVE UIBLE EDWIN H. HUMPHREY

April 20th, 2012

Ohio EPA, Division of Surface Water
Standards and Technical Support Section
P.O. Box 1049
122 S. Front Street
Columbus, Ohio 43216-1049

Dear Mr. Reynolds,

Pursuant to the requirements outlined in Appendix A of Section 3745-4-06 of the Ohio Administrative Code describing the requirements of a Level 3 Study Plan, the purpose of this letter is to certify that the Clermont County Office of Environmental Quality will create a digital photo catalog of all sampling locations in its Project Study Plan, and maintain that catalog for ten years. The catalog will include photos of the specific sampling location, riparian zone adjacent to the sampling location, and general land use in the vicinity of the sampling location.

This letter further certifies that Mrs. Gonzalez has never been convicted of or pleaded guilty to a violation of Section 2911.21 of the Ohio Revised Code (criminal trespass) or a substantially similar municipal ordinance.

Sincerely,

Hannah Gonzalez, Project Manager
Clermont County Office of Environmental Quality

OFFICE OF ENVIRONMENTAL QUALITY
4400 HASKELL LANE BATAVIA, OHIO 45103
TELEPHONE: (513) 732-7745 FAX: (513) 732-7310

Figure 12

Gonzalez Trespassing and Digital Photo Catalog Certification Letter