Quality Assurance Project Plan
Volunteer Stream Monitoring Grant Program

Revision 0

Mid-Michigan Environmental Action Council (Mid-MEAC)

1st Draft – Lina Goodwin - August 10, 2006
2nd Draft – Jessica Yorko – November 14, 2006

Project Manager Signature _____ _____

Name/Date Jessica Yorko

QA Manger Signature _____

Name/Date Jessica Yorko

A2. Table of Contents

A3. Distribution List

Names and telephone numbers of those receiving copies of this QAPP.

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ii. Ric Lawson, 734-769-5123
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A4. Project Organization

Name	**Project Title/Responsibility**
Matt Flechter	Advisory Panel (contact)
Jessica Yorko	Project Manager
Jessica Yorko	QA Officer
Geoff Habron	Field/Sampling Leader
Kay Edly	Laboratory Manager/Leader

A5. Problem Definition/Background

The ultimate goal of this program is to create swimmable, fishable streams and rivers in Mid-Michigan. Mid-MEAC's volunteer stream monitoring program is one strategy within that goal, which fits into Mid-MEAC's mission of helping people transform environmental concerns into action. Not only does the program allow us to collect data which can then be used in the future for advocacy efforts and river protection efforts, it also helps people connect to and appreciate our natural world. From 2002 until 2004, Mid-MEAC volunteers monitored eight sites in the tri-county area. These were selected by MDEQ biologists, and were in three different watersheds. Some sites were selected to show early indication of problems within the river (downstream from urbanized areas), to provide a representation of the river prior to the impacts of urbanized areas, and to assist in documenting changes in the rivers over time. Other sites were identified because they are impacted by siltation due to channelization.

In 2004, we realized that we could not continue to operate our volunteer stream monitoring program without additional resources. The initial program was done entirely with donated labor and equipment borrowed from various Michigan State University departments. The first two sessions were coordinated by MSU students, and most of the volunteers were MSU students who later moved on. We quickly realized that we needed a more reliable source of both trained volunteers and equipment for testing sites.

Upon receiving the MiCorps grant award in July 2006, Mid-MEAC conferred with the Ingham County Drain Commissioner's Office, MSU researchers, MiCorps staff, Tri-County Regional Planning Commission, and the Greater Lansing Regional Committee for Stormwater Management about the sampling site locations. A strategic decision was made to concentrate on the Red Cedar River for the next several years, looking at benthic invertebrates and habitats, comparing different parts of the watershed, and examining potential impacts on the watershed.

A6. Project Description

Project Goals

- Improve water quality in the Red Cedar River Watershed.
- Improve awareness of water quality issues facing the Red Cedar River Watershed.
- Increase level of community and individual commitment to water quality stewardship.

Objectives

- Recruit, train, maintain, and coordinate at least 6 new volunteers and provide refresher training to at least eight existing volunteers, to monitor at least 4 sites along the Red Cedar Watershed two times per year, for at least 10 years. (First two years to be covered by this grant; additional volunteers and sites to be added in future years.)
- Coordinate annual fall and spring volunteer benthic invertebrate sampling days and identification sessions; and spring habitat assessments.
- Provide monitoring data to the MiCorps, MDEQ, Greater Lansing Regional Committee on Stormwater Management (GLRC), and the public.
- Work with the GLRC and other Mid-MEAC partners to identify projects and public education programs to help improve water quality.
- Inform Mid-Michigan citizens about issues at the various sites as they pertain to local planning, land-use, or permitting decisions and encourage citizen groups to attend the watershed management public meetings to provide their input and offer solutions to problems.

A6. Timetable/Work Schedule	**Jul - Sep 06**	**Oct - Dec 06**	**Jan - Mar 07**	**Apr - Jun 07**	**Jul - Sep 07**	**Oct - Dec 07**	**Jan - Mar 08**	**Apr - Jun 08**
Task 0.1 Site Selection Work with Jo Latimore and Geoff Habron to identify monitoring sites on Red Cedar.	X		X		X		X	
Task 1. QAPP Develop and implement a Quality Assurance Project Plan.								
Sub-task 1.1 Develop and submit a Quality Assurance Project Plan within 60 days of the grant award.	X							
Sub-task 1.2. Implement the Quality Assurance Project Plan throughout the duration of the project.	X	X	X	X	X	X	X	X
Task 2. MI CORPS TRAINING Attend 8-hour training session provided by MiCorps and schedule a joint sampling evaluation event with MiCorps staff.	X				Note: will plan to attend this session in 2006, as RFP requires. We would like the official period of grant to be Jul 06-Jul 08 in order to hold four monitoring sessions over the duration of the grant. Otherwise, we would need to begin many activities in Jan-Mar 2006, which is probably not realistic given the turnaround time for the grant awards.			
Task 3. VOLUNTEER RECRUITMENT Recruit and organize new volunteers. (includes all Task 3 items) – Task 3.1 – 3.11	X		X		X		X	
Task 4. PURCHASING Purchase necessary equipment for performing stream monitoring activities.	X							
Task 5. VOLUNTEER TRAINING Coordinate and conduct volunteer stream monitoring training sessions.								
Sub-task 5.1. Determine locations and times for training sessions and mail information to volunteers.	X		X		X		X	
Sub-task 5.2. Conduct indoor training sessions to provide an overview of the program, program goals, the stream monitoring process, field data collection methods, and importance of quality assurance and quality control.	X				X			
Sub-task 5.3. Conduct outdoor training sessions to walk volunteers through the stream monitoring process, teach specific field data collection methods, how to evaluate stream habitat, and how to complete datasheets.	X			X	X			X
Task 6. MONITORING COORDINATION Coordinate volunteer stream monitoring field data collection sessions, to include completion of Macro invertebrate Datasheet, Stream Habitat Datasheet, Site Sketch Datasheet, and macro invertebrate specimen collection.								
Sub-task 6.1. Decide which site leaders and other volunteers will be responsible for each site.	X			X	X			X
Sub-task 6.2. Work with volunteer monitoring teams to select monitoring dates and meeting locations.	X			X	X			X
Sub-task 6.3 Provide site leaders and volunteers with maps and directions to collection locations.	X			X	X			X
Sub-task 6.4 Check out equipment, datasheets and other materials to site leaders.	X			X	X			X
Sub-task 6.5 Oversee monitoring activities by visiting volunteers working in the field and being accessible via phone to respond to problems and questions.	X			X	X			X
Sub-task 6.6 Collect datasheets, specimen samples, and equipment from site leaders.	X			X	X			X

A6. Timetable, cont'd	**Jul - Sep 06**	**Oct - Dec 06**	**Jan - Mar 07**	**Apr - Jun 07**	**Jul - Sep 07**	**Oct - Dec 07**	**Jan - Mar 08**	**Apr - Jun 08**
Task 7. DATA PROCESSING Database development, data entry, and data analysis.								
Sub-task 7.3. Enter all volunteer monitoring data into appropriate database.		X		X		X		X
Sub-task 7.4. Calculate diversity indices and perform additional data analyses.		X		X		X		X
Task 8. DATA COMMUNICATION Generate reports summarizing findings and provide to MiCorps, GLRC, MDEQ, volunteers, and the public.								
Sub-task 8.1 Generate reports.		X		X		X		X
Sub-task 8.2 Provide to MiCorps, MDEQ, and GLRC.		X		X		X		X
Sub-task 8.3 Post report to Mid-MEAC website.		X		X		X		X
Sub-task 8.4 Include reports in Mid-MEAC newsletter, The Source		X		X		X		X
Task 9. PROJECT EVALUATION Evaluate project management, data quality, impact on awareness, impact on public stewardship.								
Sub-task 9.1 Create paper and web-format evaluations for volunteers, MDEQ, GLRC, and MiCorps to complete after each monitoring session and data submission.	X							
Sub-task 9.2 Distribute evaluation forms to those listed in 9.1, provide incentives to complete evaluations, and issue reminders.	X	X		X	X	X		X
Sub-task 9.3 Combine input from web and paper evaluations into reports that allow program managers to assess and improve project management and volunteer needs.		X		X		X		X
Sub-task 9.3 Create web-format and paper surveys for volunteers and the general public to give feedback on how the program has impacted their awareness of water quality issues and their stewardship of water resources.	X							
Sub-task 9.4 Distribute surveys to those listed in 9.3, provide incentives to complete surveys, and issue reminders.	X	X		X	X	X		X
Task 10. REPORTING Develop and submit quarterly reports, final report, and release of claims statement to MiCorps according to contract. (Reports to include all data collected, in both hard copy and electronic format, and any other products and deliverables.)	X	X	X	X	X	X	X	X
Sub-task 10.1 Submit data to the MiCorps Data Exchange Network semi-annually.		X		X		X		X

Site Descriptions
These sites were selected in October 2006 using lists provided by Jo Latimore of the Huron River Watershed Council. Geoff Habron of MSU Fisheries and Wildlife visited 12 of the sites from Jo's lists, and recommended five for volunteer monitoring. Jessica Yorko obtained permissions from property owners, and created maps and directions.

1. Sycamore Creek at Biggie Munn Park in Lansing
- Maquest address: Biggie Munn Park, or Aurelius Road & Jolly Road, Lansing, MI
- Map, directions, & drawing attached.

2. Kalamink Creek at Van Orden Road in Webberville
- Mapquest address: 4620 Van Orden Road, Webberville, MI
- Map, directions, & drawing attached.

3. Corwin Road Tributary at Grand River Avenue in Williamston
- Mapquest address: 1147 W. Grand River Ave, Williamston, MI. (Site is across the street from apartments at this address.)
- Map, directions, & drawing attached.

4. West Branch of the Red Cedar River, below Kane Road, in Stockbridge.
- Mapquest address: 1170 Kane Road, Stockbridge, MI
- Map, directions, & drawing attached.

5. Wolf Creek at Bell Oak Road in Webberville, between 4855 and 4803 Bell Oak Road.
- Mapquest address: 4855 Bell Oak Road, Webberville, MI
- Map & directions attached.

A7. Data Quality Objectives

Precision: The following techniques will be reviewed during training and in retraining of team leaders every three years: [1] collecting style (must be thorough and vigorous), [2] habitat diversity (must include all habitats present and be thorough in each one), and [3] the transfer of collected macroinvertebrates from the net to the sample jars (thoroughness is critical).

Since there is inherent variability in accessing the less common taxa in any stream site and program resources do not allow program manager to perform independent (duplicate) collections of the sampling sites, our goal for quality assurance is conservative. A given site's Stream Quality Index (SQI) score of total diversity (D) measure across macroinvertebrate taxa will be noted as "preliminary" until three spring sampling events and three fall sampling events have been completed. At least two of these six measures will be collected by different volunteer teams. The resulting measures of D and SQI for each site will be compared to the composite (median) results and each should have a relative percent difference (RPD) of less than 40%. This statistic will be measured using the following formula:

RPD= [(Xc – Xv) / (mean of Xc and Xv)] x 100,

where Xc is the composite measurement and Sv is an individual measurement for each parameter.

Note that this examination requires that all stream data records must include the personnel of the monitoring team and the number of each type of habitat sampled.

The Project Expert will also verify all identifications made by the volunteer teams. An error rates should be calculated for each identified sample using the same statistic as above. The RPD of identifications should be less than 5%.

Sample results that exceed these standards should be then noted as "outliers" and examined to determine if the results are likely due to sampling error or a true environmental variation. If sampling error is determined the data point should be removed from the data record. Volunteer teams that generate more than one outlier should be observed by the Project Expert at the next sampling event and be considered for retraining.

Additionally, MiCorps staff will conduct a method validation review with the designated Project Expert to ensure his or her expertise, preferably prior to the first training session held by the Project Expert. This will be conducted with each new Project Expert added to a MiCorps monitoring program. This review will consist of a joint sampling event, with MiCorps staff jointly collecting, sorting and identifying the macroinvertebrates with the Project Expert. Any monitoring issues will be addressed on site. If no major concerns remains, the Project Expert will be considered "certified" by MiCorps.

Bias: Sites will be sampled by different team leaders at least once every three years in each season (two events among six sampling events, if conducted twice per year) to examine the effects of bias in individual collection styles. An RPD between the new measure and the mean of past measure should be less than 40%. Sites not meeting this DQO will be evaluated as above by the Program Expert.

Completeness: Following a QA review of all collected an analyzed data, data completeness will be assessed by dividing the number of measurements judged valid by the number of total measurements performed. The data quality objective for completeness for each parameter for each sampling event is 90%. If the program does not meet this standard, the Program Manager will consult with MiCorps staff to determine the main causes of data validation and develop a course of action to improve the completeness of future sampling events.

Respresentativeness: Study sites are selected to represent the full variety of stream habitat types available, locally, emphasizing the inclusion of riffle habitat. All available habitats within the study sites will be sampled and documented to ensure a thorough sampling of all the organization inhabiting the site. Resulting data from the monitoring program will be used to represent the ecological conditions of the contributing watershed. Since not enough resources are available to allow the program to cover the entire watershed, some sub-watersheds will not initially be represented. Additional sub-watershed sites will be added as resources and volunteers allow.

Comparability: To ensure data comparability, all volunteers in the watershed will follow the same sampling and site selection methods and use the same units of reports. Program directors and trainers will learn the standard MiCorps monitoring methods at annual trainings by MiCorps staff and will train their volunteers to follow those methods to ensure comparability of results among all MiCorps programs. To the extent possible, the monitoring of all study sites will be completed in a single day.

For each sampling event that is not completed on a single day, monitoring by volunteers will be completed within the same two week period. If a site is temporarily inaccessible, such as due to prolonged high water, the monitoring time may be extended for two additional weeks. If the issue concerning inaccessibility is continued beyond the extended dates, then no monitoring data will be collected during that time and there will be a gap in the data. If a team is unable to monitor their site during the specified time, the Team Leader will contact the Project Manager as soon as possible and no later than the end of the first week in the sampling window in order for the Manager to arrange for another team to complete the monitoring. If not team is available, the Project Manger will, if feasible, sample the site. Otherwise, the site will go unmonitored for that season.

A8. Special Training/Certifications

- Program Manager and Program Assistant required to attend Mi-Corps training. Board members and others in the community playing a leadership role in the project may also attend. (July 2006 training attended by Jessica Yorko, Lina Goodwin, Geoff Habron, and Kay Edly.)

- For benthic invertebrate identification, Mid-MEAC uses experienced professionals, and invites volunteers to participate as a learning experience. (ID sessions include a training session.) All identifications must be confirmed by experienced professionals. Mid-MEAC's volunteer experts include Geoff Habron (MSU), Kay Edly (MDEQ), and Matt Flechter (MDEQ).

- For habitat assessments, Mid-MEAC requires a training session that includes "trial run" data collection.

- For benthic invertebrate sampling, Mid-MEAC requires training for collectors, leaders, and assistants. A two-hour session, using the agenda below, provides training for collectors, leaders, and assistants. A 45-minute skill confirmation session is also required on a separate day, which can take place on or prior to sampling day.

Mid-MEAC Volunteer Stream Monitoring Program - Collector, Leader, & Assistant Training Day

Agenda

10:00 AM – 10:15 AM – Welcome & Introductions

10:15 AM – 10:20 AM – Why Collect Bugs?

- Good indicators of localized conditions
- Easy sampling techniques
- Primary source of food for many fish
- Generally abundant communities
- Diversity = Healthy Stream
- Threats to bug diversity: sedimentation, habitat loss, chemical pollution.

10:20 AM – 10:30 AM – Basics of Mid-MEAC Stream Monitoring:

- Based on approach used by Huron River Watershed Council, used for several years; now coordinating 150 volunteers and 30 sites on their Stream Monitoring days.
- Funded for 2 years by the MiCorps program (for staff support, technical assistance, equipment, program development); developing sources for continuing support once MiCorps funding ends in July 2008.
- Will be collecting and identifying samples each spring and fall, and will conduct habitat assessments each spring. We will not do bug identification streamside; we will do it on a separate day, in a lab setting with experts, microscopes, and keys on hand.
- Focusing on Red Cedar River for next few years. Site for this fall will include Sycamore Creek, Red Cedar River at Dobie Road, Kalamink Creek at Van Orden Road in Leroy Township, and one or two others TBD. Will continue to identify good sites, and add sites as new volunteer are recruited.
- On Stream Monitoring days, volunteers will be grouped into teams of five people per team, and assigned one or two sites.
- Roles of people on the team: Picker, Assistant, Collector, Streamside Leader, Manager. (See "Team Structure" sheet, which will also be provided on monitoring day.)

10:30 AM – 10:40 AM – You: the Collector, Leader, and/or Assistant!

- You may be asked to serve as a collector on some monitoring days, and as a leader on other days; so that we can keep new collectors coming in and being trained. For wider sites, it may be advisable to have both a Collector and an Assistant who helps out with collection.

- What the Collector does: wears the waders and gets in the river. Sample **all** of the available habitat types, and brings the samples to the rest of the team to sort through.

- What the Leader does: recording the datasheet, reminding collector about all habitat types.

- Explanation of available habitat types and other terms on datasheet: each team will get a laminated copy of these definitions to take along.

- Collection Techniques: run through laminated technique sheet before you get in the river.

10:45 AM – 11:45 AM – Hands-On Practice – In the River

11:45 AM – 12:00 PM – Pizza and evaluations.

Handouts included: Stream Monitoring Techniques, print out of Jo Latimore's Bug presentation; Team Structure from HRWC; data collection sheets; stream habitat definitions created by Jessica Yorko; bug keys.

Program Manager, Jessica Yorko, assures that qualifications, training, and certifications are completed prior to data collection or recording. This information is documented in sign-in sheets from trainings, and volunteer rosters kept in the program files.

B1. Study Design & Methods

Sampling the benthic community: Multiple collections will be taken from each habitat type present at the site, including riffle, rocks or other large objects, leaf packs, submerged vegetation or roots, and depositional areas, while wading and using a D-frame kicknet.

The trained Streamside Leader will record the number of locations sampled within the monitored reach in each habitat type and note the locations sampled on a site map.

The trained Collector will transfer the material from the net into white pans. The volunteers (Pickers) will pick out samples of all different types of macroinvertebrates from the pans and place them into jars of 70% ethyl alcohol for later identification.

During the collection, the Collector will provide information to the team Streamside Leader in response to questions on the data sheet that review all habitats to be sampled, the state of the creek, and any changes in methodology or unusual observations.

The streamside leader will instruct and assist other team members in detecting and collecting macrointvertebrates in the sorting pans, including looking under bark and inside of constructions made of sticks or other substrates.

Potential sources of variability, such as weather/stream flow differences, season and site characteristic differences will be noted for each event and discussed in study results.

There are places on the data sheet to record unusual procedures or accidents, such as losing part of the collection by spilling. The Collector and the Leader will decide together whether a site needs to have an extended collection time or other variations in procedure (See appended data sheet).

B2. Sample Handling & Custody

At the collecting site, all invertebrate sample jars receive a label written in pencil, stating data, location, name of collector, and number of jars containing the collection from this site, which is placed inside the jar.

The data sheet also states the numbers of jars containing the collection from this site. The team leader is responsible for labeling and securely closing the jars, and the team manager is responsible for returning all jars and all equipment. Upon return to the Program building, the collections are checked for labels, the data sheets are checked for completeness and for correct information on the number of jars containing the collection form the site, and the jars are secured together with a rubber band and site label and placed together in one box. They are stored in the central office until they are examined and counted on the day of identification (one or two weeks later). The data sheets are used on the identification day, after which they remain on file indefinitely. At the time of identifying the sample, the Sample Identifier checks the data sheet and jars to ensure that all the jars, and only the jars, from that collection are present prior to emptying them into a white pan for sorting. If any specimens are separated from the pan during identification, a site label accompanies them. For identification, volunteers sort all individuals from a single jar into look-alike groups, and then are joined by an identification expert who confirms the sorting and provides identification of the taxa present. These identifications are then verified by the Program Expert. When identification of a sample is complete, the entire collection is placed in a single jar of fresh alcohol with a poly-seal cap and a printed label inside the jar and stored at the Program office indefinitely.

The alcohol is carefully changed in the jars every few years.

B3. Analytical Methods

Parameters:

- Macroinvertebrate community will be monitored at least annually in April/May or September/October.
- Habitat will be monitored at least every five years. See Section B2 for monitoring procedures.

Timing:

- Benthic populations from all sites are sampled on the same day in April/May or September/October.
- The physical characteristics of the sites are measured once every 3 to 5 years, during the spring, summer or fall.

Temperature equipment: Taylor maximum/minimum thermometers, which are checked for accuracy in ice water and in boiling water prior to use. Adjustments are made when needed by resetting the location of the scale and then tightening the screws to be snug. If the mercury has separated or there are bubbles in it, the two following methods are followed to correct the problem. The thermometer is swung downward with care several times, or it is immersed completely in water at about 130° F (but lower than 135°F).

B4. Quality Control

Equipment Quality Control:

- Check to make sure equipment is in working order and not damaged
- Clean equipment before and after taking it to the field
- Label equipment with their dates of purchase and dates of last usage
- Check the expiration date of chemical reagents priors to each use
- Check the batteries of all equipment that require them
- Make sure equipment is calibrated appropriately before conducting each test

Field Procedures Quality Control:

- Collect replicate samples
- Conduct repeat and/ore side-by-side tests performed by separate field crews
- At least once every three years in each season change the composition of the field crews to maintain objectivity and minimize individual bias
- Review field records before submitting for analysis to minimize errors

Data Analysis Quality Control:

- Check all calculations twice
- Hard copies of all computer entered data should be reviewed for errors by comparing to field data sheets
- Have qualified professionals review your data analysis methods and results periodically

Since our evaluation is based on the diversity in the community, we attempt to include a complete sample of the different groups present, rather than a random sub-sample. We do not assume that a single collection represents all the diversity in the community, but rather we consider our results reliable only after repeated collections spanning at least three years. Our results are compared with other locations in the same river system that have been sampled in the same way. All collectors attend an in-stream training session, and most sites are sampled by different collectors at different times to diminish the effects of bias in individual collecting styles. Samples where the diversity measures diverge substantially from past samples at the same site are resampled by a new team within two weeks. If a change is confirmed, the site becomes a high priority for the next scheduled collection. Field checks include checking all data sheets to make sure each habitat type available was sampled, and the team leader examines several picking trays to ensure that all present families have been collected. All lab sorting is rechecked by an expert before completing identification.

B5. Instrument/Equipment Testing, Inspection, & Maintenance

Instruments, equipment, supplies to be used:

- Hip & chest waders- check for leaks, wash & dry after each use.
- D-Frame kick-nets- check for holes, wash & dry after each use.
- Forceps – count, make sure they have "flags" so they don't get lost, make sure tips meet.
- Squeeze bottles – wash & dry after each use.
- Magnifying glasses – wash & dry after each use.
- Trays – wash & dry after each use.
- Tarps – wash & dry after each use.

Program Manager and/or Program Assistant will inspect instruments and equipment prior to testing dates, and will handle all maintenance.

Problems will be resolved through repair if possible; replacement if repair is not possible.

All equipment and supplies are being stored at 815 Bancroft Court, Lansing, Michigan. Waders are being stored in a water-proofed cedar closet in basement. Nets are in cases, stored upright in basement. All other items are in boxes, in basement cabinets.

B7. Inspection/Acceptance for Supplies and Consumables

- Bake-lite jars with poly-seal lids – check supply prior to testing date. 120 of each purchased in September 2006.
- Ethanol, 70% - check supply prior to testing date. 2 gallons purchased September 2006.
- Labels & pencils - check supply prior to testing date.

B9. Data Management

- Data will be entered from data sheets directly into the online MiCorps database by a single, trained volunteer or project staff, for storage within the MiCorps data exchange system. Data sheets will be filed at the central office for a period of at least 5 years.

C1. Assessments & Response Actions

- Side-by-side sampling will take place during which a team of our volunteers and an outside expert will sample the same stream. Agreement in sample composition between the two should be 70% or greater.
- Data sheets will incorporate essential QAPP procedures, such as the number of net samples taken from each type of habitat.
- Volunteer team leaders trained by MiCorps will monitor that quality assurance protocols are followed and report any issues possibly affecting data quality.

The total diversity reported by each team must equal at least 70% of the diversity previously found at the site. Sites with results less than 70% will be re-sampled by experts to verify or discard such unusual results, which could be the result of less-than-thorough sampling.

If deviation from the QAPP is noted at any point in the sampling or data management process, the affected samples may be deleted from the data set. Re-sampling will be conducted if warranted and feasible, given that the deviation is noted soon after occurrence and volunteers are available. Otherwise, a gap may be left in the monitoring record. All corrective actions, such as above, will be documented and communicated to MiCorps.

C2. Data Review, Verification, and Validation

The total diversity reported by each team must equal 70% or the diversity previously found at the site, as verified by the program manager. Sites with results less than 70% will be re-sampled, by experts to verify or discard such unusual results, which could be the result of less-than-thorough sampling.

Reports on progress will be submitted to MiCorps as required, with all quality issues noted.

C3. Reconciliation with Data Quality Objectives

C4. Reporting

Quality control reports to MiCorps staff and the Mid-MEAC board will be included quarterly, along with quarterly project reports.