

GUIDE FOR DEVELOPING AND APPROVING QUALITY ASSURANCE PROJECT PLANS (QAPPS)

Version 1. April 2022

Introduction

The Narragansett Bay Estuary Program (NBEP) is a leader in regional science for the Narragansett Bay, Little Narragansett Bay, Coastal Salt Ponds and their watersheds (“study area”). NBEP focuses on creative collaborative solutions to issues surrounding water quality, wildlife, and the way of life for people who live, work, and play in our study area. NBEP is funded through Section 320 of the Clean Water Act administered by the US Environmental Protection Agency (EPA). Roger Williams University (RWU) operates as NBEP’s fiscal sponsor and host entity.

When NBEP receives or distributes funds for work involving the collection or evaluation of environmental data, such work must be carried out according to an appropriately reviewed and approved Quality Assurance Project Plan (QAPP).

EPA has provided [guidance](#) for QAPPs, and for this document we used [Guidance for QAPPs](#). Additionally, we sought guidance from NEIWPCC’s [Quality Management](#) team.

What is a QAPP and When is it needed?

A Quality Assurance Project Plan (QAPP) is a planning document that provides the plan for obtaining the type, quantity, and quality of data needed to support environmental decision making. If a project is using data to make a decision, then a QAPP is needed. The QAPP ensures that the data will meet project requirements.

Environmental data include information collected directly from measurements, produced from models, and compiled from other sources such as databases or literature and evaluated for a project. Data is defined as both natural and social science information collected and analyzed for a project. This can be through direct measurements, or gathered from other sources, or compiled from existing databases. A QAPP is also needed when using or developing a computer model to aid in decision making.

The following is a table of the type of projects NBEP routinely funds organized by whether they require a QAPP. This table is not exhaustive. If unsure, the staff scientist will verify with the project partners and EPA if a particular project needs a QAPP.

Needs a QAPP	Does NOT need a QAPP
Research	Capacity-Building
≥ 60-70% design for permitting	≤ 60% design <i>if no data collection, compilation, or modeling</i>
Any design <i>including data collection, compilation, or modeling</i>	Shovel-Ready Implementation
Monitoring	Outreach
	Policy

The QAPP documents the results of a project’s technical planning process and provides a clear, concise, and complete plan for the data operation and its quality objectives. The plan also identifies key personnel. This document will communicate how to implement the project to all individuals involved. While this does not guarantee successful collection of the highest quality data, implementing and following a QAPP improves the potential for success.

The QAPP must be written and approved prior to the start of any data collection or analysis. If the QAPP is not approved before work begins, a stop-work order will be issued.

A successful QAPP includes the following:

- The project’s goals and objectives or questions to be investigated
- Specific roles of the individuals and organizations involved with the project
- Decision(s) to be made using the information obtained
- How, when, and where project information will be acquired or generated
- Possible projects that may arise and actions to mitigate their impact on the project
- The type, quality, and quantity of the data collected or retrieved
- A description of the tolerance for error within the data (how “good” the data must be to make a decision)
- How the data will be stored, analyzed, assessed, and reported (including signed agreement that RWU’s [Data Storage Policy](#) will be followed).

The [Data Storage Policy](#) is also included as Appendix A

NBEP uses three types of QAPPs:

1. primary data collection QAPP (where the project team will go out and collect observations or samples)
2. secondary data QAPP (where previously published data are compiled and used to make a decision)
3. modeling QAPP (where the project team will develop or use a model to make a decision; this QAPP is very similar to a secondary data QAPP and will most likely only be used when the project relies solely on the model to make a decision)

Checklists defining exactly what will be reviewed for each QAPP are attached as Appendix B.

Template QAPPs are available through NBEP’s website: <https://www.nbep.org/projects-we-fund/forms-guidance> and by email to NBEP’s staff scientist.

Any questions about which QAPP is appropriate for the work should be directed to NBEP’s staff scientist.

Who must prepare/read/sign a QAPP?

All recipients of a subaward through the Environmental Protection Agency (EPA) where data will be used to inform a decision must prepare a QAPP. NBEP maintains templates of the three types of QAPPs and checklists to ensure that preparers have included all the necessary information (available on [website](#) and by email).

QAPPs will be reviewed by NBEP, EPA, and senior members of the project team (see section below). Once the QAPP has gone through official review by EPA and NBEP, the QAPP must be signed by senior members of the project team, NBEP, and EPA. EPA holds final approval of the QAPP which allows work to proceed. Once approved, the QAPP should be distributed to all individuals listed in the QAPP and work can begin.

Management and Organization

This section describes the organizations and individuals involved in developing and approving QAPPs. Each project will have a specific list of individuals and organizations pertinent to the project, and therefore the following list is not exhaustive.

The Project Team: includes the organizations and individuals who are involved in managing the project or collecting/generating the data used for the project; writes QAPP

NBEP: is first point of contact for the project team for all proposal/subaward questions; review QAPPs; ensures QAPPs are being followed through review

RWU¹: is responsible for financial management of the grant, and ensures fiscal responsibility

EPA: is responsible for reviewing QAPPs, and coordinates with NBEP and RWU on funding guidance

QAPP Review and Approval

All QAPPs will be reviewed by NBEP, EPA, and other groups as necessary. If NBEP is preparing a QAPP, they will secure an external review to ensure the QAPP meets the expectations.

QAPPs take time to develop and approve. Project teams should allow at least 3 months of lead time for QAPP development and approval. The preparation of the QAPP is dictated by the Project Team preparing the QAPP. On average, NBEP finds that the Project Team needs 2 weeks to draft the QAPP. The draft QAPP is then submitted to NBEP's Staff Scientist who will review it for completeness and provides a first round of feedback. Once that feedback is incorporated, NBEP will review the QAPP according to the checklists provided in Appendix A and will submit the QAPP to EPA's Quality Assurance Team and NBEP's EPA Coordinator, Caitlyn Whittle (R1QAPPS@epa.gov and whittle.caitlyn@epa.gov) for simultaneous review. Memos containing comments will be shared with the Project Team, who will then revise the QAPP and submit it for a second review. Once all parties are satisfied, the QAPP will be signed and distributed. Below is an approximate timeline of milestones for QAPP review and approval.

¹ Roger Williams University will only read and approve QAPPs when their employees are on the Project Team. For all other QAPPs, review and approval rests with NBEP and EPA

Milestone	Time from Contract Award
1. Project Team prepares QAPP	2 weeks
2. NBEP reviews for completeness and provides first round of feedback	4 weeks
3. Project Team revises QAPP	5 weeks
4. Project Team submits QAPP to NBEP for review. NBEP submits QAPP to EPA for simultaneous review	6 weeks
5. NBEP and EPA reviews QAPP and prepares memos with comments and necessary revisions	10 weeks
6. Project Team revises QAPP and resubmits for review	12 weeks
7. If revisions are adequate, QAPP is finalized by circulating the signature page to all parties for authorization	14 weeks
8. NBEP retains finalized plan, and Project Team provides copies to all necessary parties	14 weeks

QAPP Modifications

If procedures and/or activities described in the original QAPP must be modified immediately (that is before or between annual reviews; see below) to achieve project objectives, the plan must be amended. The amendment must be reviewed and approved in the same manner as the original QAPP. Only after the amendment has been approved can the change be implemented.

Annual Review of Approved QAPPs

All approved QAPPs for multi-year projects will be reviewed annually by the project team to determine if any changes are necessary. Those changes will be documented in a letter shared with all organizations who approved the QAPP. The NBEP Staff Scientist is responsible initiating annual review. If significant changes are necessary, EPA and/or NBEP may require the QAPP undergo full update with review.

Appendix A

Roger Williams University Data Storage Policy

ROGER WILLIAMS UNIVERSITY

Data Storage Policy

Purpose

Roger Williams University is committed to protecting its data. Data Storage environments including Cloud Storage are useful in many ways. However, there are inherent risks relative to security, copyright, privacy, and data retention. Unlike data stored on premise, when documents are saved in Cloud Storage environments, the University must identify the appropriate administrative and access controls for the stored data. This policy notes best practices and applies to all University employees and affiliates that store the University Data classifications outlined in this policy.

Scope

This policy applies to all persons accessing University data on premise and/or using 3rd party services capable of storing or transmitting protected or sensitive electronic data that are owned or leased by Roger Williams University, all consultants or agents of the University and any parties who are contractually bound to handle data produced by and in accordance with University contractual agreements and obligations.

Compliance with Legal and Regulatory Requirements

The University has many federal laws that it must follow, these include the Family Educational Rights and Privacy Act of 1974 (FERPA), and RI General Laws 11-49.3 (Identify Theft Protection Act) and 5-37.3 (Confidentiality of Health Care Communications and Information Act).

Definitions

Data Classifications:

Protected Data - Under state law, Personally Identifiable Information means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when the name and the data elements are not encrypted or are in hard copy, paper format-

- Social security number
- Driver's license number, state identification card number, or tribal identification number
- Account number, credit, or debit card number, with or without any required security code, access code, password, or personal identification number, that would permit access to an individual's financial account
- Medical or health insurance information
- E-mail address with any required security code, access code, security Q&A, or password that would permit access to an individual's personal, medical, insurance, or financial account.

Sensitive Data – Data not meant for public distribution but not classified as Protected Data (i.e. internal policies, internal memos, Intranet information)

Public Data – Data meant for public distribution (i.e. external website, public relations materials, etc.)

Storage Classifications:

Cloud Storage – Cloud infrastructure provisioned for open use by the general public (i.e. Dropbox, Microsoft OneDrive - Personal, Google Docs - Personal, etc.)

University System on Premise– Private on premise Infrastructure provisioned for the exclusive use of Roger Williams University (i.e. Network Drives, Student Information System, Finance System, HR System etc.)

University System Cloud-based– Cloud Infrastructure provisioned for the exclusive use of Roger Williams University (i.e. RWU Microsoft O365, RWU Learning Management System, RWU Google etc.)

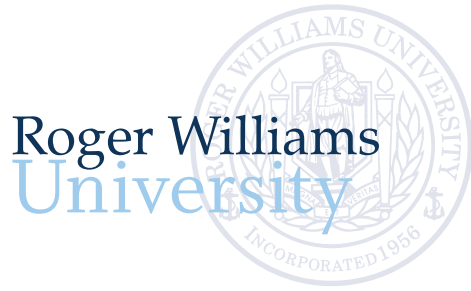
Local Storage – Personal or Roger Williams University devices not connected to a network controlled infrastructure (i.e. USB drives, laptops, desktop computers, etc.)

Policy Guidelines: The following guidelines note the permitted and prohibited storage systems for the data classifications outlined in this policy

Data Classification	Cloud Storage	University System on Premise	University System Cloud-based	Local Storage
Protected Data	Prohibited	Permitted	Permitted with Encryption	Prohibited
Sensitive	Prohibited	Permitted	Permitted with Encryption	Prohibited
Public	Permitted	Permitted	Permitted	Permitted

All Roger Williams University employees and affiliates looking to provision Cloud Storage services for work-related activities should consult with the Information Technology Department before doing so in order to ensure appropriate data security measures are taken.

Cross Policy References: Records Retention Policy [Retention Schedule], Written Information Security Program [Data Destruction Methods]



NARRAGANSETT BAY ESTUARY PROGRAM

DATA STORAGE POLICY AGREEMENT

I, **[name]** of **[organization]**, have read Roger Williams University's [Data Storage Policy](#) and agree to all its stipulations for the NBEP-funded project entitled **[project]**.

Signed,

Signature

Date

Appendix B

Primary Data QAPP Checklist (EPA R-5)

EPA R-5 (Primary Data) Checklist for Review of Quality Assurance Project Plans

This checklist is an example of what could be used to either write or review a QA Project Plan, especially those involving field sampling and laboratory analyses. The items noted follow those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001 a).

PROJECT TITLE: _____

Preparer: _____

Date Submitted for Review: _____

Reviewer: _____

Date of Review: _____

Note: A=Acceptable; U=Unacceptable; NI=Not Included; NA=Not Applicable

DOCUMENT CONTROL

Element	A	U	NI	NA	Comments
Document control information is indicated in header of each QAPP page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project title is indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QAPP version number and date are indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Page number is indicated in "Page X of Y" format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PROJECT MANAGEMENT

Element	A	U	NI	NA	Comments
A1. Title and Approval					
Contains project title	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates revision number, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates EPA cooperative agreement number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates RWU grant number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates organization(s)' name(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' project manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' QA manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other signatures, as needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A2. Table of Contents					
Lists QA Project Plan information sections and relevant page numbers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Document control information indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A3. Distribution List					
Includes all individuals who are to receive a copy of the QA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Project Plan and identifies their organization					
Element	A	U	NI	NA	Comments
A4. Project/Task Organization					
Identifies key individuals involved in all major aspects of the project, including contractors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses their responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project QA Manager position indicates independence from unit generating data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual responsible for maintaining the official, approved QA Project Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Organizational chart shows lines of authority and reporting responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A5. Problem Definition/Background					
States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clearly explains the reason (site background or historical context) for initiating this project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies regulatory information, applicable criteria, action limits, etc., necessary to the project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A6. Project/Task Description					
Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the project's goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates QAPP end date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details geographical locations to be studied, including maps where possible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses resource and time constraints, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A7. Quality Objectives and Criteria					
Identifies performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, including project action limits and laboratory detection limits and range of anticipated concentrations of each parameter of interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses precision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Addresses bias	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses representativeness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies the need for completeness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the need for comparability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Discusses desired method sensitivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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Element	A	U	NI	NA	Comments
A8. Special Training/Certifications					
Identifies any project personnel specialized training or certifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses how this training will be provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates personnel responsible for assuring these are satisfied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where this information is documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A9. Documentation and Records					
Identifies report format and summarizes all data report package information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lists all other project documents, records, and electronic files that will be produced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where project information should be kept and for how long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses back up plans for records stored electronically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individuals responsible for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA GENERATION and ACQUISITION

Element	A	U	NI	NA	Comments
B1. Sampling Process Designing (Experimental Design)					
Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details the type and total number of sample types/matrix or test runs/trials expected and needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates where samples should be taken, how sites will be identified/located	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses what to do if sampling sites become inaccessible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies what information is critical and what is for informational purposes only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies sources of variability and how this variability should be reconciled with project information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
B2. Sampling Methods					
Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates how each sample/matrix type should be collected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If <i>in situ</i> monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates how samples are to be homogenized, composited, split, or filtered, if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates what sample containers and sample volumes should be used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies any equipment and support facilities needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B3. Sample Handling and Custody					
States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for <i>in situ</i> or continuous monitoring, the maximum time before retrieval of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies chain-of-custody procedures and includes form to track custody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
B4. Analytical Methods					
Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies equipment or instrumentation needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies any specific method performance criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies procedures to follow when failures occur, identifying individual responsible for correct action and appropriate documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies sample disposal procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies laboratory turnaround times needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Provides method validation information and SOPs for nonstandard methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For projects in NY, if required by the funding source or a project partner (e.g. NYSDEC), specifies that laboratories to be used are NYSDOH ELAP certified for each parameter to be analyzed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B5. Quality Control					
For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B6. Instrument/Equipment Testing, Inspection and Maintenance					
Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies testing criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Notes availability and location of spare parts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates procedures in place for inspecting equipment before usage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for testing, inspection and maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of correct action determined and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
B7. Instrument/Equipment Calibration and Frequency					
Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies how deficiencies should be resolved and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

B8. Inspection/Acceptance for Supplies and Consumables					
Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies the individual(s) responsible for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

B9. Non-Direct Measurements					
Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates the acceptance criteria for these data sources and/or models	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies key resources/support facilities needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

B10. Data Management					
Describes data management scheme from field to final use and storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies data handling equipment/procedures that should be used to process, compile, analyze and transmit data reliably and accurately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the process for data archival and retrieval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes procedures to demonstrate acceptability of hardware and software configurations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Attaches checklists and forms that should be used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ASSESSMENT and OVERSIGHT

Element	A	U	NI	NA	Comments
C1. Assessments and Response Actions					
Lists the number, frequency and type of assessment activities that should be conducted, with the approximate dates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders and any other possible participants in the assessment process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how and to whom assessment information should be reported	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Includes standard NBEP assessment language: "NBEP may implement, at its discretion, various reviews of this project to assess conformance and compliance to the Quality Assurance Project Plan. NBEP may issue a stop work order and require corrective action(s) if nonconformance or noncompliance to the Quality Assurance Project Plan is found."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C2. Reports to Management					
Identifies what project QA status reports are needed and how frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies who should write these reports and who should receive this information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA VALIDATION AND USABILITY

Element	A	U	NI	NA	Comments
D1. Data Review, Verification and Validation					
Describes criteria that should be used for accepting, rejecting or qualifying project data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D2. Verification and Validation Methods					
Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies issue resolution process, and method and individual responsible for conveying these results to data users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Attaches checklists, forms and calculations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

D3. Reconciliation with User Requirements					
Describes procedures to evaluate the uncertainty of the validated data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how limitations on data use should be reported to the data users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Secondary Data QAPP Checklist

Modified EPA R-5 Checklist for Review of Quality Assurance Project Plans Using Secondary Data

This checklist is an example of what could be used to either write or review a QA Project Plan, especially those that call solely for the collection and use of secondary data. The items noted follow those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a) as applicable, and *EPA New England QAPP Guidance for Projects Using Secondary Data, Revision 2* (EPA, 2003).

PROJECT TITLE: _____

Preparer: _____

Reviewer: _____

Date Submitted for Review: _____

Date of Review: _____

Note: A=Acceptable; U=Unacceptable; NI=Not Included; NA=Not Applicable

DOCUMENT CONTROL

Element	A	U	NI	NA	Comments
Document control information is indicated in header of each QAPP page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project title is indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QAPP version number and date are indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Page number is indicated in "Page X of Y" format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PROJECT MANAGEMENT

Element	A	U	NI	NA	Comments
A1. Title and Approval					
Contains project title	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates revision number, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates EPA cooperative agreement number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates RWU grant number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates organization(s)' name(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' project manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' QA manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other signatures, as needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A2. Table of Contents					
Lists QA Project Plan information sections and relevant page numbers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Document control information indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A3. Distribution List					
Includes all individuals who are to receive a copy of the QA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Project Plan and identifies their organization					
Element	A	U	NI	NA	Comments
A4. Project/Task Organization					
Identifies key individuals involved in all major aspects of the project, including contractors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses their responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project QA Manager position indicates independence from unit generating data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual responsible for maintaining the official, approved QA Project Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Organizational chart shows lines of authority and reporting responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A5. Problem Definition/Background					
States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clearly explains the reason (site background or historical context) for collecting secondary data and how that data will be used to meet project goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies regulatory information, applicable criteria, action limits, etc., necessary to the project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A6. Project/Task Description					
Summarizes work to be performed, for example, secondary data files to be obtained, analyses to be performed etc., that support the project's goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as secondary data collection, analysis, data or file reviews, and assessments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates QAPP end date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details geographical locations to be studied, including maps where possible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses resource and time constraints, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A7. Quality Objectives and Criteria					
Identifies the secondary data needed to satisfy the project objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses types of secondary data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Addressed the age of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses geographical representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses temporal representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses technological representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
A8. Special Training/Certifications					
Identifies any project personnel specialized training or certifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses how this training will be provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates personnel responsible for assuring these are satisfied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where this information is documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A9. Documentation and Records					
Identifies report format and summarizes all data report package information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lists all other project documents, records, and electronic files that will be produced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where project information should be kept and for how long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses back up plans for records stored electronically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individuals responsible for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA ACQUISITION

Element	A	U	NI	NA	Comments
B1. Sources of Secondary Data					
Identifies sources of required secondary data, including the originating organization(s), and the report/publication title and date. May be displayed in tabular format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies the generators of required secondary data (if different from source), including the originating organization(s) and data collection date(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies the hierarchy of sources for the gathering of secondary data, where applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses the rationale for selecting the data sources(s) identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies that all sources of secondary data gathered will be identified in project reports and deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Element	A	U	NI	NA	Comments

B2. Quality of Secondary Data					
Discusses quality requirements of secondary data and corresponding acceptance criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses accuracy requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses precision requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses representativeness requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses completeness requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses comparability requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the procedures that will be employed to determine the quality of secondary data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Includes disclaimer to be used in all project work products and reports if no quality requirements are being employed or when the quality of secondary data cannot be determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B3. Data Management					
Describes data management and storage scheme.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies data handling equipment/procedures that should be used to process, compile, analyze and transmit data reliably and accurately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for data management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the process for data archival and retrieval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes procedures to demonstrate acceptability of hardware and software configurations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Attaches checklists and forms that should be used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ASSESSMENT and OVERSIGHT

Element	A	U	NI	NA	Comments
C1. Assessments and Response Actions					
Lists the number, frequency and type of assessment activities that should be conducted, with the approximate dates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders and any other possible participants in the assessment process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how and to whom assessment information should be reported	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
Includes standard NBEP assessment language: "NBEP may implement, at its discretion, various reviews of this project to assess conformance and compliance to the Quality Assurance Project Plan. NBEP may issue a stop work order and require corrective action(s) if nonconformance or noncompliance to the Quality Assurance Project Plan is found."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C2. Reports to Management					
Identifies what project QA status reports are needed and how frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies who should write these reports and who should receive this information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA REDUCTION, REPORTING, AND VALIDATION

Element	A	U	NI	NA	Comments
D1. Data Reduction					
Describes reduction and evaluation procedures specific to the project, including calculations and equations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D2. Verification and Validation Methods					
Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies issue resolution process, and method and individual responsible for conveying these results to data users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Attaches checklists, forms and calculations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D3. Reconciliation with User Requirements					
Describes procedures to evaluate the uncertainty of the validated data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how limitations on data use should be reported to the data users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Modeling QAPP Checklist

Modified EPA R-5 Checklist for Review of Quality Assurance Project Plans for Modeling Projects Using Secondary Data

This checklist is an example of what could be used to either write or review a QA Project Plan, especially those that call solely for the collection and use of secondary data. The items noted follow those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a) as applicable, and *EPA New England QAPP Guidance for Projects Using Secondary Data, Revision 2* (EPA, 2003).

PROJECT TITLE: _____

Preparer: _____

Reviewer: _____

Date Submitted for Review: _____

Date of Review: _____

Note: A=Acceptable; U=Unacceptable; NI=Not Included; NA=Not Applicable

DOCUMENT CONTROL

Element	A	U	NI	NA	Comments
Document control information is indicated in header of each QAPP page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project title is indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QAPP version number and date are indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Page number is indicated in "Page X of Y" format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PROJECT MANAGEMENT

Element	A	U	NI	NA	Comments
A1. Title and Approval					
Contains project title	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates revision number, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates EPA cooperative agreement number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates RWU grant number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates organization(s)' name(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' project manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature and date lines for organization(s)' QA manager(s) present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other signatures, as needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A2. Table of Contents					
Lists QA Project Plan information sections and relevant page numbers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Document control information indicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A3. Distribution List					
Includes all individuals who are to receive a copy of the QA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Project Plan and identifies their organization					
Element	A	U	NI	NA	Comments
A4. Project/Task Organization					
Identifies key individuals involved in all major aspects of the project, including contractors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses their responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project QA Manager position indicates independence from unit generating data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual responsible for maintaining the official, approved QA Project Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Organizational chart shows lines of authority and reporting responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A5. Problem Definition/Background					
States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clearly explains the reason (site background or historical context) for collecting secondary data and how that data will be used to meet project goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies regulatory information, applicable criteria, action limits, etc., necessary to the project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Explains why a modeling approach is appropriate to address the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If a particular model has been selected, explains why that model is better to address the problem than other similar models	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A6. Project/Task Description					
Summarizes work to be performed, for example, secondary data files to be obtained, analyses to be performed etc., that support the project's goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as secondary data collection, analysis, data or file reviews, and assessments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates QAPP end date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details geographical locations to be studied, including maps where possible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses resource and time constraints, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A7. Quality Objectives and Criteria					
Description of specific task requiring modeling and the intended uses of modeling output to achieve the task	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
Identifies performance/measurement criteria for all information to be collected for use in the model, including acceptance criteria for information obtained from previous studies, project action limits and laboratory detection limits and range of anticipated concentrations of each parameter of interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses types of secondary data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Addressed the age of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses geographical representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses temporal representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses technological representation of data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lists required hardware/software configurations for those studies involving software evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A8. Special Training/Certifications					
Identifies any project personnel specialized training or certifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses how this training will be provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indicates personnel responsible for assuring these are satisfied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where this information is documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A9. Documentation and Records					
Identifies report format and summarizes all data report package information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lists all other project documents, records, and electronic files that will be produced, potentially including model science formulation reports, peer review/model evaluation group reports, model assessment reports, model calibration reports, a model users' manual, configuration and code maintenance manuals, and reports describing model code standards, code auditing and code testing, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies where project information should be kept and for how long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses back up plans for records stored electronically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individuals responsible for this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA ACQUISITION AND MODEL USE OR DEVELOPMENT

Element	A	U	NI	NA	Comments
B1. Sources of Secondary Data					
Identifies sources of required secondary data, including the originating organization(s), and the report/publication title and date. May be displayed in tabular format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies the generators of required secondary data (if different from source), including the originating organization(s) and data collection date(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies the hierarchy of sources for the gathering of secondary data, where applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses the rationale for selecting the data sources(s) identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specifies that all sources of secondary data gathered will be identified in project reports and deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B2. Quality of Secondary Data					
Discusses quality requirements of secondary data and corresponding acceptance criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses accuracy requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses precision requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses representativeness requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses completeness requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses comparability requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the procedures that will be employed to determine the quality of secondary data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Includes disclaimer to be used in all project work products and reports if no quality requirements are being employed or when the quality of secondary data cannot be determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B3. Data Management and Hardware/Software Configuration					
Describes data management and storage scheme.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies data handling equipment/procedures that should be used to process, compile, analyze and transmit data reliably and accurately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for data management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the process for data archival and retrieval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes procedures to demonstrate acceptability of hardware and software configurations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes or attaches any data forms, checklists, or on-line interactive screens used in the modeling process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
Includes any necessary graphics to document the data management process (e.g., process flow diagrams, modeling flow charts, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how internal checks used during data entry should be documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how uncertainty and variability in the model results will be determined or characterized (e.g., summary statistics, frequency distributions, goodness-of-fit tests)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lists equipment, both hardware and software, that will be used on the project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes system performance requirements, addressing security issues, software installation needs and associated documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes plan for development of model coding standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes plan for model testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes plan for development of model user's manual and/or maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how model source code will be stored and maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Includes configuration management plan to control software/hardware configuration during model development or application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B4. Model Calibration					
Describes the objectives of model calibration activities, including acceptance criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes expected frequency of model calibration activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details the model calibration procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the method(s) of acquiring input data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes types of output generated by the model calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes the approach being used to characterize uncertainty (e.g., sensitivity analysis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details corrective action to be taken if acceptance criteria are not met	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Details resources and responsibilities related to model calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Discusses the analysis of model output relative to acceptance criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ASSESSMENT and OVERSIGHT

Element	A	U	NI	NA	Comments
C1. Assessments and Response Actions					
Lists the number, frequency and type of assessment activities that should be conducted, with the approximate dates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders and any other possible participants in the assessment process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes procedures for both internal QA assessments (review of input data, code verification, calibration, benchmarking) and external assessments (peer review of model theory and/or structure)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how and to whom assessment information should be reported	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Includes standard NBEP assessment language: "NBEP may implement, at its discretion, various reviews of this project to assess conformance and compliance to the Quality Assurance Project Plan. NBEP may issue a stop work order and require corrective action(s) if nonconformance or noncompliance to the Quality Assurance Project Plan is found."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes planned model code performance testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes planned model performance evaluations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes planned sensitivity analysis for model outputs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes planned uncertainty analysis for model outputs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C2. Hardware/Software Assessments and Configuration Tests					
Describes how hardware and software configurations will be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes model code development inspections and verification tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how programming errors will be screened and corrected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how model equations will be checked for correct placement/relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Describes how linkages between model code and uncertainty analysis will be checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how model framework will be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Element	A	U	NI	NA	Comments
Describes planned integration tests (to check computational and transfer interfaces between model modules)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes any planned regression tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes stress testing of complex models (to ensure that maximum model load does not exceed system limitations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes process for beta testing of pre-release materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C3. Model Peer Review					
Describes process for peer review of the theoretical basis for the model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes process for peer review of the mathematical model structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes process for peer review of model outputs and predictions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes process for peer review of model calibration procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes process for peer review of final technical products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C4. Reports to Management					
Identifies what project QA status reports are needed and how frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Identifies who should write these reports and who should receive this information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

DATA VALIDATION AND USEABILITY

Element	A	U	NI	NA	Comments
D1. Validation Criteria					
Describes data reduction and evaluation procedures specific to the project, including calculations and equations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes criteria used to review and validate input data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes criteria used to review and validate model components such as theory, mathematical structure, code, and calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes criteria used to test model performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes criteria used to review and validate model outputs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D2. Verification and Validation Methods					

Describes methods for review of model components such as theory, mathematical structure, code, and calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes methods used to test model performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Element	A	U	NI	NA	Comments
Describes methods for assessment of model output and usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D3. Reconciliation with User Requirements					
Describes procedures to evaluate the uncertainty of the validated data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how limitations on data use should be reported to the data users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes any potential uncertainties related to decisions made based on limitations in model input data and/or limitations in the model and how this will be reported	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes how any departures from assumptions set in the planning phase of the model will be documented and reported to users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Describes procedures for final acceptance testing (testing needed before a new model or model application is accepted by the end user)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

