QUALITY ASSURANCE PROJECT PLAN REVIEW CHECKLIST

This checklist will be used to review Quality Assurance Project Plans (QAPPs) that are submitted to the California Air Resources Board (ARB) from monitoring organizations within ARB's Primary Quality Assurance Organization (PQAO). This checklist was developed by the U.S. Environmental Protection Agency (EPA) following those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a)[1] and *EPA Guidance for QA Project Plans (QA/G-5)* (EPA, 2002)[2].

DOCUMENT TITLE: _____ **AGENCY:** _____
REVIEWER: _____ **DATE:** _____

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

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
PROJECT MANAGEMENT						
A1. Title and Approval Sheet						
Contains project title						
Indicates revision number, if applicable						
Indicates organization's name						
Dated signature of organization's project manager present						
Dated signature of organization's QA manager present						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
Other signatures, as needed						
A2. Table of Contents						
Lists QA Project Plan information sections						
Document control information indicated						
A3. Distribution List						
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization						
A4. Project/Task Organization						
Identifies key individuals involved in all major aspects of the project, including contractors						
Discusses their responsibilities						
Project QA Manager position indicates independence from unit generating data						
Identifies individual responsible for maintaining the official, approved QA Project Plan						
Organizational chart shows lines of authority and reporting responsibilities						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
A5. Problem Definition/Background						
States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained						
Clearly explains the reason (site background or historical context) for initiating this project						
Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project						
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						
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						
Details geographical locations to be studied, including maps where possible						
Discusses resource and time constraints, if applicable						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
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						
Discusses precision						
Addresses bias						
Discusses representativeness						
Identifies the need for completeness						
Describes the need for comparability						
Discusses desired method sensitivity						
A8. Special Training/Certifications						
Identifies any project personnel specialized training or certifications						
Discusses how this training will be provided						
Indicates personnel responsible for assuring these are satisfied						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
Identifies where this information is documented						
A.9 Documentation and Records						
Identifies report format and summarizes all data report package information						
Lists all other project documents, records, and electronic files that will be produced						
Identifies where project information should be kept and for how long						
Discusses back up plans for records stored electronically						
States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this						
DATA GENERATION and ACQUISITION						
B1. Sampling Process Design (Experimental Design)						
Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
Details the type and total number of sample types/matrix or test runs/trials expected and needed						
Indicates where samples should be taken, how sites will be identified/located						
Discusses what to do if sampling sites become inaccessible						
Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.						
Specifies what information is critical and what is for informational purposes only						
Identifies sources of variability and how this variability should be reconciled with project information						
B2. Sampling Methods						
Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken						
Indicates how each sample/matrix type should be collected						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
If *in situ* monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data						
If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages						
Indicates how samples are to be homogenized, composited, split, or filtered, if needed						
Indicates what sample containers and sample volumes should be used						
Identifies whether samples should be preserved and indicates methods that should be followed						
Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of						
Identifies any equipment and support facilities needed						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	COMMENTS
	Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented						
B3.	**Sample Handling and Custody**						
	States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information						
	Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)						
	Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible						
	Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan						
	Identifies chain-of-custody procedures and includes form to track custody						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	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						
	Identifies equipment or instrumentation needed						
	Specifies any specific method performance criteria						
	Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation						
	Identifies sample disposal procedures						
	Specifies laboratory turnaround times needed						
	Provides method validation information and SOPs for nonstandard methods						
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						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	COMMENTS
	Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented						
	Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data						
B6.	**Instrument/Equipment Testing, Inspection, and Maintenance**						
	Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this						
	Identifies testing criteria						
	Notes availability and location of spare parts						
	Indicates procedures in place for inspecting equipment before usage						
	Identifies individual(s) responsible for testing, inspection and maintenance						
	Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	COMMENTS
B7.	**Instrument/Equipment Calibration and Frequency**						
	Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration						
	Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment						
	Identifies how deficiencies should be resolved and documented						
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						
	Identifies the individual(s) responsible for this						
B9.	**Non-direct Measurements**						
	Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project						
Indicates the acceptance criteria for these data sources and/or models						
Identifies key resources/support facilities needed						
Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing						
B10. Data Management						
Describes data management scheme from field to final use and storage						
Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs						
Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately						
Identifies individual(s) responsible for this						
Describes the process for data archival and retrieval						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	COMMENTS
	Describes procedures to demonstrate acceptability of hardware and software configurations						
	Attaches checklists and forms that should be used						
ASSESSMENT and OVERSIGHT							
C1.	**Assessments and Response Actions**						
	Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates						
	Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process						
	Describes how and to whom assessment information should be reported						
	Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented						
C2.	**Reports to Management**						
	Identifies what project QA status reports are needed and how frequently						

ELEMENT		A	U	NI	NA	PAGE # SECTION #	COMMENTS
	Identifies who should write these reports and who should receive this information						
DATA VALIDATION and USABILITY							
D1.	**Data Review, Verification, and Validation**						
	Describes criteria that should be used for accepting, rejecting, or qualifying project data						
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						
	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.						
	Identifies issue resolution process, and method and individual responsible for conveying these results to data users						
	Attaches checklists, forms, and calculations						

ELEMENT	A	U	NI	NA	PAGE # SECTION #	COMMENTS
D3. Reconciliation with User Requirements						
Describes procedures to evaluate the uncertainty of the validated data						
Describes how limitations on data use should be reported to the data users						

References-

1. EPA Requirements for QA Project Plans (QA/R-5) (EPA, 2001a**),** *www.**epa**.gov/quality/qs-docs/**r5**-final.pdf*
2. EPA Guidance for QA Project Plans (QA/G-5) (EPA, 2002), *www.**epa**.gov/QUALITY/qs-docs/**g5**-final.pdf*