Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard

QAPP Element	QA/R-5 QAPP Requirements Element #	QA/S-2 QAPP Standard Element #	Description of Changes to Convert from R-5 to S-2 (This Tips Sheet provides a summary of changes only. Refer to the QAPP Standard for the full requirements.)[1]
Overall Changes	—	—	• Replace & update all references of EDO to EIO. S-2 applies the term environmental information operations (EIO) instead of environmental data operations (EDO). • Must address all QAPP standard elements; if an element is not applicable, QAPP preparer shall explain why. • Graded approach cannot be used to waive requirements. • Requires controlled documents to be attached or available online (hyperlink).
Group A	**Project Management**	**Project Management, Information & Data Quality Objectives (DQOs)**	• **Note: Information/Data Quality Objectives (DQOs) was added to Group A title.**
Total Group A Elements	**A1 – A9 (9 total)**	**A1 – A12 (12 total)**	• The number of Group A elements increased from 9 to 12. Follow the Region 8 QAPP Review Crosswalk to ensure all Group A information is provided in your QAPP.
Title and Approval Page	A1 Title and Approval Sheet	A1 Title Page	• Non-EPA organizations shall add the Agreement Traceability to the Title Page: Grant or Cooperative Agreement #, Contract #, Task Order #(s), Interagency Agreement #, Title/Date of Memorandum of Understanding/Memorandum of Agreement, Citation of Regulatory Requirements, or Title/Date of Enforcement/Legal Agreement. • If more than 1 non-EPA organization is involved, there may be additional operations/project managers (PM) and/or QA officers (QAO) to add to the Approval Page.
		A2 Approval Page(s)	

Table of Contents	A2 Table of Contents	A3 Table of Contents, Document Format, & Document Control	• Document control shall be included on every page in either a header or footer and, at a minimum, include:
			  • Title of document (abbreviations are acceptable),
			  • Version # (original or version #),
			  • Date of the version, and
			  • Page # in relation to the total # of pages (*e.g.,* Page x of y).

Distribution List	A3 Distribution List	A7 Distribution List	• Distribution List element moves from A3 (in R-5) to A7 (in S-2). • S-2 element A7 - Distribution List shall include all personnel involved in EIO for both operations & quality role(s) (*e.g.,* EPA, grant recipient, contractors, subcontractors).
Independence of Project QA Officer (QAO)	Appears in A4	(New) Standalone Element - A9 Project QAO Independence	• Move discussion of project QAO's independence of unit generating EIO/data from A4 (in R-5) to new standalone element A9 (in S-2). • For project-level QAPPs, use Project QA Officer (QAO) instead of QA Manager (QAM).

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard
Region 8 QA Branch Effective Date: 20250505

Page 1 of 6

			Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard			

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Project / Task Organization	A4 Project / Task Organization	A8 Project Organization	• A8 Project Organization - identify and describe the individual(s) & organization(s) involved, their roles & responsibilities, and QAPP approval authority. • Operations Manager (used in S-2) is the Project Manager or PM (used in R-5) - either one is acceptable.
		A10 Project Organization Chart & Communications	• A10 Project Organization Chart & Communications: In the organization chart, present the names of organization(s)/all individual(s) identified in A8 and include lines of reporting & communication; demonstrate the Project QAO's independence from EIO & authority to communicate up the supervisory chain; and describe the communication procedures & reporting relationships between the Senior Manager, Project Operations Manager (PM), & Project QAO. • Project QAO has independent line of communication to PM and Senior Manager.
Problem Definition / Background	A5 Problem Definition / Background	A4 Project Purpose, Problem Definition, & Background	• Move element A5 (in R-5) to A4 (in S-2); include discussion of project purpose; & include/describe conceptual site model(s) (CSM). • S-2 element A4 includes identifying the sources of existing information (non-direct measurements/existing data), which was exclusively within standalone element B9 (in R-5).
Project / Task Description	A6 Project / Task Description	A5 Project Task Description	• Move element A6 (in R-5) to A5 (in S-2).
Data Quality Objectives (DQOs) / Quality Assurance (QA)	A7 Quality Objectives & Criteria	A6 Information / Data Quality Objectives & Performance / Acceptance Criteria	• Move element A7 (in R-5) to A6 (in S-2). • Describe Data Quality Objectives (DQOs) including the performance & acceptance criteria of EIO generated.
Training / Certifications	A8 Special Training / Certifications	A11 Personnel Training / Certification	• Move element A8 (in R-5) to A11 (in S-2).
Documentation / Records	A9 Documentation & Records	A12 Documents & Records	• Move element A9 (in R-5) to A12 (in S-2).
Information storage / storage & retrieval (*i.e.,* back-up) of electronic media	Appears in A9	Part of B7	• Move discussion of information storage/storage & retrieval (back-up plans) of electronic media from within A9 (in R-5) to part of B7 (in S-2). • S-2 includes and embeds information storage/storage & retrieval (back-up plans) of electronic media within element B7.

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard
Region 8 QA Branch Effective Date: 20250505

Page 2 of 6

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard

QAPP Element	QA/R-5 QAPP Requirements Element #	QA/S-2 QAPP Standard Element #	Description of Changes to Convert from R-5 to S-2 (This Tips Sheet provides a summary of changes only. Refer to the QAPP Standard for the full requirements.)[1]
Group B	Data Generation and Acquisition	Implementing Environmental Information Operations (EIO)	• Note: Group B Title includes EIO instead of data generation/data operations.
Total Group B Elements	B1 – B10 (10 total)	B1 – B7 (7 total)	• The number of Group B elements decreased from 10 to 7. Follow the Region 8 QAPP Review Crosswalk to ensure all Group B information is provided in your QAPP.
B1 title updated	B1 Sampling Process Design (Experimental Design)	B1 Identification of Project EIO	• S-2 updates definition of EIO[1] & includes experimental design information.
B2	B2 Sampling Methods	B2 Methods for Environmental Information (EI) Acquisition	• S-2 element B2 combines B2 & B4 from R-5 into 1 element & renames it B2 - Methods for EI Acquisition - includes field sampling methods & laboratory or analytical methods. • Move description of existing data sources from element B9 (in R-5) to B2 (in S-2). • Move description of environmental information (EI) to be obtained from databases, websites, existing literature/studies etc., the collection process, intended use, and acceptance & evaluation criteria to element B2. • Identifies personnel responsible for updating standard operating procedures (SOPs), if applicable. • If existing EI is combined with new EIO, include description to ensure EI/data compatibility.
B3	B3 Sample Handling & Custody	B3 Integrity of Environmental Information (EI)	• Change title of element B3 - Sample Handling & Custody (in R-5) to B3 - Integrity of Environmental Information (EI) in (S-2). • Describe process to ensure lab accreditation & certification for project analyses. • Must include chain-of-custody procedure, forms, and sample labels, if applicable.
B4	B4 Analytical Methods	B2 Methods for Environmental Information (EI) Acquisition	• S-2 element B2 combines B2 & B4 from R-5 into 1 element & renames it B2 - Methods for EI Acquisition - includes field sampling methods & laboratory or analytical methods. • Include Environmental Technology[2] in element B2 - identify purpose of technology (*e.g.,* pollution prevention, contamination containment, storage, remediation); describe physical parameters or processes collected; & describe systems, devices, and components applicable to hardware & methods or techniques that measure/remove/prevent pollutants or contaminants from entering the environment.[2]

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard
Region 8 QA Branch Effective Date: 20250505

Page 3 of 6

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B5	B5 Quality Control	B4 Quality Control	• Move element B5 (in R-5) to B4 (in S-2). • Describe quality control (QC) activities for EIO using models or modeling (*e.g.,* model calibration, model validation, sensitivity analyses). • If field activities are required (non-EPA excluded), QAPP must identify Quality Assurance Field Activities Procedure (QAFAP) elements.
B6	B6 Instrument / Equipment Testing, Inspection, & Maintenance	B5 Instrument / Equipment Calibration, Testing, Inspection, & Maintenance	• Combine elements B6 & B7 (in R-5) into single element B5 (in S-2). • S-2 consolidates instrument/equipment testing, inspection, & maintenance with instrument/equipment calibration & frequency into 1 single element, B5.
B7	B7 Instrument / Equipment Calibration & Frequency		
B8	B8 Inspection / Acceptance for Supplies & Consumables	B6 Inspection / Acceptance of Supplies & Services	• Move element B8 (in R-5) to B6 (in S-2). • S-2 retitle of element B6 replaces consumables with services - more description of inspection/acceptance of services in addition to supplies (*i.e.,* other consumables). • Acceptance of supplies & consumables will be on items or traceable to items.
B9 Use of existing data / existing information (non-direct measurements)	B9 Use of Existing Data (non-direct measurements)	Part of A4 & Part of B2	• Move standalone element B9 use of existing data/information (non-direct measurements) discussion (in R-5) to within B2 (in S-2) & replace data with environmental information (EI). • Move sources of existing data/information discussion in element B9 (in R-5) to within element A4 (in S-2). • Move description of EI to be obtained from databases, websites, existing literature/studies etc., the collection process, intended use, and acceptance & evaluation criteria to element B2 (in S-2).
B10 Data Management	B10 Data Management	B7 Environmental Information (EI) Management	• Move element B10 (in R-5) to B7 (in S-2) & rename it Environmental Information (EI) Management.

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Group C	**Assessment and Oversight**	**Assessment, Response Actions, and Oversight**	• Note: Group C Title includes response actions with assessment and oversight.
Total Group C Elements	**C1 – C2 (2 total)**	**C1 – C2 (2 total)**	• The number of Group C elements remains the same. Follow the Region 8 QAPP Review Crosswalk to ensure all Group C information is provided in your QAPP.
Group C Element Titles	C1 Assessments & Response Actions	C1 Assessment & Response Actions	• Move the description of oversight activities from element C1 (in R-5) to C2 (in S-2), but the C1 Assessment & Response Actions element title remains the same. • Corrective action & QAPP non-conformance procedures must be described including the timeframe for responding to corrective actions & how corrective actions will be developed & tracked. • Assessment activities are required & assessors shall be free from conflicts of interest.
	C2 Reports to Management	C2 Oversight & Reports to Management	• Move the description of oversight activities from element C1 (in R-5) to C2 (in S-2) & rename C2 - Oversight & Reports to Management. • Preserve all descriptions/information related to reports to management within element C2. • Identify individual responsible for oversight activities within QAPP. • Add description of report requirements (*i.e.,* report content, format, timing, distribution) & the process for report transmission/submission. • Describe how management reports will be transmitted/submitted, and distribution shall include Project Operations Manager (*i.e.,* Project Manager (PM)), Project QA Officer (QAO), & sponsoring EPA organization.

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard
Region 8 QA Branch Effective Date: 20250505

Page 5 of 6

QAPP Element	QA/R-5 QAPP Requirements Element #	QA/S-2 QAPP Standard Element #	Description of Changes to Convert from R-5 to S-2 (This Tips Sheet provides a summary of changes only. Refer to the QAPP Standard for the full requirements.)[1]
Group D	Data Validation and Usability	Elements for Environmental Information (EI) Review and Usability Determination	• Note: Group D Title includes Elements for EI Review and Usability Determination instead of Data Validation and Usability.
Total Group D Elements	D1 – D3 (3 total)	D1 – D2 (2 total)	• The number of Group D elements decreased from 3 to 2. Follow the Region 8 QAPP Review Crosswalk to ensure all Group D information is provided in your QAPP.
Group D Element Titles	D1 Data Review, Verification, & Validation	D1 Environmental Information (EI) Review (Data and Methods EI Review, Verification, & Validation)	• Combine elements D1 & D2 (in R-5) to D1 (in S-2) & rename it Environmental Information (EI) Review. • S-2 combines EI data & method review, verification, & validation processes/procedures into 1 element - D1.
	D2 Verification & Validation Methods		
	D3 Reconciliation with User Requirements / Usability	D2 Usability Determination (Reconciliation with DQOs)	• Move element D3 (in R-5) to D2 (in S-2), rename it D2 Usability Determination, & include reconciliation with DQOs/User Requirements processes & usability determination discussions/descriptions.

[1] For more information, please reference the EPA Quality Directives (https://www.epa.gov/quality/quality-program-directives) and the QA/S-2 QAPP Standard - EPA IT/IM Directive No. CIO 2105-S-2 (https://www.epa.gov/system/files/documents/2024-04/quality_assurance_project_plan_standard.pdf).

[2] For additional guidance on QAPPs for design, construction, and operation or application of environmental technology, refer to the current version of EPA Guidance on Quality Assurance for Environmental Technology Design, Construction and Operation (https://www.epa.gov/sites/default/files/2015-06/documents/g11-final-05.pdf).

Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to QA/S-2, QAPP Standard
Region 8 QA Branch Effective Date: 20250505

Page 6 of 6