VIRTUAL ASSET PRIORITIZATION RESOURCE

WHITE PAPER

Keeping QA/QC Evidence Connected to the Asset



EVIDENCE + DOCUMENTED REVIEW

Keep the evidence chain intact

A practical guide to reviewing inspection evidence, recording corrections, and keeping the published finding traceable to the asset and its original records.



Illustrative identifiers. Originals remain traceable through review into the report; corrections do not overwrite the source.

Three ideas to take into your next review

01 Preserve the original evidence and its asset context.

02 Record what was checked, what changed, and what remains uncertain.

03 Carry material limitations into the report, not just the review notes.

For: Inspection reviewers, quality coordinators, engineering teams, and asset information owners.

October 2026 · Editorial draft for review. Cover image: AI-generated illustration, not documentary evidence.

01 / DEFINE THE REVIEW

Quality needs a traceable record

A report can look complete while leaving a reviewer unable to locate the evidence behind a finding. The missing connection may be an asset identifier, an observation location, a file revision, or an explanation of a correction. This paper proposes a review packet that keeps those relationships visible.

Washington State's bridge inspection manual distinguishes quality control (QC) checks of the work from quality assurance (QA) review of whether the quality process is adequate and applied consistently. Its program provides a useful example of different review purposes. The roles and procedures are specific to Washington's bridge program, not universal requirements. [3]

Review purpose	Proposed question	Evidence of the review
Check the work	Does the record meet the agreed scope and criteria?	Record checked, reviewer, criterion, finding, and disposition.
Assess the process	Are checks suitable and applied consistently?	Review scope, observed process gaps, and assigned improvement.
Support the decision	What can the evidence reasonably support?	Interpretation with its assumptions and limitations.

EPA's environmental-data guidance distinguishes verification against specified requirements from validation of analytical data quality against project-specific measurement quality objectives. These concepts help frame a review, but they are not exact substitutes for QC and QA respectively. A file can pass a completeness check yet remain unsuitable for a particular inference. [1]

Agree the purpose before reviewing

State which asset, inspection, and report revision are in scope. Identify the reviewer's authority and the criteria they will use. A coordination check can identify an unexplained measurement; it does not replace the qualified professional's interpretation of its significance.

The tables and workflow in this paper are original editorial templates. They do not certify an inspection or describe a verified automated review feature.

02 / ASSEMBLE THE PACKET

Preserve the original and its context

EPA's ambient-air guidance emphasizes retaining original entries when records are revised and identifying who made entries and when. It also explains why original supporting data matter to later review. These record-integrity principles are relevant here; air-monitoring custody rules and retention periods are not generalized. [2]

01 Asset + visit — 02 Original evidence — 03 Review record — 04 Report reference

Packet element	What to retain	Why it helps
Asset and observation	Asset ID, visit ID, component or location, observation date.	Prevents evidence from drifting to a similar asset or another visit.
Original material	Original image, note, measurement or source file with capture context.	Lets the reviewer distinguish observation from later editing.
Working derivative	Annotated image, transcription or summary, linked to its source.	Makes useful presentation changes visible without replacing the original.
Review record	Reviewer, date, criteria, issue, response and disposition.	Explains what was checked and the status of any correction.

A link is necessary, but not sufficient

Check that the linked file actually opens and shows the expected location, date, and subject. A valid filename can still point to the wrong photograph. When a crop or annotation is used in a report, keep its relationship to the original explicit and avoid removing context that changes the apparent meaning.

> **Practical boundary:** if the original is missing, record that limitation. Do not reconstruct a note and present it as the original field record.

03 / CLOSE THE REVIEW LOOP

Record a finding and its disposition

FHWA's pavement quality guide describes quality records that retain the activity, date, people involved, results, and follow-up. Its reporting examples include problems, corrective actions, and final disposition. The transferable lesson is a review trail a later reader can reconstruct, not a guarantee that all errors have been removed. [4]

Field	Proposed review note
Record and criterion	Identify the exact observation/file/report revision and what is being checked.
Finding	Describe the discrepancy and why it matters to interpretation.
Requested action	State the clarification or correction needed and the responsible role.
Response	Link the supporting original or explanation; identify any changed material.
Disposition	Record corrected, accepted with a stated limitation, or unresolved under the owner's process.
Closure	Name the reviewer, date, affected report revision, and any further action.

Use status words consistently within the team. "Reviewed" should not imply that every question is resolved. If a finding is accepted with a limitation, make that limitation available to the person using the report. If it remains unresolved, explain which use of the evidence must wait or be qualified.

Review what the correction affects

A corrected file reference may be local to one caption. A corrected measurement unit may affect a table, comparison, and conclusion. The reviewer should identify those dependent statements and verify that the report uses the revised interpretation consistently. Preserve enough context to explain why the earlier version changed.

This is a proposed record structure. Specific approval authority, independence, acceptance criteria, and escalation remain defined by the owner's applicable quality procedures.

04 / ILLUSTRATIVE EXAMPLE

A unit error without a hidden rewrite

Illustrative example. A hypothetical inspection packet contains a field note with a measurement and its unit. The draft report transcribes the same value with a different unit. No real asset, numerical measurement, engineering threshold, or safety conclusion is assumed.

Step	Proposed action	Record preserved
Identify	Link the draft table entry to the original field note and asset observation.	Specific review finding; original note remains unchanged.
Clarify	Ask the responsible qualified role to confirm the intended measurement and interpretation.	Dated response with supporting evidence or an explicit uncertainty.
Correct	Revise the transcription if supported; do not silently alter the original.	What changed, reason, responsible role, and revised report reference.
Recheck	Review captions, comparisons, and conclusions affected by the unit.	Disposition and confirmation of the dependent revisions.
Communicate	Provide the corrected report through the owner's distribution process.	Current revision and a clear relationship to the superseded draft.

If the intended unit cannot be established, changing the label is not a valid correction. The review should retain the uncertainty and identify what additional evidence is required. A decision-maker should not encounter a clean-looking table that conceals the unresolved question.

> **What good closure looks like:** another reviewer can reconstruct the issue, the evidence used to resolve it, and the effect on the report. Closure is a documented disposition, not deletion of the question.

Original hypothetical example. No arithmetic, compliance determination, product automation, or real inspection result is implied.

05 / REVIEW CHECKLIST

Check the evidence before release

- ☐ **Context:** findings identify the asset, visit, and relevant component or location.
- ☐ **Originals:** source evidence is accessible to authorized reviewers and distinguishable from derivatives.
- ☐ **Scope:** the record identifies the checks performed, criteria used, reviewer, and date.
- ☐ **Corrections:** changes have a reason and supporting evidence; affected conclusions were revisited.
- ☐ **Limitations:** unresolved or accepted limitations appear where the report's user can understand them.
- ☐ **Release:** the current revision and its review disposition are clear; superseded material is handled under the owner's policy.

Use recurring issues to improve the process

After individual findings are handled, look for repeated gaps: ambiguous locations, unreadable attachments, missing units, or review notes that never reach the final report. Choose a specific improvement, assign an owner, and check later whether the handoff became clearer. This proposed feedback step is separate from accepting a particular report.

Limits of this guide

Evidence traceability does not prove that an engineering conclusion is correct, that an inspection is sufficient, or that an asset is safe. The required expertise and review independence depend on the work. Environmental-data and transportation examples are used for record-handling context, not as interchangeable technical requirements.

Follow applicable owner policies for access, retention, review authority, and distribution. This paper does not set legal custody requirements or promise an immutable audit trail. It makes no claim that VAPR automatically validates measurements, controls revisions, or provides regulated approvals.

> **Next review:** choose one report finding and trace it back to the original evidence, then forward through its review notes. Improve the first missing connection you find.

REFERENCES

Sources and editorial notes

[1] U.S. EPA, Office of Environmental Information. Guidance on Environmental Data Verification and Data Validation. EPA/240/R-02/004, EPA QA/G-8. November 2002. Sections 2.1, 2.4, 3.1 and 3.4; printed pp. 7, 13–15 and 22–23.
Open source document · Accessed October 15, 2026.

[2] U.S. EPA, Office of Air Quality Planning and Standards. Best Practices for Review and Validation of Ambient Air Monitoring Data. EPA-454/B-21-007, revision 0. August 2021. Documentation and custody, sections 1.2.1.3.1–1.2.1.3.2; pp. 15–16.
Open source document · Accessed October 15, 2026.

[3] Washington State Department of Transportation. Washington State Bridge Inspection Manual. M 36-64.16, Chapter 7: Quality Control/Quality Assurance. January 2026. Sections 7-2.1–7-2.2, 7-3.2, 7-7.1 and 7-8.1–7-8.5; pp. 7-3–7-4 and 7-10–7-12.
Open source document · Accessed October 15, 2026.

[4] Linda M. Pierce, Ginger McGovern and Kathryn A. Zimmerman; FHWA. Practical Guide for Quality Management of Pavement Condition Data Collection. February 2013. Chapter 9: Quality Management Reporting; pp. 71–73.
Open source document · Accessed October 15, 2026.

How the sources are used

Source-specific concepts are summarized with their sector boundaries. The packet, review-note template, checklist, and unit-error example are original editorial synthesis. No source figures, numeric acceptance thresholds, or software features are reproduced.

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