Saving Funds by Forming PQAOs
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Programs that collect data for comparison to the National Ambient Air Quality Standards (NAAQS) must participate in the NPAP and PEP programs or their equivalent at a rate of:

1. NPAP audits (pollutants other than PM2.5) at 20% of a program's sites each year with a goal of all sites audited in a 5-7 year period. (See table below for audit frequencies; in general, an annual NPAP audit of at least one site is required for each primary quality assurance organization required to follow the 40 CFR Part 58 Appendix A.)
2. Five PEP audits (PM2.5 manual methods) each year for programs with less than or equal to 5 monitoring sites or eight audits are required for programs with greater than five sites. (One PEP audit per quarter.)

Consolidation of Tribes to Smaller Number of Primary Quality Assurance Organizations

The above requirements apply to Primary Quality Assurance Reporting Organizations (formerly termed "reporting organizations.") Tribal programs may consolidate into PQAOs thereby saving funds by sharing audits and other functions. (Local programs such as air districts and counties are consolidating for similar reasons.)

The definition of PQAO as from 40 CFR Part 58 Appendix A is provided below. Added text not from the CFR is in italics.

> 3.1.1 Each primary quality assurance organization shall be defined such that measurement uncertainty among all stations in the organization can be expected to be reasonably homogeneous, as a result of common factors. Common factors that should be considered by monitoring organizations in defining PQAOs include:
>
> (a) Operation by a common team of field operators according to a common set of procedures (*usage of template or example SOPs shared between Tribes and/or by TAMS has already achieved this in many cases*);
>
> (b) Use of a common QAPP or standard operating procedures (*use of turbo-QAPP by Tribes helps ensure consistent QAPPs*);
>
> (c) Common calibration facilities and standards (*this could be arranged and in many cases is already being done*);
>
> (d) Oversight by a common quality assurance organization (*the auditor would report to all programs*); and
>
> (e) Support by a common management, laboratory or headquarters (*the same audit equipment would be used at all sites in the PQAOs*).

Tribes consolidating to form PQAOs may choose to use the current EPA contractors to perform the audits or conduct their own. If a PQAO conducts their own audits, they must generally meet the independency and adequacy requirements reviewed on the next page. However more details exist on these criteria that need to be reviewed more thoroughly for those organizations considering "self-implementation".

NOTE: PQAO consolidation is for QA purposes only and does not have any other political or technical implications. The Tribal agency codes and the reporting organization codes in AQS will remain unique to each Tribe so the Tribe will remain as sovereign entities no matter which consolidation technique is used.

Costs: A PEP audit conducted by the current EPA contractor will cost about $2,000 per site and an NPAP audit will cost $2,200 per site. These costs are all inclusive, meaning they include all costs associated with implementation, travel, training, capital equipment, consumables, maintenance, repair and data reporting.

Example: The following table illustrates costs and numbers of audits required for 4 Tribal monitoring organizations (Tribes A-D) operating both gaseous monitoring sites and $PM_{2.5}$ monitoring sites. The number of audits and costs decrease by 50% if the Tribes consolidate to one PQAO; as does the collocation requirement. Where it would cost a total of $46,000 to perform 23 audits at the 4 separate Tribal PQAOs, it would cost $16,000 for 8 audits under the scenario of the 4 Tribes consolidating to one PQAO (PQAO A-D).

Tribe PQAO	Number of Gaseous Sites	NPAP Audits Required	NPAP Cost ($)	Number of PM2.5 Sites	Number of Collocation Required	Number of PEP Required	PEP Cost ($)
A	2	1	$2,200.00	3	1	5	$10,000.00
B	3	1	$2,200.00	2	1	5	$10,000.00
C	1	1	$2,200.00	1	1	5	$10,000.00
D	5	1	$2,200.00	6	1	8	$16,000.00
Totals Separate	11	4	$8,800.00	12	4	23	$46,000.00
PQAO A-D	11	2	$4,400.00	12	2	8	$16,000.00
Savings		2	$4,400.00		2	15	$30,000.00

Audits' Independence and Adequacy Requirements:

Tribes conducting their own audits instead of using the EPA contractor must meet requirements for both independence and adequacy of the auditing entity.

> **Independent assessment** - an assessment performed by a qualified individual, group, or organization that is *not part of the organization* directly performing and accountable for the work being assessed. This auditing organization must not be involved with the generation of the routine ambient air monitoring data. An organization can conduct the PEP/NPAP if it can meet the above definition and has a management structure that, at a minimum, will allow for the separation of its routine sampling personnel from its auditing personnel by two levels of management.

For PEP audits, the laboratory preparing the routine $PM_{2.5}$ filters (pre and post-weighing) can not prepare the PEP filters. However, the current national PEP laboratory in EPA Region 4 is capable of functioning as the independent laboratory for the Tribe. The TAMS laboratory in Las Vegas can also provide this function as long as the Tribe does not send its routine filters to the TAMS laboratory.
PEP (PM2.5 manual methods) Adequacy --

- Primary quality assurance organizations with 5 or less $PM_{2.5}$ monitoring sites would be required to have 5 valid audits per year distributed across the 4 quarters; primary quality assurance organizations with greater than 5 sites would be required to have 8 valid audits per year distributed across the 4 quarters.
- 100 percent completeness (meaning whatever it takes to get 5 or 8 valid samples).
- All samplers subject to an audit within 6 years.
- Data submission to AQS.
- Trained/certified by EPA to perform audit.
- Conforming to the important aspects of the federally implemented PEP Field and Laboratory SOPs and quality assurance project plan requirements.
- Incorporation of PEP in the monitoring organization's quality assurance project plan.

NPAP Adequacy --

- Performing audits at 20 percent of monitoring sites within a primary quality assurance organization each year with a goal of all sites audited in a 5-7 year period.
- Data submission to AQS.

- Development of a delivery system that will allow for the audit concentration gas to be introduced to the probe inlet where logistically feasible.
- Use of audit gas (CO, SO_2 and NO_2) that is NIST certified and validated once a year and an ozone generator that is verified quarterly.
- For national comparability, validation/certification with the EPA NPAP program through collocated auditing, at an acceptable number of sites each year. The comparison tests would have to be no greater than 5 percent different from the EPA NPAP results.
- Incorporation of NPAP in the monitoring organization's quality assurance project plan.

As mentioned earlier, there are some additional details incorporated in the PEP and NPAP SOPs that would need to be considered for organizations considering self implementation prior to making a final decision. The expanded adequacy and independence criteria can be found on both the NPAP Website at: http://www.epa.gov/ttn/amtic/npaplist.html and the PEP website at: http://www.epa.gov/ttn/amtic/pmpep.html. Tribal Monitoring Organizations should talk to EPA Regional Monitoring Leads in order to make informed decisions about self implementation.