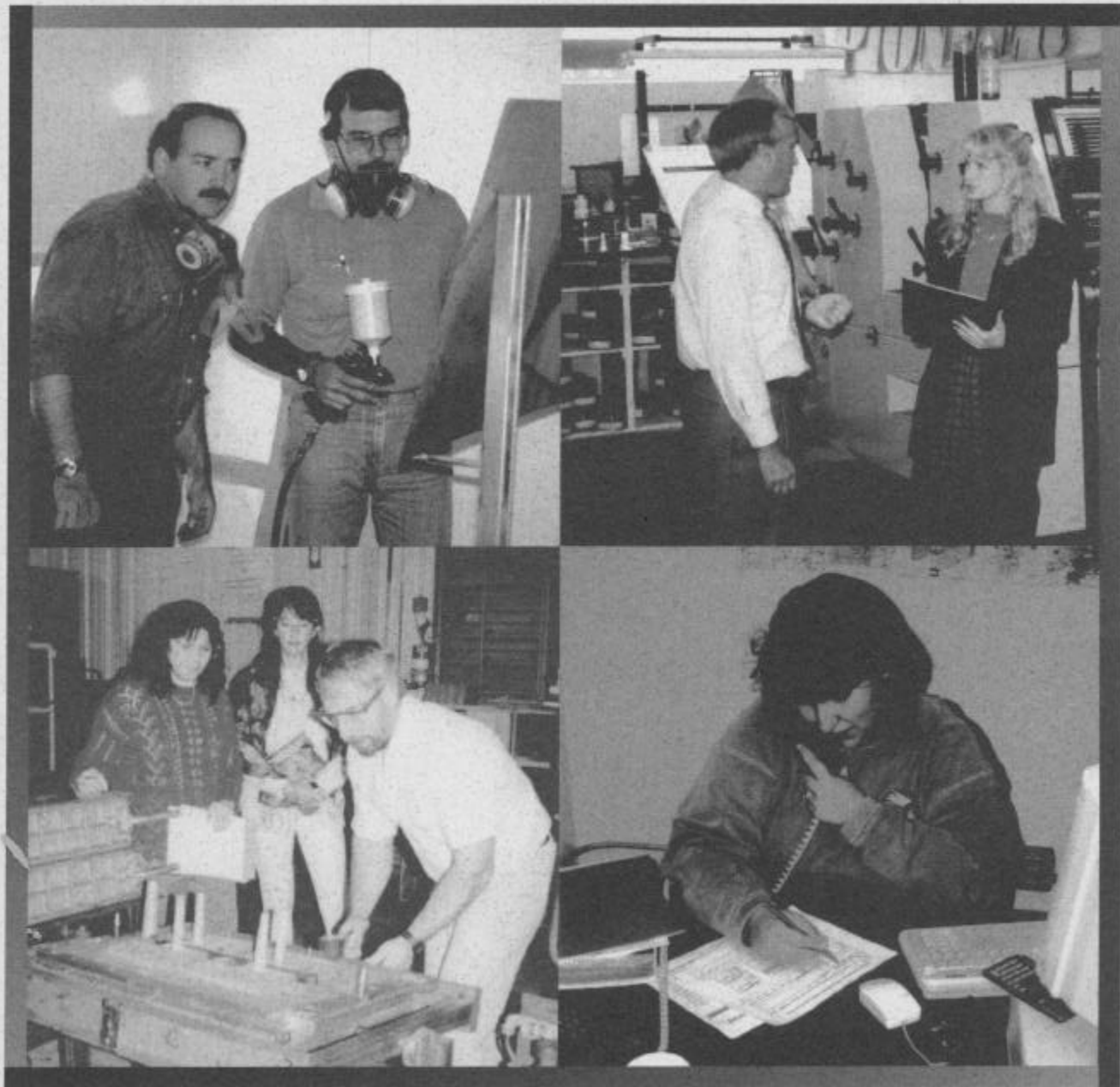


The Small Business Environmental Assistance Site Visit Manual



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THE SMALL BUSINESS ENVIRONMENTAL ASSISTANCE SITE VISIT MANUAL

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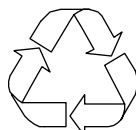
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A Introduction

1. Applicability

This Small Business Assistance Program (SBAP) Site Visit Manual focuses on establishing and operating a technical assistance site visit and audit program. It discusses practical administrative and client interaction, and recordkeeping options. The “how to” of conducting the site visit, including an audit, is an area that is emphasized.

Throughout this manual the terms technical assistance, site visit and audit refer to environmental activities. The manual does not discuss any other type of technical assistance, site visit or audit.

This manual is not for use by small businesses. It is assumed that the SBAP will provide the site visit to the small business. If the SBAP trains business clients to conduct their own audits after observing an SBAP site visit, the manual can be a useful tool.

The term Small Business Assistance Program (SBAP) applies to programs formed under Section 507 of the 1990 Clean Air Act Amendments. EPA guidelines [1] require that the following elements be addressed in a Section 507 programs:

- Development, collection and coordination of information on compliance methods and technologies for small business stationary sources.
- Assistance to small business stationary sources on methods of pollution prevention and accidental release prevention and detection, including providing information concerning alternative technologies, process changes, procedures and methods of operation that help reduce air pollution.
- Establishment of small business stationary source compliance assistance program for determining applicable requirements and permit issuance. Adequate mechanism for notifying small business stationary sources on a timely basis of their rights under the act.
- Adequate mechanism for notifying small business stationary sources of their obligations under the CAA, including a program for referring qualified auditors or for the state to provide for audits of the operations of such sources to determine and audit options.

The purpose of this manual is to help SBAP professionals conduct effective site visits and audits for small business. However, the information in the manual can be adapted to any type of environmental technical assistance program. The goals of the manual are to:

- establish a framework that SBAPs can use to create and operate a site visit and audit program within an existing technical assistance program, and
- provide practical procedures to conduct small business technical assistance with an emphasis on site visits and audits.

This manual addresses the site visit process and related follow-up activities for pollution prevention and compliance assistance. Specific information on the pollution prevention process is not included. Information on specific compliance or technical requirements for SBAP clients is not included.

This manual is not intended to provide benchmarks for evaluating section 507 programs or any other type of environmental technical assistance programs. However, useful benchmark information may be found in the section titled Quality Assurance/Evaluating Effectiveness of Assistance Programs in Program Expansion.

2. Small Business Assistance

The assistance process for small business is unique in many ways. The technical assistance professional must be ready to work with a variety of people in many different settings. Resources of the small business are needed to conduct day-to-day business, and the professional must help figure out how to divert or apply these to environmental issues.

The tools used by the professional vary, and depend on the training and resources of the technical assistance program. A very effective tool is the small business site visit and audit. This manual focuses on the small business environmental assistance process with emphasis on the site visit and audit.

In addition to Small Business Assistance Programs mandated by the Clean Air Act Amendments of 1990 there are an increasing number of small business environmental technical assistance programs (ETAPs). These include:

- ✎ State and local pollution prevention programs funded by the Environmental Protection Agency's (EPA) Pollution Prevention Incentives for States grants,
- ✎ State programs housed in regulatory agencies, local groups, or universities and funded with state and local resources,
- ✎ Selected Manufacturing Technology Centers, funded by the National Institute of Standards and Technology, that have begun to provide environmental assistance, and
- ✎ Small Business Development Centers, a Small Business Administration program that is providing environmental assistance through pilot programs.



- Many of these ETAPs include a site visit and audit component. The information in this manual can be adapted for all ETAPs that conduct site visits and environmental audits.

3. Using the SBAP Manual

- Section B, Small Business Environmental Technical Assistance, describes the general concept of small business technical assistance, site visits and audits.
- Section C, Site Visit Program Development, reviews the development of a small business site visit program within the larger framework of a technical assistance program. It also discusses follow-up technical assistance based on the site visit.
- Section D, Site Visit Technical Assistance Tools, reviews various technical assistance tools such as fact sheets, plain language guides, computer programs and spreadsheets, and facility specific self audit checklists.
- Section E, The Site Visit Process, covers the specific steps for conducting a small business site visit.
- Section F, Special Considerations, discusses small business site visit topics such as working with difficult clients, self audits, auditing standards, and confidentiality.
- Section G, Program Expansion, discusses inclusion of multimedia, pollution prevention, and quality assurance tools.
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B Small Business Environmental Technical Assistance

1. What is Technical Assistance, a Site Visit and an Audit

The terms technical assistance, site visit and audit have no universally accepted meaning. The activities they describe depend on how someone chooses to apply them. For the purposes of this manual the diagram in Figure 1 clarifies the relationship between terms used in this manual.

Technical assistance process -

- The entire process of technical assistance to a small business.

Site visit -

- The portion of the technical assistance process conducted at the small business facility. The site visit includes an audit and on-site technical assistance. When working with small businesses the audit and the on-site technical assistance are typically conducted together as one function.

Audit -

- The activity that occurs during the site visit where expectations of what the client should be doing are verified by the technical assistance auditor's objective review of conditions at the facility. An audit does not provide recommendations or opinions on changes that should be made. An assessment does. For example, an audit may determine that the waste storage is inadequate. An assessment may recommend that a berm to contain spills be installed.

On-site technical assistance -

- The process that occurs during the site visit when the technical assistance person provides the client with information on compliance options and requirements, and pollution prevention options. As discussed above, the audit establishes and verifies existing conditions at the facility. Knowledge of these existing conditions is necessary to provide technical assistance.

Follow-up technical assistance -

- Technical assistance provided after the site visit, including reports to the client, second visits, or in-office assistance.



This manual makes a distinction between on-site technical assistance and audits because they serve separate functions. It is important to recognize that they normally occur concurrently during a small business site visit.

As discussed, an audit is a process where the expectations of what the client should be doing are verified by an auditor's objective review of the facility. By most definitions the audit should not provide the client with suggestions or recommendations on pollution prevention or compliance options and requirements. It should verify expectations of what the client should be doing, and it should provide the technical assistance person with enough information on existing conditions to guide further technical assistance.

In contrast, technical assistance is designed to inform the client of pollution prevention and compliance options and requirements. In practice, both auditing and on-site technical assistance occur simultaneously and are indistinguishable to the client. They should not be conducted as separate functions during the site visit.

The definition of auditing used in this manual is different than EPA's definition. The EPA's 1986 environmental auditing policy statement defines an environmental audit as a periodic, systematic and objective evaluation of a business's success in meeting environmental objectives, requirements, standards or criteria established by the involved parties [2]. EPA's 1986 auditing policy statement and other publications define audits strictly as a compliance activity [2,3] that will verify compliance with environmental requirements; evaluate the effectiveness of environmental management systems already in place; and assess risks from regulated and unregulated materials and practices.

The EPA pollution prevention opportunity assessment aims for the reduction or elimination of waste generation regardless of regulatory constraints [3].

Many SBAPs provide multimedia pollution prevention and pollution control assistance, in addition to compliance assistance. For simplicity, this manual defines audits to include compliance and pollution prevention.

2. Why Audits are Important to Small Businesses

Many environmental requirements directly impact small businesses. As a result they are accountable for proper environmental management and liable for mismanagement. This requires the small business operator to become familiar with regulatory, permitting, pollution control, and pollution prevention responsibilities. This can be an overwhelming task.

Large businesses are used to meeting these increased responsibilities. They often maintain in-house environmental staff and budget for environmental consulting services.

Small businesses face difficult obstacles in addressing the existing and new requirements, and the mechanisms for managing them. Factors that affect small business include:

- ↳ limited awareness of existing requirements,
- ↳ lack of technical expertise to interpret environmental regulations that may apply to them,
- ↳ time constraints to conduct their own research, and
- ↳ lack of financial resources to maintain in-house staff or to use professional services.

A small business audit verifies the client’s expectations for meeting environmental requirements through a systematic and objective facility review. This creates the framework for additional steps that must be taken to help the company meet environmental goals. The auditing process in conjunction with on-site and follow-up technical assistance serves several purposes. It can:

- ✗ help the business understand applicable environmental requirements,
- ✗ help the business set environmental goals consistent with their operation,
- ✗ encourage the business to set up a program for environmental management,
- ✗ assist businesses in developing facility process flow diagrams if necessary,
- ✗ identify compliance deficiencies so they can be corrected, and
- ✗ select pollution prevention opportunities to reduce compliance requirements and increase productivity.

The final determination of the site visit and audit goals will depend on entirely on agreement of client and technical assistance personnel.

The elements listed above do not need to be complex. For example, a client’s environmental goals may be only to achieve compliance. An environmental management program could be limited to a simple materials accounting system for purchases and disposal.

C Site Visit Program Development

1. Establishing the Site Visit Component

a. The Site Visit

Small business site visit programs must have a foundation for development. Without such a foundation it is not possible to conduct either long or short term planning or set goals. The foundation should be simple but still address all aspects of the program that affect its success. Section C discusses elements that provide a necessary program foundation. These elements include:

Section C.1.b - Site visit program scope and mission

Section C.1.c - Personnel and training resources

Section C.1.d - Training program, and

Section C.1.e - System to integrate site visit with follow-up technical assistance

Technical assistance has no concise definition as it applies to small business SBAPs. There are as many definitions as there are programs. It generally includes some aspects of compliance, pollution prevention, or pollution control activities.

Examples of activities that fall under the umbrella of technical assistance programs are:

- ✍ explaining regulations that apply to a facility in plain English and helping with compliance,

- ☞ assisting with permit applications,
- ☞ conducting waste or emission inventories,
- ☞ helping select and utilize appropriate control technology options, and
- ☞ recommending and assisting with implementation of feasible pollution prevention options.

During the site visit two activities should take place. These include:

- ☞ establish an objective analysis of existing conditions, and
- ☞ provide the client with immediate on-site technical assistance on appropriate issues, when necessary.

The audit process typically concludes after the on-site visit is over and the client gets a report. The technical assistance process will continue with follow-up assistance in areas that the audit report identified as deficient or that the client specifically requests. For example, the audit may provide information on the compliance status of the client, where technical assistance will provide the necessary tools (e.g., permit assistance) to achieve compliance.

A site visit should be conducted for all detailed work with a specific client. An audit will provide correct and accurate information of facility conditions. This should be used as the foundation for technical assistance. Even if the client provides a facility description, a visit is necessary to confirm the information. Many small business owners are simply not aware of significant details. For example, many clients may not know how to describe factors that determine potential to emit or to identify existing waste streams.

Incorporating the small business audit with other services offered by the SBAP will:

- ✗ improve overall effectiveness of the assistance program,
- ✗ provide better understanding of the challenges facing the small business community, and
- ✗ improve cooperative efforts with various businesses and business organizations.

This interaction will also help SBAP staff gain expertise and experience on specific industrial processes. This is essential to identify potential pollution prevention opportunities in a small business environment.

b. Site Visit Program Scope and Mission

A small business site visit program must have a clearly defined scope. The scope will:

- ☞ clarify the goals for the site visit and audit and define specific responsibilities,
- ☞ allow staff to clearly explain to potential clients what the site visit and audit will and will not address, and
- ☞ help new staff understand the various types of audits and program capabilities.

The program scope could take the form of a statement that defines and clarifies the boundaries of services the program provides. Factors that can limit a program's services include the program's mission, personnel resources, and training resources. Personnel resources refers to the number and expertise of personnel

available to conduct site visits. Training resources refers to development of expertise within site visit staff. Examples of boundaries that define the scope of the small business site visit program are:

Business size, type or location

Business characteristics can determine the type of clientele the program will serve. For example, the number of employees or the location of a facility may define who participates.

It is important to define the average facility size, the number of potential clients, and complexity of their processes. Staff resources should match needs of the client base. A large client base and a limited staff size with limited expertise might require a focus on small facilities and simple processes. The program’s mission normally defines these boundaries.

It may be helpful to prioritize the client base according to facility size, process complexity, type of business, etc. Small businesses with less than 100 employees might be the highest priority client, and consultants seeking assistance for their own clients might be the lowest priority.

Media type

Media type can include wastewater, air, solid waste, hazardous waste, or a selective combination of any, or all of these options. Media type usually, but not always, follows regulatory requirements. For example, the Clean Water Act, the Clean Air Act and the Resource Conservation and Recovery Act respectively address water, air and solid waste.

Not all regulatory requirements can be addressed in terms of media type. An example is the requirements of Toxic Release Inventory reporting.

Process type

This factor can include or exclude any industry types or processes. For example, a program scope may be defined to exclude chemical processors because the program does not have adequate expertise in that field. Another example is including vehicle maintenance in the program scope since the conditions are fairly similar for each facility and are readily understood.

Audit type

Types of audits include compliance audits, pollution prevention audits, environmental management system audits, or a selective combination of any, or all of these options.

It may be necessary to refine certain program boundaries. For example, a program scope including pollution prevention audits may be refined by focusing on the processes in which the program has pollution prevention expertise. A program lacking pollution prevention expertise in polymer production may exclude this process from its audit program scope. Likewise, a program may choose to exclude Toxic Substance Control Act requirements from its compliance audit program scope if adequate expertise is not available.

A program including compliance audits should define the breadth of coverage for the regulatory area. For example, it should be clear if staff are responsible for recognizing potential “PSD” or “major source” compliance issues during a small business Clean Air Act audit.

The one stop shopping concept should be considered when planning a small business site visit program. One stop shopping refers to a comprehensive service that addresses all multimedia compliance and pollution prevention concerns. The concept appears to be efficient, effective and meet all the small business environmental needs in one stop. Certain factors affect the feasibility of one stop shopping and should be considered before adopting the one stop approach.

These factors include:

- ✧ “In practice the complexities and details of separate environmental laws usually require several auditors because there are few auditors with sufficient experience and knowledge in all of the environmental laws and media.” (EPA/600/A-93/280, Bridges). Although this applies more to large facilities, small businesses can also be complex.
- ✧ Due to limited resources it is rarely feasible for more than one SBAP staff to visit a site unless training is being conducted.
- ✧ A one stop service that addresses all environmental concerns must be able to adequately cover all areas. If not, the small business owners may be lulled into a false sense of security.

Small business assistance programs can use four approaches to move towards one stop shopping.

- ✧ Define program scope to limit the size and complexity of site visit clients. This allows staff to specialize in pollution prevention and compliance for a manageable number of industries and processes.
- ✧ Provide staff with a strong general knowledge of small business regulatory and pollution prevention issues so they can identify needs during the site visit. Post-visit consultation with expert staff may be needed to complete the report or follow-up assistance.
- ✧ Strengthen staff knowledge in selected pollution prevention and compliance areas. In other words, delegate certain regulatory and pollution prevention areas to individual staff to become experts. Staff who need more in-depth information can turn to these in-house experts.
- ✧ Train staff to recognize and accurately describe unfamiliar processes observed in a site visit. When the site visit is over, other staff can provide training on the process or the program can organize research to learn about the process and train the entire staff.

In cases where the small business audit program is a component of a larger technical assistance process the following should be kept in mind:

- ✧ both the mission statement and the audit program scope should be defined in terms of, and be consistent with, the goals of the entire technical assistance process, and
- ✧ the scope and mission statement for the entire technical assistance process should directly include the audit component.

EXAMPLE 1

Small Business Assistance Programs, although mandated by the Clean Air Act Amendments, typically have limited resources. It is essential that SBAPs have some way to define program scope, yet meet client needs. Program scope boundaries may be:

- X facilities or companies with less than 100 employees,**
- X pollution prevention for air emissions only, and**
- X compliance for Clean Air Act requirements only.**

The SBAP mission statement should clarify what the audit program intends to accomplish. It is useful as a tool to help provide direction in day-to-day decisions. For example, a mission statement that reads:

- X “to completely meet the air emissions technical assistance needs of our clients for pollution prevention and regulatory compliance,**
- X to meet section 507 program requirements, and**
- X to continuously improve the scope and depth of services to our clients”**

creates an image of the level of service and quality the client should receive when technical assistance has been provided and the file is closed. When the mission statement is used in conjunction with a client priority list, it becomes easier to set the level of service for each type of client.

c. Personnel and Training Resources

Thorough staff training can significantly and immediately improve staff competency. Service quality and turnaround time noticeably improve with well trained staff that understand how to perform in a focused manner using available resources.

Personnel training and resources are activities within a technical assistance or audit program that:

- ✍ develop staff technical expertise to improve program quality and integrity,**
- ✍ improve regular staff functions such as recordkeeping and client communications so that they are uniformly consistent, clear, and correct, and**
- ✍ create smooth overall program operation, so that the all parts function in concert with each other and thereby enhance the whole program.**

The necessity of proper training becomes obvious when conducting site visits. The following example provides an indication of the scope and depth of understanding an SBAP person should possess for the type of facility visited.

EXAMPLE 2

SBAP staff conduct an air emissions compliance and pollution prevention site visit in a small auto body shop (Joe's Bodyshop) with two spray areas. During the site visit the SBAP person must correctly identify which sources have an air permit and which need one. The SBAP person must also correctly identify what pollution prevention measures are being used and what additional pollution prevention options exist.

The ability to do this is a direct product of proper training. If determinations are neglected or done incorrectly then the audit component of the site visit will be flawed. This in turn will result in incorrect or inadequate technical assistance. In this example, assistance may not be provided in completing permit applications where necessary, and pollution prevention measures may not be instituted which would otherwise reduce emissions and associated compliance requirements.

The determination of which source needs an air permit appears to be straightforward. This is not always the case. Joe's Bodyshop would probably need a permit for the spray booth, and possibly other sources. Some states have small facility permit exemptions, or permit-by-rule and general permit options which can be used in place of a specific source permit. Eligibility for these options is often based on a predefined set of facility specific conditions such as material type and consumption, facility type, process equipment, control equipment, or operating practices. To correctly assess compliance status the SBAP person needs to be trained in and completely understand the interaction between:

- X pollution prevention options and compliance requirements,
- X specific operating processes of the facility, and
- X the nature of daily operations conducted at the type of business being visited.

In this example, a state permit exemption exists for auto body repair shops that never spray more than one gallon of sprayable material on any day. During the site visit the SBAP person questions Joe (the owner) about material usage and learns that:

- X recordkeeping is regularly maintained and is based on purchases,
- X no more than 5 gallons of paint is ever purchased in a month, and
- X no more than one gallon of paint is ever sprayed in one day.

On hearing this information a well-trained SBAP person will recognize that:

- X sprayable material includes reducers, thinners, hardeners, clear coat, sealers, catalysts, etc.,
- X one gallon of paint mixes to several gallons of sprayable material,
- X although the amount of paint sprayed in one day may never exceed one gallon the amount of sprayable material can, and
- X the amount of sprayable material mixed may not equal the amount sprayed because some may be disposed of as hazardous waste.

Example 2, con't

Site visit training for SBAP staff visiting Joe's body shop should be of sufficient scope and depth so that the following can be concluded:

- X it is unclear if the permit exemption applies,
- X more information is necessary, and more questions should be asked,
- X additional recordkeeping may be required to determine eligibility, and
- X it will probably be necessary to show technicians exactly how to keep records that satisfy compliance requirements.

Successful implementation of pollution prevention requires the same scope and depth of understanding as compliance requirements. During the site visit the SBAP person notices that Joe's shop uses conventional spray guns. There appears to be excessive overspray. As a result, the report recommends several options to help Joe's shop reduce overspray emissions.

Joe accepts the recommendations to use high solids paint and a high volume low pressure gun (HVLP). He chose a particular HVLP gun because the manufacturer said it can be used with his existing air compressor. One of Joe's goals is to minimize capital investment.

Joe's technician tells the SBAP person that the coating does not apply properly with the new paint and gun. It looks dry and powdery on the part. The technician has found that he can solve the problem with two minor adjustments. He can:

- X turn up the air pressure on the HVLP gun, and
- X add additional reducer to the high solids paint.

A well-trained SBAP staff person would recognize the following.

- X The resulting paint mixture will no longer be high solids when additional reducer is added. The VOC content may be higher than the previously used paint.
- X Joe's existing air system may not provide adequate air volume for the HVLP gun. Increasing air pressure will solve the dryness problem at the cost of HVLP performance. When high pressure is used to compensate for inadequate volume the HVLP gun functions more like a conventional gun.
- X Both of the technician's adjustments eliminated pollution prevention potential.
- X Experimentation may be required to determine the real cause of the problem.
- X It may be going on dry because the reducer is too fast or paint travel time too long.
- X A good start would be to use a slower reducer and make sure the compressor, air hose and couplers allow adequate air volume to the gun.
- X Further research may indicate that a different paint or type of gun works better.

Joe will most likely respond to the site visit by requesting follow-up assistance with compliance and pollution prevention opportunities identified in the audit. The SBAP person needs to

Example 2, con't

anticipate the type of follow-up technical assistance that will be requested and collect the specific information necessary while visiting the site.

Assume the SBAP person determined that Joe's Bodyshop is not eligible for the permit exemption and needs a spray booth permit. Before leaving the facility the SBAP person should prepare for the follow-up technical assistance process by collecting information necessary to assist Joe with completing the spray booth permit application. The SBAP staff person must understand what information is needed and how it will be used. Although Joe may eagerly provide all requested material he probably has little understanding of its meaning or implications and may inadvertently provide incorrect or misleading data.

In this example, Joe has another spray area that is uncontrolled and exhausts out a window. He may not perceive the system as an emission point because it has no stack. The SBAP staff person must be alert to such situations and be ready to explore for needed information.

The above pollution prevention example for Joe's body shop requires a high level of diligent information collection and follow-up technical assistance for pollution prevention to be effective.

d. Training Program

Staff training can include on-site training and classroom training. Both are necessary to provide effective technical assistance. On-site training should be used to familiarize SBAP staff with the technique and approach of facility site visits. This can be by observation of experienced SBAP staff.

It can be helpful to establish a simple SBAP training plan. This could be a system that provides individual or group training to SBAP staff in needed areas. Training should be continuous and ongoing. However, it may be more efficient to provide it on an as-needed basis. For example, suppose a site visit report does not clearly identify circumstances at a facility. During a staff meeting it may be helpful to discuss the importance of the report, how it should be written, and provide well-written and poorly-written report samples. Other topics that training may cover include:

- overall SBAP operations,
- specific procedures to follow prior to and during the site visit,
- procedures for incorporating and conducting follow-up technical assistance,
- internal client recordkeeping and information management,
- compliance requirements for specific industry types
- pollution prevention options for processes encountered at small businesses,
- managing unfamiliar process or unclear circumstances during a facility visit,
- managing difficult clients, and
- internal policies and procedures.

All of these topics, either directly or indirectly, are related to the quality and success of site visits and the entire technical assistance process. Several are addressed specifically in this manual including procedures

for incorporating and conducting follow-up technical assistance, internal client recordkeeping and information management, managing unfamiliar process or unclear circumstances during a facility visit, managing difficult clients, and internal policies and procedures.

There are a wide variety of sources for training information. Some easily accessible sources that can provide training material are included in Appendix A.

e. Integrating Site Visits with Follow-up Technical Assistance

The relationship with the client rarely ends when the site visit is over. The site visit may identify compliance deficiencies or pollution prevention opportunities. When these are clearly communicated to the client, the client will usually request follow-up technical assistance to implement the recommendations.

Integrating a site visit with follow-up technical assistance involves the process of using on-site audit information as a foundation for subsequent technical assistance. The way in which this is done will depend on the specific circumstances of the technical assistance program. Some technical assistance programs are independent of the state compliance office, some are part of the compliance office, and some fall in between. Some SBAPS are single media, and some are multimedia. Some are only pollution prevention and some also include compliance. The type of preparation for follow-up assistance will depend on where the SBAP fits in the scheme of assistance programs.

The goals and scope of the technical assistance program should be considered when determining the type of follow-up assistance to provide to a client. For example, a program’s mission could be to:

- ✎ completely meet the air emissions technical assistance needs of clients for pollution prevention and compliance by providing focused, facility-specific information and explicit guidance on how to use the information, or
- ✎ meet client’s pollution prevention needs for all media and provide clients with lists of contractors that may address their compliance needs.

When program goals are clear it should not be difficult to identify the scope and depth of follow-up technical assistance needed to achieve them.

If the technical assistance program addresses compliance then the specific compliance requirements will affect the type and degree of integration required. For example, a site visit may identify air emissions that are exempt from compliance requirements, provided regulatory notification is made. In this case it may be necessary to provide the company with technical assistance on how to make the notification. This may amount to no more than a sample letter. In this case, the integration of follow-up technical assistance with the site visit is relatively simple.

Other types of compliance requirements may demand a more sophisticated system to integrate follow-up technical assistance with the site visit. This is usually the case if the technical assistance program provides quantitative or analytical type assistance in completing air permit applications or conducting cost/benefit calculations for implementing pollution prevention.

Integrating site visits with follow-up technical assistance requires predefined and repeatable methods to:

- ✕ collect data during a site visit,

- ✗ analyze data collected during the site visit,
- ✗ compare processed data with applicable requirements or pollution prevention options,
- ✗ reflect site visit findings and data analysis findings in site visit report.

It also requires training staff in how to use these methods.

Many SBAPs currently collect, analyze and report findings. Effective integration of site visits with follow-up technical assistance requires a system that does this in a predefined and repeatable way. Without these properties, uniformity will not exist in follow-up assistance from client to client or even with the same client among different SBAP staff. When this happens then site visit data loses meaning because different staff may process data in different ways and come to different conclusions.

The type of methods used is not critical if they are clearly understood and followed. It can be helpful to develop tools to facilitate use of certain data collection methods, data processing methods, or data analysis methods. Some of the site visit technical assistance tools discussed in section D and included in the Appendix can be used for this.

One of these tools is industry specific questionnaires (discussed in section D.7. and included in Appendix D). Correctly designed site visit questionnaires will require that data be collected in a certain way every time. This eliminates error both in the collection and analysis of data. After reliable collection, data should be entered into a system that integrates the site visit with follow-up assistance.

The spreadsheets described in Section D.4. are an effective tool for data analysis. Spreadsheets can be programmed to accept and process data in exactly the same way every time. The programs should be standardized for all SBAP staff so that identical input results in identical output. Spreadsheets that are programmed to complete calculations based on inputs from industry specific questionnaires will allow data to be further entered into a repeatable system that integrates site visit data with technical assistance analysis.

EXAMPLE 3

In many cases, air permit applications require very specific emission source information and complex calculations. Clients often do not understand the regulatory factors used to evaluate applications. As a result, clients include extraneous, unclear, and conflicting data in the application.

Follow-up technical assistance for air permitting should include clear and concise information on preparation and presentation of the application. This can be in the form of a completed sample permit application accompanied by easy to follow instructions.

A sample guide to help small businesses complete an air permit application is available from the Iowa Air Emissions Assistance Program. The guide is too large to include as part of this manual.

A copy can be obtained by writing:

**Sample Construction Permit Guide and Application
Iowa Waste Reduction Center
75 BRC
Cedar Falls, IA 50614-0185.**

Example 3, con't

This guide can be used by clients and by SBAP staff conducting the site visit. It can ensure what they understand how the data will be incorporated into the application and that the correct data is collected.

This package should be industry specific. For example, a sample application for dry cleaners should include explanations and calculations for the dry cleaning industry. This is often infeasible because of the amount of work involved in developing such a guide. An alternative is to produce an industry specific guide that emphasizes concepts.

Clients require varying degrees of assistance with complex tasks such as completing inventories or applications. It is common for a client to be unsure of the suitability of his or her application, and the physical system which it represents. Poorly constructed emission sources and poorly constructed applications representing quality systems are often denied permits.

After an application is completed, follow-up technical assistance can be integrated with the site visit through a permit application review service. This could be used to help assess:

- ✧ whether the application truly represents the system the client has, or plans to install,
- ✧ whether calculations in the application are correct based on information collected during the site visit, and
- ✧ if the application is understandable to someone who has never seen the facility.

Permit review involves an evaluation of the application by SBAP staff for clarity, correctness and accuracy. This activity must be directly integrated with the site visit because only SBAP staff that visited the site will know if the application truly represents actual conditions.

If the technical assistance program addresses pollution prevention then several factors will affect the way in which the site visit is integrated with follow-up technical assistance. Pollution prevention audits require an in-depth understanding of industry specific pollution prevention technology. They require greater understanding of the processes and operating procedures within the industry than does a compliance audit. Likewise, follow-up technical assistance with pollution prevention requires a thorough understanding of industry specific pollution prevention technology.

Follow-up technical assistance for a pollution prevention site visit can be resource intensive. It may require development of a cost benefit analysis, providing list of equipment or material vendors, or technical assistance in modifying operating procedures. All of these requests may require research if the information is not on hand.

During periods of heavy activity it is often not possible to provide a high level of technical assistance. It may be necessary for the SBAP to establish a policy on how to prioritize and balance site visits with follow-up technical assistance. The issue will require either:

- ✧ brief follow-up assistance be more brief to allow time to complete more site visits, or
- ✧ site visit requests put on a waiting list to allow time for more thorough follow-up.

The choice on how to integrate these options depends on particular circumstances of the SBAP. In general, it is desirable to put site visit requests on a waiting list to allow more time for thorough follow-up technical

assistance. This is especially true if the follow-up technical assistance involves completing permits or other material that if done incorrectly could create larger problems in the future. Most facilities are willing to wait for a site visit. Most would also prefer that when their turn for a site visit comes they be given high quality thorough follow-up assistance. Poor follow-up assistance may leave the client with a negative impression of SBAP service.

2. Client Base Development

The effectiveness of an SBAP is tied to its ability to identify and reach clients. A program with few clients cannot be successful. A wide variety of client development and outreach avenues exist. A newsletter, a toll free phone number, brochures, workshops, and targeted mailings are useful tools. Developing a partnership with local/state business/trade associations, community colleges, and business extension programs at state universities can be very effective. The following discusses some of the more effective methods.

a. Direct Client Communications

Potential clients should be informed of the site visit service and asked if they are interested at every opportunity. This includes phone calls made or received, mailings, workshops, newsletter, public service announcement, or other correspondence or contact. Program staff must be ready to promote site visit services at every opportunity, (particularly in early stages of program development).

Client communications should stress the conditions and benefits of the site visit. These include:

- ☞ scope of the site visit,
- ☞ low or no-cost,
- ☞ regulatory or non-regulatory nature of the audit, and
- ☞ confidentiality provisions.

• Testimonials from previous clients are effective in demonstrating the value of site visit services.

b. Trade and Business Associations

• Trade and business associations can be important partners in reaching clients. Members of trade and business associations can be contacted through their organizations. Opportunities to speak at their annual/periodic meetings often result. Unfortunately, not all small businesses belong to their respective organization or associations because of membership fees or lack of contact.

c. Targeted Workshops and Mass Mailings

• Workshops specifically targeted towards an industry group help demonstrate services of the SBAP. Workshops are usually best for general and straight forward information purposes. Assisting clients in understanding very complex issues often requires one-on-one attention. This is usually infeasible during a workshop.

• Workshops can be advertised with targeted mass mailings. The more specific the target is, the more specific the material can be. A mailing that advertises a dry cleaner waste management and pollution prevention workshop will attract perchloroethylene and petroleum solvent dry cleaners.

d. Client List

Collection and development of a comprehensive list of businesses in the state is essential for targeted mailing, and characterizing types and numbers of clients. Several sources are available. All have shortcomings. Some possible sources are:

- ✍ State department of labor may provide a list of business paying unemployment insurance. These listing are not always up-to-date and can be awkward to work with; they are very comprehensive.
- ✍ Commercially available CD-ROM business listings offer excellent search capabilities, but sometimes contain limited data.
- ✍ The Small Business Administration (SBA) developed a data base for small businesses in the country known as ‘PASS’.
- ✍ Trade association mailing lists are accurate and reliable; they often do not contain all small businesses in the industry.

e. Referrals

State and local agencies should be involved in the outreach. Referrals from enforcement, permit review staff, and field inspectors are essential. A small business receiving a notice of violation or a compliance warning should also receive information on the availability of SBAP compliance assistance services.

Other agencies include:

- ✍ Small Business Development Centers,
- ✍ State ombudsman offices,
- ✍ Small Business Administration offices,
- ✍ Community college and university outreach programs, and
- ✍ National Institute of Standards and Technology (NIST) and Manufacturing Technology Centers (MTCs).

D Site Visit Technical Assistance Tools

Site visits can be greatly enhanced through the use of practical tools. The tools discussed below have successfully been used in SBAP activities.

1. Fact Sheets

Fact sheets provide a simple overview of information the client needs. Fact sheets are often used to simplify pollution prevention or compliance requirements for SBAP clients. Fact sheets provide enough information to let the user know that they need more information. A common format is an introduction to the regulatory or pollution prevention area, and a cursory outline of possible or needed actions. Fact sheets do not usually give the reader enough information to take action. This can mislead clients into thinking that everything that needs to be done is described on the fact sheet.

In effect, fact sheets inform clients that they must do something. They often do not inform the client on what, when, or how it must be done.

2. Plain Language Guides

The purpose of a plain language guide is to provide the user with a clear explanation of exactly what, when and how it must be done and who must do it.

The guide should be designed so that the user can find all necessary information in one place. No searching or additional calling should be necessary. The information should be in a logical order according to how the user needs it (e.g., chronological, by equipment type or process type). The guide should provide all information the user needs to take action. The guide should not contain information that the user of a particular section does not need. Plain Language Guides are provided all technical information that is needed, such as federal register requirements, in language plain enough for busy, small business people to understand.

A sample Plain Language Guide to help small businesses understand perchloroethylene dry cleaner requirements is available from the Iowa Air Emissions Assistance Program. A copy can be obtained by writing:

Plain Language Perchloroethylene Dry Cleaner Guide
Iowa Waste Reduction Center
75 BRC
Cedar Falls, IA 50614-0185.

3. Decision Flow Guides

A decision flow guide is designed to take the user through the decision making process to determine compliance requirements or pollution prevention options. The guide must be foolproof and fault proof. It must account for all circumstances that a user may encounter. It could be in flow chart form or in text form. Flow charts are sometimes difficult for small business people to understand.

A sample decision flow guide (in text form) for grain elevators is included in Appendix B.

4. Computer Programs and Spreadsheets

Computer programs are better suited for SBAP staff use than for client use. Many small businesses use computers only to a limited extent. Computer programs have the advantage of accepting and processing data in exactly the same way every time. When the same calculations are done by hand, it is possible that SBAP staff will interpret data and calculate results differently. This problem is greatly reduced when SBAP staff understand the program and the data entered into it.

Programs can either be written using spreadsheets or a coded language such as Basic or C. In most applications, spreadsheets are more suitable because they are easier for SBAP staff to program and modify. The type of assistance provided by SBAP usually will not require very large programs. Extremely long algorithms are better suited to executable code. Very large spreadsheets are sometimes difficult to manage. The type of language or spreadsheet used is not critical as long as SBAP staff understand how to program the system. When choosing a spreadsheet it is desirable to use one that has programmable macros, and multipage capability such as Excel, Quatro Pro, or an advanced version of Lotus.

It is usually necessary for the development of a program to start out simple. They may do basic calculations for simple emission inventories for a specific industry or process. As SBAP staff become more proficient, the programs can become more complex and effective. It is important that the SBAP write the programs to do calculations the way the regulatory agency expects them to be done.

The programs should be standardized for the SBAP so that identical input data results in identical output for all staff. The program can also contain a printout page containing all input data and calculated results. Spreadsheets developed to complete calculations based on inputs from industry specific questionnaires will allow data to be entered into a repeatable system that integrates site visit data with technical assistance analysis.

5. Completed Samples and Instructions for Clients

A completed sample application and instructions for completing an air permit application are included in the IAEAP Air Permit Guide. It can be obtained as described in Example 3. The purpose of the guide is to provide the user with a description of what the application should look like as well as an explanation of how to complete it. Some clients will find it contains all the information needed and develop quality applications reflecting processes at their facility. They will do this without further assistance from the SBAP.

Other clients will find it confusing and unusable. Providing a simpler guide that does not contain all necessary details will probably not help these clients. Such clients need a site visit and follow-up technical assistance.

6. Log Sheets and Recordkeeping Sheets

Sample log sheets for daily paint consumption are included in Appendix C. These sheets are useful in helping clients understand how to record data. Even when recording and monitoring requirements are clearly specified in text form, many small businesses prefer to see a sheet where columns and rows are labeled and ready to fill in.

7. Industry specific site visit questionnaire

A sample pre-site visit questionnaire for dry cleaners is included in Appendix D. Questionnaires should be industry or process specific. They should be developed so that each SBAP staff person understands the meaning of the data entered onto the sheet. Clients usually will not understand why the data is needed, but they should understand what data is required. A good questionnaire is one that clients can complete without inadvertently providing incorrect or misleading data. Short of careful development and testing there is no easy way to do this. It is often difficult to ensure data accuracy, so data should be collected, or at least checked, by SBAP staff.

8. Facility Specific Self Audit Checklist

A sample facility specific self audit checklist is included in Appendix E. The self audit checklist should reflect results of the site visit provided by SBAP staff. The checklist should be tailored to the facility and contain only processes present at the time of the site visit. It should spell out specific compliance requirements (e.g. permits, and recordkeeping) and outline any pollution prevention opportunities identified during the site visit. It should also provide instructions on what to do after changes to processes or waste streams.

9. Supplier and Vendor Lists

A sample vendor list is included in Appendix F. These lists are designed to save client time in researching vendors and to make SBAP staff aware of vendors and manufacturers. The lists should contain suppliers/vendors of alternative materials or equipment available to the interested small businesses. Include a disclaimer stating that this is not an endorsement of any equipment or service.

E The Site Visit Process

The Site Visit Process

The site visit process can be broken down into the following steps:

1. Establish contact with the small business,
2. “Promoting” the site visit as a useful service for the small business,
3. Pre-visit preparation,
4. The site visit,
 - audit
 - on-site technical assistance
5. Follow-up technical assistance

1. Initial contact

Initial contact with the business can be achieved through any one of the following methods:

- ✍ targeted mailings,
- ✍ referrals,

- ✍ phone inquiries,
- ✍ information packets/literature, and
- ✍ workshops presentations.

The small business operator may make initial contact for a variety of reasons. Inspection by the regulatory agency, proactive action on part of the small business, confusion regarding permitting requirements or other reasons may lead to the initial contact.

New clients are often not aware of site visit services or the full spectrum of the technical assistance program offered by the SBAP. It may not be necessary or productive to explain the difference between audit, site visit, and technical assistance. It is usually best to simply state that the site visit is necessary to provide effective technical assistance.

It is important to find out about the client’s needs, decide what to expect during the entire technical assistance process, and choose an effective method of meeting those needs. Expectations and role of both the parties, client and the technical assistance provider, should be clarified. This may be an evolving process starting with the initial contact and continuing until technical assistance is complete, and client’s needs are met.

For effective communication over the phone with most small business owners or representatives consider the following:

- ✗ stress the advantages of the site visit, such as plain English regulatory information,
- ✗ note that the program is free, non-regulatory, and confidential, if applicable,
- ✗ avoid using technical or regulatory terms such as potential emissions, RCRA, TCLP, VOC, or toxic pollutants,
- ✗ explain on a ‘need to know’ basis,
- ✗ give as few and simple options as possible,
- ✗ advise not to panic, assure SBAP visit is not related to regulatory enforcement visits, and most of their needs can be met with very little initial direct cost, and
- ✗ be clear about confidentiality and enforcement actions. Explain that a sincere effort to take corrective measures may help reduce severity of enforcement actions against them. See EPA’s policy on compliance incentives for small businesses [7] for a detailed explanation.

2. Promoting

The initial contact should be used to interest the small business in a site visit. The business should be made aware of any cost for the service. The confidential nature of the services should be clearly explained. The small business should understand the advantages of this service, and that full benefits to the small business necessitates a site visit.

Tailor the ‘promotion’ to suit the specific needs of a particular business or industry sector. One or more of the following can be incentives for a small business to use SBAP audit services:

- ✍ identify compliance deficiencies, determine compliance status and avoid fines/enforcement actions,

- ☞ reduce liability and potential problems,
- ☞ improve competitiveness,
- ☞ identify pollution prevention options with economic benefits,
- ☞ test effectiveness of company’s own environmental management procedures/methods,
- ☞ ensure reporting deadlines, recordkeeping and monitoring requirements, and approved permit conditions are met, and
- ☞ inform about upcoming regulations that may affect the business.

Explanation of the scope of the site visit and follow up assistance should be part of ‘promoting’ the site visit. The audit is designed to help determine applicable regulatory requirements and identify pollution prevention options. The audit may also identify opportunities to make changes in the process or equipment resulting in long term cost savings and less regulatory burden.

Success stories from similar industries can be very useful if the potential client is reluctant. A list of references that the client may contact can be provided if needed. Maintain company confidentiality or seek prior permission before making such references available to others.

Emphasize voluntary participation and availability of in depth follow-up assistance.

3. Pre Visit Preparation

a. Purpose of Visit

The staff person must establish the purpose of the visit and make a determination as to what kind of information may be necessary. It is also time to begin anticipating what follow-up activity may be needed.

EXAMPLE 4

A business contacted the SBAP after receiving notice from the state regulatory agency that they are classified as a major source as a result of their emission inventory done the year before and will be required to apply for a Title-V operating permit. The facility representative is not sure how the emission inventory was done last year and doubts if they are a major source.

In this case the main focus/purpose of the site visit will be:

- X identify sources of air emissions,**
- X collect processes information to compile an emission inventory,**
- X determine compliance status of each source, and**
- X seek necessary information on NESHAP, NSPS or any other issues that may affect Title-V applicability determination.**

At this stage, expected follow-up technical assistance will include emission inventory development, Title-V applicability determination, and recommendations on different compliance options, if available.

b. Background Material Study

Any background material available on file for the company should be studied. Any prior contacts with the SBAP should be noted. Interactions with regulatory agencies or consultants are also important.

A similar facility visited earlier can be a good source of information on what kind of processes and waste or emission issues might be a concern. In some cases, study of the relevant chapter in AP-42 or review of pollution prevention practices provides a better understanding of a particular business. This eases information collection and follow-up technical assistance processes.

Study of background material may not be critical for companies which meet the following criteria:

- ☞ relatively simple processes such as spray painting, welding, combustion sources etc.,
- ☞ uneventful compliance history, and
- ☞ no ‘hot button’ issues about this particular segment of small business.

On the other hand, background material study is very important if the company profile meets any of the following:

- ✗ complex and uncommon processes such as foaming operation, infrared heating etc.,
- ✗ common processes without any reliable source of emission or waste estimation such as electroplating, plasma cutting etc.,
- ✗ checkered compliance history, and
- ✗ other relevant issues such as new regulations applicability.

EXAMPLE 5

Preparation for an SBAP site visit includes getting information about general processes in a typical industry like the one scheduled to visit. The information collection has two parts; first is generic information common to all businesses such as:

- ✗ **compliance history,**
- ✗ **emission inventory development,**
- ✗ **state permit status, and**
- ✗ **Title-V permit applicability determination.**

Secondly, make a determination if this facility is regulated under NSPS/NESHAP or any other regulations. If yes, then collect relevant information during the visit to determine applicability, and specific regulatory requirements.

c. Facility Personnel Involvement

It is important to involve a company representative that:

- ✎ has working knowledge of the company’s day-to-day operations,
- ✎ has decision making authority, and
- ✎ bears responsibility for the company’s environmental performance.

This is normally the owner or top management of the company. This individual must understand the type and the extent of potential liabilities under the various environmental regulations. This person should be the primary contact.

In most cases small businesses need help to address immediate concerns such as applying for a permit or implementing hazardous waste regulatory requirements. In such cases, the SBAP staff should be ready to take the bigger picture into consideration, not just react to the immediate concern. All pertinent issues must be addressed. Pollution prevention should also be emphasized after the immediate concerns are addressed.

Schedule the visit when normal operation is going on to allow a better understanding of the process. The following site visit aspects are important:

- ✕ let the facility personnel know about the approximate time of arrival, and the duration of the audit.
- ✕ owner/upper management should be available to ensure that all company records, permits and other useful information are readily accessible,
- ✕ workers are a good source of process specific information, working practices, and operational data and should be included in the interaction, and

d. Checklists and Questionnaires

The facility operator should know before the visit what information will be required. This will make the site visit as productive as possible and will minimize time spent searching for records or data.

Previsit notice can be done by sending specific questionnaire forms related to the processes at the facility. Develop the questionnaires keeping in mind the types of information needed for follow up assistance. A questionnaire form developed by the staff should be field tested with a few businesses to make it ‘user friendly’.

Although standard questionnaires can be developed for specific industry groups, treat the questionnaire as guidance material. Do not expect it to cover all aspects for a given facility within the group. In some industry groups process variability from plant to plant may not be significant (e.g. dry cleaners, body shops). In other sectors it may be necessary to deal with facilities on a case-by-case basis. Adjust questionnaires, checklists, and information collection procedures accordingly.

A questionnaire form for a dry cleaner is enclosed as Appendix D.

e. Client Waiver

A client authorizes the auditor to investigate processes at the facility, and the duties and potential liabilities of both parties are defined in the waiver form. The client waiver should address the following:

- ✍ SBAP is not liable for consequences of implementing the recommendations made after the visit,
- ✍ the company permits the SBAP staff to investigate processes and examine record keeping,
- ✍ the visit and assistance are confidential and will not be reported to regulatory agencies (if applicable), and
- ✍ the audit or site visit does not eliminate possible enforcement action by a regulatory agency,

An example waiver form is enclosed as Appendix G.

4. The Site Visit

a. Initial ‘Kick Off’ Meeting

Introduce SBAP staff and explain SBAP services and the purpose of the visit in the “kick off” meeting. Review the client waiver with the facility staff and determine how it will be signed and returned to SBAP. If possible, it is best to have the waiver signed before starting the site visit. Resolve the following issues at the beginning:

- ✍ comply with signing of log sheet or visitors book if required,
- ✍ inquire about any safety requirements such as protective eyewear, shoes, aprons etc. for visitors, and follow them,
- ✍ review any existing permits, completed emission inventory, and contacts with local, state and federal regulatory agencies,
- ✍ seek permission to take any photographs or draw sketches of processes/equipment, and
- ✍ do not to sign any forms or statements that say the company is now protected from inspections or enforcement.

During the initial meeting and later discussions these aspects are important:

- ✗ ask open ended questions (e.g. ‘what’ and ‘how’), not obvious yes/no questions (e.g. ‘do you’),
- ✗ avoid making assumptions and asking leading questions,
- ✗ avoid using technical/legal terms, explain them clearly if you do use them,
- ✗ summarize understanding of key points discussed to ensure accuracy.

b. Site Visit Method

Ask the facility staff to explain the operation at the facility before the walk-through. This will give the auditor a better understanding of what to look for.

If a questionnaire form was sent prior to the visit, check for completion and the need for additional information. The completed questionnaire will identify what to cover during the site visit in general, and what information needs to be collected.

It is difficult to cover all possible situations in one questionnaire form. It is the auditor’s responsibility to address issues not covered in the form during the visit. The client may not be aware or may consider ‘unimportant’ issues that are otherwise significant. For example, a client may not consider an infrequently used cold degreaser (without a specific exhaust) as an air emission source. This is important because the facility may now be subject to halogenated solvent cleaner air regulations.

If a questionnaire form was not sent prior to the visit, the on-site visit can be conducted two ways. One approach is to ask questions and write down what specific processes need to be examined before the walk-through. Also, discuss applicable process specific regulatory or compliance issues. In this structured method of conducting the site evaluation, the auditor takes a more active role and keeps the audit focused. This method is particularly helpful for clients who are not familiar with regulations and have difficulty in determining what is pertinent. This structured method is also known as the ‘prescriptive method’ [6, 7] when doing pollution prevention audits.

A more efficient (staff time) and less structured method starts the audit walk-through after the initial kick off meeting. The auditor takes notes and asks questions as the client assumes a more active role and determines the sequence in which the processes in the facility are investigated. This method works well with clients who are somewhat familiar with regulatory issues and have a fairly good idea what areas are affected. This method is also known as the ‘descriptive method’ [6, 7] when doing pollution prevention audits.

The auditor should decide prior to arriving or during the initial meeting which particular method may be suitable in a given case. Whenever in doubt, the structured, prescriptive method is recommended.

In either case, the auditor should be inquisitive and on the lookout for areas that might be unintentionally missed. New and experienced auditors must maintain this key ability.

A primary contact should be established before the visit. During the visit the primary contact should be verified and a secondary contact noted for future communications.

c. Walk-Through

Use the questionnaire (either sent to the client before the visit or the one brought by the staff) during the visit. Examine the facility’s property and operation to collect necessary information needed to determine regulatory applicability, compliance status, and make recommendations.

The questionnaire or checklist is of vital importance in helping the auditor remember pertinent issues. At the same time the audit should be flexible to account for facility variability. Accurate notes should be taken for later use.

Suggested guidelines for the auditor to consider during the walk-through are:

- ☞ Do not touch any equipment, pipelines, stored raw material, product, or waste material. Request the facility staff to help with any detailed examination such as opening any closed container, removal of covers, etc.
- ☞ Ask basic questions to become familiar with the processes. Make sure to gather enough information so that after visit telephone calls are not needed (or minimized).
- ☞ Do not assume that facility personnel are familiar with commonly used regulatory terms (e.g., RCRA, VOC, fugitive emissions, toxic, etc.).
- ☞ Emphasize the areas being covered by this audit, and provide appropriate referral for other topics. The client should understand that the auditor/staff will directly address only the areas discussed during the ‘kick off’ meeting.
- ☞ Expect questions on air regulations, OSHA, RCRA, water, and other issues during the visit. If answers to any question or explanation of an issue is unknown to the auditor, it is very important to:
 - state ‘don’t know’ clearly,
 - take detailed notes regarding the issue, and
 - assure the client that you will get back to them with answers or a referral, as appropriate.

During the visit it is important to point out what is being done right. This provides a positive note to the visit. It is also an opportunity to learn from the small business. Many operators can be very innovative, and new techniques can be learned that can be transferred to other small businesses.

Positives should also be relayed to the facility owner and/or upper management. This will help justify the investments for previous compliance and pollution prevention efforts, and encourage further work in these areas.

In general, during the visit examine the following:

- ✗ visible sources of air emissions,
- ✗ all possible sources of air emissions including fugitive emissions,
- ✗ process and control equipment operations to determine compliance with permit requirements,
- ✗ equipment operations to determine maintenance practices, and compliance with recordkeeping requirements, and
- ✗ exhaust system and outside discharge for each emission source.

Collect all necessary information to do an air emissions inventory. This will include emission source identification, process/equipment capacities, raw material consumption, maximum design capacities, actual working schedule, control equipment parameters, and stack and exhaust information for all possible sources of air emissions.

If a permit requirement is discovered at the time of the visit, then the following information may be necessary: process description, sketch of the emission source, facility plot plan, and expected maximum usage allowing room for future expansion.

It may be necessary to put some kind of restriction in the permit application to lessen regulatory burden (e.g. synthetic minor). This can be achieved by putting restrictions on maximum annual hours of operation or limits on annual raw material consumption or production output. Appropriate information must be collected for staff to help with this option.

This is an example when scope of the audit may need to be extended to facilitate effective technical assistance, and ensure that the ‘one stop shopping’ concept works from the business point of view.

Different options will have different recordkeeping requirements as part of permit conditions. Explain these options to the client, and then help him/her arrive at the right decision during the follow up assistance phase.

For example, a consumption-based limitation written in the permit for a spray booth will require log of daily, monthly or yearly total paint material consumption. If the limitation is based on maximum annual hours of operation, a yearly log of spray hours will need to be recorded to demonstrate compliance with such permit condition.

d. Document Review

Examine any existing permits, records, reports, completed emission inventory or contacts with local, state and federal regulatory agencies. Establish a compliance history and take note of previous inspections or violations.

Tailor the audit to emphasize areas that are targeted by regulators during routine compliance visits. This may include the type of acceptable recordkeeping to show compliance. The multi-media investigation manual prepared by the EPA National Enforcement Investigation Center (NEIC) recommends EPA inspectors review the following; inspection logs, annual documents, operating reports, self-monitoring procedures and data, spill clean-up reports, manifests, notifications/certifications, emergency response plans and training records [4].

The Site Visit Process

- The following points should be kept in mind while reviewing documents/records:

- required backup documentation is maintained (e.g. MSD Sheets),
- necessary information is available on the document being examined,
- reporting deadlines are met consistently,
- documents are distributed to all concerned parties when applicable, and
- information contained in the documents is consistent with observations made during the site visit and information is updated.

- *e. Exit Interview*

- The exit interview should cover the main points of the visit and follow up activities. These are:

- review of the primary areas where actions will be needed (e.g. permit required),
- note of urgent actions that should be taken as soon as possible, if applicable,
- positive recognition of good or innovative practices.

- ✍ description the follow-up assistance that the client can expect, and when it will be delivered,
- ✍ mention any observed pollution prevention opportunities, with details to be provided later.

Emphasize that the preliminary recommendations are in fact preliminary, and may change as a result of reviewing additional information. Staff must spell out what is expected of the business representative for additional information. The kind of follow-up assistance (permit review, compiled emission inventory etc.) the SBAP will provide should be re-emphasized. Also, restate any outstanding unresolved questions or issues raised during the visit and the specific follow-up activities to be taken to address these questions or issues.

5. Follow Up Services

Based on the site visit and audit, further technical assistance in one or more of the following areas may be provided:

- X review permit applications prepared by the client.
- X assist with compiling permit applications on the basis of information provided by the client,
- X develop a facility wide emission inventory and determining regulatory status,
- X determine Title-V applicability,
- X compile or review state voluntary permit application,
- X determine NSPS applicability and specific compliance requirements,
- X determine NESHAP applicability and specific compliance requirements,
- X explain pollution prevention opportunities identified during the visit, and
- X provide vendor lists, guides, fact sheets or other SBAP material requested during the visit.

The follow-up report issued to the client should address applicable areas listed above. The report should be easy to read and provide information on a ‘need to know’ basis only.

Explain pertinent air emission related terms/definitions in the first section. Explain and discuss existing conditions at the time of the visit, applicable regulations, and recommendations in the following sections in the report. Also identify other SBAP services available to the business in the report.

An example SBAP follow-up report is included in Appendix H.

F Special Considerations

Site visit preparation and follow up activities should be geared towards meeting the specific needs of small businesses. Small businesses require focused, in-depth assistance. In most cases it is not enough to simply inform them about what they need to do. Very specific ‘how to’ instruction is often necessary. Assistance should be practical and to the point.

1. Difficult Clients

Some clients may be more difficult to work with than others for several reasons:

- ☞ very upset with perceived ‘heavy’ and ‘unfair’ regulatory burden,
- ☞ suspicious of SBAP staff,
- ☞ provide erroneous information on purpose,
- ☞ not providing required information for fear of possible enforcement action,
- ☞ try to play the SBAP against the regulatory agency and vice versa to avoid responsibility,
- ☞ purposely misrepresent or misinterpret SBAP’s recommendations,
- ☞ feign ignorance and overwork to have the SBAP do ‘all’ the work for them, and
- ☞ change of ownership or losing primary SBAP contact.

It is common for clients to have heard of SBAP, but be confused about services and how it will serve their long term interest. Some of these perception problems may be addressed through patient listening and explanation of SBAP’s role as a ‘friend’ not an adversary. Make it clear in the beginning of the contact what the SBAP will and will not do, and what is expected from the client throughout the entire technical assistance process. Try not to leave anything to chance or subjective interpretation.

With difficult clients it is very important to document all types of communications (e.g., phone contacts, letters etc.) in detail in the client file. Communicate recommendations, explanations, suggestions, etc. in written form as much as possible and track the chronology of events. An example letter written to an SBAP client is enclosed in Appendix I.

2. Self Audit

Self audit checklists and guidance manuals may have limited use for small businesses for two reasons:

- ☞ It is difficult to prepare a self audit checklist or guide that covers all situations that can be faced by a small business without becoming overly cumbersome or complex for the small business to use. This is especially true when considering the extent of state and federal regulations.
- ☞ It may be difficult for a small business to pick out the specific information and instructions that apply to their circumstances. The need-to-know information may be obscured in a thick document.

Small businesses are sometimes interested in a self audit checklist that provides a comprehensive listing of requirements that may apply. Some states have successfully compiled such a list [5].

An alternative is a client specific self audit checklist based on information collected during the initial SBAP site visit. SBAP staff that provided the site visit could develop the client specific self audit guide, after the site visit is completed, to reflect circumstances at the facility in terms the client recognizes. The guide should be no longer than few pages, and the client should be able to make copies and review the facility on periodic basis.

This approach has three advantages because:

- the client specific self audit checklist refer directly to conditions at the client’s facility,
- it does not address issues the client is unfamiliar with or does not need to know about, and
- the SBAP is familiar with the facility and can easily assist with or update the self audit process.

An example of client specific self audit checklist can be found in Appendix E.

3. Auditing Standards

A number of auditing standards are currently being developed. Small businesses that are suppliers, contractors or vendors of businesses participating in any of these standards may be affected.

Two of the standards that may affect small businesses are being developed by:

- American Society of Testing Materials (ASTM), and
- International Standards Organization (ISO).

ASTM standard PS11 will cover auditing, and PS12 will cover environmental management system standards.

ISO 14000 is the international standardization of procedures and protocols for environmental management systems. Certification may be necessary for certain companies in the global marketplace. The standards are expected to be structured similarly to the ISO 9000 quality management systems standard. A primary objective of ISO 14000 is the avoidance of non-tariff trade barriers resulting from a proliferation of inconsistent national and regional environmental standards.

4. Confidentiality

Client confidentiality is a critical issue from the small business’s point of view because:

- violations identified during the site visit could result in enforcement actions,
- trade or business could be compromised, and
- the business will no longer be inconspicuous and may be targeted for future inspections if knowledge of its existence gets into regulatory agency’s information system.

Handling client confidentiality within the SBAP depends mainly on how SBAP was formed and the scope of SBAP's operation. For example, the Clean Air Act Amendments do not give section 507 SBAPs statutory confidentiality. A regulatory agency may have access to SBAP client files. This may be further complicated when the SBAP is operated within the regulatory agency.

EPA's August 12, 1994 Enforcement Response Policy for Treatment of Information Obtained Through Clean Air Act Section 507 SBAPs allows two options.

- ✗ The correction period option - states may give small businesses up to 90 days to either correct violations discovered during compliance assistance or take steps to correct them, except in certain cases such as criminal actions. Under certain circumstances this may be extended an additional 90 days.
- ✗ The confidentiality option - SBAPs may keep confidential information on violations identified through voluntarily compliance assistance if the SBAP is strictly independent from the states regulatory authority.

The entire policy [8] should be reviewed before using either option.

On March 31, 1995, EPA adopted an interim policy [9] on environmental self auditing and self disclosure. The three major provisions of the interim policy include:

- ✗ substantially reduced civil penalties for companies that voluntarily disclose violations and take corrective measures, if certain conditions are met,
- ✗ assurance that EPA will not recommend to the Department of Justice that criminal cases be brought against companies which disclose and correct violations identified through self-audits, and
- ✗ assurance that EPA will not request voluntary environmental audit reports for a civil or criminal investigation unless there is independent information indicating violations.

EPA's June 14, 1995 interim policy [10] expands upon the August 12, 1994 policy for section 507 by applying the same principles to other Environmental Technical Assistance Programs (ETAPs). Under the new interim policy the EPA will eliminate or reduce the civil penalty if:

- ◇ the small business demonstrates a good faith effort to comply by seeking compliance assistance from a non-confidential government or government supported program,
- ◇ the small business was not subject to a warning letter, notice of violation, citation or other enforcement action for violation of the requirement for the past five years and has not been subject to multiple enforcement actions for violations of environmental requirements,
- ◇ the violation does not involve criminal conduct, and
- ◇ the business corrects the violation within six months.

A client's confidentiality concerns can be reduced by:

- ◇ explaining to the client that information in permit applications necessary to achieve compliance will be made available to the regulatory agency,

- ✧ limiting the scope of the audit to areas the client is comfortable with, and
- ✧ seeking permission (if possible, written) to use any pollution prevention idea or process information for referral purposes.

G Program Expansion

1. Multimedia

SBAP staff should expect to be confronted with questions on air emissions, hazardous waste, solid waste, wastewater and worker health and safety requirements during a site visit. Questions on topics the technical assistance person is unfamiliar with should be handled with appropriate referrals.

The incremental cost of providing multi media assistance is small compared to doing single media audits. The first step is to develop necessary resources to be able to expand to multi media. Staff training is of vital importance. While hiring new staff for the SBAP program, it will be easier to train someone with a background (or relevant course work) in environmental regulations and compliance issues.

Other states with multimedia audits can be excellent sources of training. For example, the EPA Small Business Ombudsman’s office has sponsored a “Peer Match” program to provide training to new SBAP staff in many states.

In-house training on state specific requirements, practices and enforcement activities is essential. Other aspects of multimedia program development will follow the outline discussed earlier for development of the air audit program.

Initially, it may be good idea to target a particular segment of industry. Develop the multimedia assistance program with the local trade association or business organization. Select a few businesses to study commonly encountered problems in that industry. Identify ‘hot button’ regulatory issues specific to that industry, and other related issues. The state regulatory agency will be a good source of information on compliance and enforcement history for that industry type.

Unlike single media audits it is difficult to prepare a general questionnaire form or checklist for multimedia audits because of the complexities involved.

Useful reference material should be developed. This can include a local list of consultants, testing laboratories, vendors, fact sheets, regulatory summaries, recordkeeping log sheets, sample permits and notification letters.

2. Pollution Prevention Assistance

The 1990 Pollution Prevention Act establishes pollution prevention as national priority. EPA’s pollution prevention policy states ‘regulations and compliance activities must reflect pollution prevention commitment.’ The main focus of most audits is compliance, driven by regulatory initiatives. The pollution prevention component of the audit targets reduction or elimination of pollution regardless of regulatory constraints.

Pollution prevention case studies, on-line data bases, and other technical assistance providers are excellent sources for training materials. Examine the case studies with consideration for the small business

environment. Most published case studies are done with large or medium size businesses; applying these concepts to the small business must be done with care.

Capital expenditures which will pay off handsomely on a long term basis may be a ‘hard sell’ to small businesses concerned with the bottom line. Businesses with low profit margins often avoid capital investment even when there is significant potential for long term gain.

Small business pollution prevention is an area that needs more applied research and practical guidance. Suitable pollution prevention options or opportunities have been identified, but the barriers to implementation have not been fully identified or overcome.

If the focus of the audit is pollution prevention, adjustments may be necessary in how the site visit is conducted. Information collection is more resource intensive and comprehensive in pollution prevention audits as compared to compliance audits. It is usually necessary to develop flow charts, and collect data on material inputs/outputs for selected processes, identify process characteristics (to evaluate alternatives), and conduct cost benefit analysis during the technical assistance process. More than one site visit may be necessary if the operation and processes are relatively complex. Appendix A lists guidance and reference material for pollution prevention assistance.

Pollution prevention opportunities must be identified during the audit. Inspect dumpsters and storage areas, observe operating and housekeeping practices, and discuss with facility staff to identify possible opportunities for pollution prevention. This may involve one of the following:

- ☞ Change the product - Products are redesigned to reduce environmental impact. This may involve significant capital investment, and in most cases may not be viable alternative for a small business.
- ☞ Change the material - Material substitution can reduce resulting pollution considerably. Examples are switching to water based or low VOC paint from solvent based or high VOC paint. The case study enclosed in Appendix J is such an example.
- ☞ Change the technology - New equipment/technology (high transfer efficiency equipment), equipment modification (drip pans), increased automation (convert from batch to continuous), and process layout (lessen handling and cleaning) are few examples of changing to pollution prevention technology.
- ☞ Change operating practice - Operating and maintenance procedures (cover solvent tanks, scheduled maintenance), training of employees, waste segregation, and inventory control are areas where pollution prevention practices can be used.

3. Quality Assurance/Evaluating Effectiveness of Assistance Program

There is no single measure that can adequately characterize the quality and program effectiveness of an SBAP. However, there are countless methods that could be used to measure and monitor SBAP program effectiveness and quality assurance. Each program must find the measurables that provide the best characterization of the Program’s effectiveness in meeting its mission. For this reason it is important to compare quality assurance and program effectiveness measures to the program’s mission.

Program effectiveness can be measured through quantitative or qualitative means. Quantitative measures are normally taken over a specified time period. Some quantitative measures include:

- ↳ the number of total clients assisted or the number of clients assisted in specific areas,
- ↳ the number of assists provided in a certain type of activity, such as permit applications,
- ↳ the number of site visits completed,
- ↳ the number of phone assists provided, and
- ↳ quantitative client evaluations of the service provided.

Some qualitative measures include:

- ↳ review of company file logs for adequate and proper documentation, appropriateness and thoroughness of assistance,
- ↳ review of company file logs for indications of the quality of client service or staff training,
- ↳ review of site visit reports for quality and level of writing,
- ↳ review of site visit reports for clarity, thoroughness, and soundness of recommendations,
- ↳ review of permit applications, emission inventories, etc. for clarity, thoroughness, accuracy, and correctness, and
- ↳ review of clients' qualitative evaluations of the service provided.

Regardless of how program effectiveness is measured, the measurables (i.e., the items listed above) will need to be compared to a standard or criteria to have meaning. This standard could be:

- ✗ a program's own qualitative and quantitative criteria as specified in a mission or objectives statement,
- ✗ performance of the best performing program for each measure of a set of nationally standardized qualitative and quantitative measures, and
- ✗ arbitrary qualitative and quantitative performance standards set by the evaluating entity.

Data on quantitative measures of program performance could be extracted from client assistance records. Records of client assistance should be available at several levels. Lack of adequate recordkeeping will make it difficult to monitor program effectiveness, and it could reduce program effectiveness.

One common method of recordkeeping is a brief assistance sheet to be completed for any client phone contact. This normally identifies basic information about the client such as:

- ✗ the fact that assistance was provided,
- ✗ the contact name, phone number, and business name and address,

- X the nature of request or type of assistance provided, and
- X additional comments or questions.

More in depth assistance may require more detailed assistance records. The cutoff between when brief and detailed assistance is provided will depend on each program. For some it might be a time limit (e.g., more than 60 minutes of staff time is a detailed assistance) and for some it may be the type of service provided (e.g., a site visit may constitute a detailed assistance).

Regardless of how brief and detailed assistance are determined, each assist should be recorded. It is also important to keep a running count of assists for each type of process, industry or service. This count should be updated periodically, such as monthly or quarterly. The assistance count can indicate the amount of technical assistance provided but not the quality. It will indicate trends in requests for assistance. These trends are helpful in identifying industry sectors that are not receiving adequate technical assistance.

A program's assistance count can easily be maintained using a simple matrix. A count should also be kept of the number of site visits provided. This could be done on the same matrix. A sample assistance count matrix is included as Appendix K. The left side of the page indicates the type of assistance provided (e.g., construction permits, operating permits, etc.) and whether the assistance was brief or detailed. The left hand top of the page identifies columns for cumulative totals, yearly totals, three month and monthly totals for all staff. The right hand top of the page identifies columns for each staff member.

Another measure of technical assistance is the number of presentations conducted and attendees present.

A direct measure of quality assurance is a written record of all activity that occurs with each client. This is most easily done by keeping log sheets in the client's file. Every time any activity takes place with the client, the SBAP staff person should record the date and description of the activity on the file log sheet. The record should be chronological, hand written, detailed and clear. Hand written records provide identification of the writer if initials are forgotten. Details should include:

- ◇ the nature of conversations with the client or regarding the client,
- ◇ date material or letters were received from or sent to the client,
- ◇ comments on problems with material received,
- ◇ reasons letters were sent,
- ◇ status of client activity,
- ◇ etc.

The file log will contain valuable information if problems arise in the future. It can be used to reconstruct events that caused client complaints, identify procedural and policy shortcomings in the SBAP, and support past actions of SBAP staff. Periodic review of file logs provide insight to quality assurance levels and possible solutions.

One of the most direct forms of monitoring quality is client evaluation form. This should be provided to clients after technical assistance has been completed. It provides direct feedback from the client on their perception of the quality of the technical assistance. The client should be invited to provide comments

when desired. Poor evaluations should not be used to chastise or criticize staff. They should be used to identify problem areas and provide training to correct them.

Follow-up phone calls also provide a very effective measure of service quality. On a periodic basis phone calls made to clients will reveal information not easily detected in a written evaluation sheet. Many clients do not express all of their thoughts, especially if they need to take time to write them.

One of the most valuable quality assurance checks is a periodic review of site visit reports and other client materials such as permit applications SBAP works on. Review of completed material directly indicates the quality of work the client is receiving. Poorly written or carelessly done work should be corrected. Staff should be trained on the methods and the need to produce quality work. It may be necessary for the SBAP to develop and standardize procedures on how work should be completed. For example, use of a spreadsheet to complete calculations for a certain industry can eliminate sloppiness in the way calculations are done. Another step that can be taken would be to establish a system where all reports must be peer reviewed, corrected by the writer, and given to the quality assurance manager or program manager for final review before being sent. The quality assurance manager or program manager can review selective reports to varying levels of quality assurance.

a. Improved Information Collection

An objective of a site visit program should be to improve information collection for follow-up technical assistance. To do this it is necessary to keep track of number of contacts (phone calls, letters) made after the site visit is complete but before technical assistance (permit review, emission inventory development etc.) is complete. An information collection problem may exist if the number of client contacts for a company following a site visit approaches the number client contacts for a similar company that did not have a site visit. This comparison may be difficult to make because:

- ✍ no two companies are alike, and it is extremely difficult to keep all other variables unchanged,
- ✍ the level of complexity involved in the follow-up technical assistance may be significantly different,
- ✍ extraneous factors like a notice of violation or a directive from regulatory agency may be a factor, and
- ✍ special circumstances like difficulty in getting information from a third party may be a factor (e.g., supplier or vendor).

Effects of some of these factors can be reduced by careful choice of clients to be compared and the type of technical assistance needed. One example can be two body shops required to compile a facility wide emission inventory. Most body shops will have spray painting, welding, and combustion as air emissions sources. The following information is needed to complete an emission inventory:

- ✕ maximum design capacity,
- ✕ actual material consumption and operating schedule,

- ✗ raw material specification,
- ✗ control equipment and related efficiencies, and
- ✗ any federally enforceable limit on any of the sources.

After boundaries and parameters are set, the effectiveness of information collection during the audit can be measured by:

- ✗ number of phone calls, letters, and faxes required to collect additional information after the initial contact,
- ✗ number of times documents/information submitted earlier required further clarification, and
- ✗ duration of time between initial contact and completion of technical assistance.

b. Improved Communication

A second measure of site visit effectiveness is the level of communication with small businesses. From a small business point of view, it is easier to understand regulatory requirements, SBAP services, and what they need to do as a result of the visit. From SBAP's point of view, the site visit helps the technical assistance person to examine pertinent issues from small business's perspective, and become familiar with specific processes.

For example, when developing an emission inventory for grain handling facilities initially, the potential emissions from a group of grain storage bins were to be based on maximum loading and unloading capacity of each storage bin. Phone conversations indicated there might be some miscommunication because:

- ✗ the SBAP's was unfamiliar with grain handling operations, and
- ✗ the concept of potential emissions was not clear to the client.

The SBAP staff visited that grain handling facility. It was found that a group of storage bins was served by one distributor. This allowed loading or unloading of only one bin at a time. As a result, the maximum potential was limited by the group distributor capacity, not by each storage bin capacity. This resulted in potential emissions 5-6 times lower than the pre-visit estimate.

c. Improved In-house Training

A third measure of the success of the site visit program is its effectiveness as a tool for new staff training in overall SBAP services. A successful site visit program will provide efficient 'on the job' training and will significantly reduce turn around time for new staff to be able to work independently. Past experience with training interns underscores the importance of audit or site-visits as a training tool.

d. Pollution Prevention

Finally, effectiveness of an audit program can be measured by the pollution prevention opportunities identified, and the rate of implementation of pollution prevention recommendations. Sets of fact sheets with industry specific practical recommendations suitable to small businesses, number of actual case studies, etc., can be used to gauge the effectiveness of pollution prevention part of the audit program.

Appendix A

Sources of training material

EPA's Office of Air Quality Planning and Standards Technology Transfer Network (OAQPS-TTN) contains several boards that offer an abundance of pollution prevention and compliance information.

EPA's Air Pollution Training Institute (APTI) offers classroom and self study courses in a broad array of air emissions topics. APTI can be found under OAQPS-TTN.

EPA's EnviroSense bulletin board sponsored by Office of Research and Development and Office of Enforcement Compliance and Outreach.

EPA's Small Business Ombudsman Peer Match training program pairs states with well developed section 507 SBAPs with states that need assistance.

Resource Guide For Small Business Air Emissions Assistance. A collection of technical assistance material available from technical assistance programs in each state. Available from:

Iowa Waste Reduction Center
75 BRC
Cedar Falls, IA 50614-0185

Facility pollution prevention guide, US EPA ORD, May 1992, (600/R-92/088).

Workplace waste reduction guide, President's council on environmental quality, 1992.

Business guide for reducing solid waste, US EPA OSWER, November 1993. (530/K-92/004).

Source reduction strategy manual, Pennsylvania Department of Environmental resources, July 1992, (DER # 1395-7/92)

Waste reduction self-evaluation manual for manufacturers, Delaware pollution prevention program, 1992, (Doc. No. 40-09/92/09/02).

Profiting from waste reduction in your small business, Alaska Health Project, 1988.

A practical guide to pollution prevention planning, American institute for pollution prevention, October 1992.

Pollution prevention assessment handbook, Center for Hazardous Material Research (CHMR), January 1994.

Industrial waste audit and reduction manual, Ontario Waste Management Corporation (OWMC), October 1993, contact 416/923-7521.

Appendix B

Iowa Air Emissions Assistance Program’s (IAEAP) Guide to Determining Applicability for Construction and Operating Permits for Grain Elevators

The purpose of this guide is to clarify which grain elevators are subjected to NSPS, and how to count the fugitive emissions in the applicability determination for grain elevators. Iowa Department of Natural Resource’s (DNR) instructions to the Title V operating permit state (page 3) that fugitive emissions must be included when calculating potential emissions to determine Title V applicability if the facility is subject to New Source Performance Standards (NSPS). In addition, the DNR requires a construction permit for fugitive emissions at facilities subjected to NSPS.

To use this guide complete the following steps:

1. Carefully review the following definitions:

“**Fugitive Emissions**” are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. For example, dump pits and load outs that are not vented, are considered fugitive emissions.

“**Grain**” means corn, wheat, sorghum, rice, rye, oats, barley and soybeans.

“**Grain Terminal Elevator**” is defined as an elevator having a permanent storage capacity of more than 2.5 million bushels and used for storing grain.

“**Grain Terminal Elevator**” does not include elevators located at animal food, pet food and cereal manufacturers, breweries, and livestock feedlots.

“**Grain Storage Elevator**” is defined as an elevator located at any wheat flour, wet corn, dry corn, rice or soybean mills and having a permanent storage capacity of more than 1 million bushels.

“**Grain Storage Elevator**” does not include elevators storing sorghum, rye, oat and barley.

“**Criteria Pollutants**” includes particulate matter less than 10 microns diameter (PM-10), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), and lead (Pb). Although total suspended particulate (TSP) is not included in the criteria list it must be included in the Title V applicability determination and the application.

2. Determine if the grain elevator is at a facility which is a major source because of non-fugitive emission sources at the facility. This should be done by calculating potential emissions for each pollutant from all sources that are not considered fugitive. Please read the following notes.

X For most grain elevators the only pollutant normally of concern is Total Suspended Particulate (TSP), which is airborne dust. Elevators with sources of other criteria pollutants must determine the potential emissions for each pollutant.

X If you are unsure of how to calculate potential emissions then refer to the instructions from the DNR’s 1993 Emissions Inventory Questionnaire, the Title V Operating Permit application package or call the Iowa Air Emissions Assistance Program at 319/273-2079.

- X If potential emissions for any criteria pollutant totals more than 100 tons per year then the facility is a major source. Go to step 3.
- X If potential emissions for each criteria pollutant totals less than 100 tons per year then the facility may be a major source. Go to step 4.

3. The facility is a major source.

Either a Title V or a Voluntary Operating Permit application must be completed. Please read the following notes.

Fugitive emissions must be included in the Title V and Voluntary Permit applications.

If you are unsure of which operating permit application to complete (Title V or Voluntary) please contact the Iowa Air Emissions Assistance Program.

The facility may be subject to NSPS. To determine this, answer the following two questions.

- a. Is the facility classified as either a “Grain Terminal Elevator” or a “Grain Storage Elevator”?
- b. Was the facility built or modified after 8/3/1978?

If the answer to BOTH of these questions is YES then the facility IS subject to NSPS. The following must be done.

- 1) Complete construction permits for all emission sources including fugitive emission sources.
- 2) Refer to step 6 for NSPS requirements.

If the answer to EITHER of these questions is NO then the facility is NOT subject to NSPS.

There is no need to go any further on this sheet. Stop here.

4. The facility may be a major source.

The next step is to determine if the facility is subject to NSPS. To do this answer the following two questions.

- a. Is the facility classified as either a “Grain Terminal Elevator” or a “Grain Storage Elevator”?
- b. Was the facility built or modified after 8/3/1978?

If the answer to EITHER of these questions is NO then the facility is NOT subject to NSPS. Go to step 7.

If the answer to BOTH of these questions is YES then the facility IS subject to NSPS. Go to step 5.

5. The facility is subject to NSPS.

The following must be done.

- a. Complete construction permits for all emission sources including fugitive emission sources.
- b. Refer to step 6 for NSPS requirements.
- c. Determine if the facility is a major source because of all emission sources (including fugitive) at the facility. This should be done by calculating potential emissions for each criteria pollutant from all sources (fugitive and non-fugitive). Please read the following notes.
- X For grain elevators the only pollutant normally of concern is Total Suspended Particulate (TSP), which is airborne dust. Elevators with sources of other criteria pollutants must determine the potential emissions for each pollutant.
- X If you are unsure of how to calculate potential emissions then refer to the instructions from the DNR’s 1993 Emissions Inventory Questionnaire, the Title V Operating Permit application package or call the Iowa Air Emissions Assistance Program at 319/273-2079.

If potential emissions for each criteria pollutant totals less than 100 tons per year then the facility is not a major source. Go to step 8.

If potential emissions for any criteria pollutant totals more than 100 tons per year then the facility is a major source. Go to step 3.

6. NSPS requirements

Both “Grain Terminal Elevators” and “Grain Storage Elevator” subject to NSPS must do the following for each process emission (except grain dryers):

- a. meet the particulate matter emission standard of 0.023 grains per dry standard cubic meter, and
- b. meet the opacity standard depending on the specific processes involved.

7. The facility is NOT subject to NSPS

For facilities not subject to NSPS, construction permits are not needed for fugitive emission sources. Go to step 8.

8. The facility is not a major source based on potential emissions from step 2.

Neither a Voluntary Operating Permit nor an Operating Permit need to be completed.

Records should be maintained which document potential emissions calculations from step 2.

If you need any further assistance call the Iowa Air Emissions Assistance Program at (319) 273-2079.

Appendix C

Daily Sprayable Material Consumption Record

PLEASE NOTE THE FOLLOWING
Duplicate this sheet before using

1. This sheet is designed for facilities subject to permit-by-rule record keeping requirements. It can also be used to track Construction or Voluntary Operating Permit consumption limitations.
2. Records must be maintained daily.
3. 'Amount Sprayed' includes all sprayable materials (i.e. paint, thinner, lacquer, glue, etc.).
4. 'Amount Sprayed' should be reported in gallons.
5. This sheet must be kept for eighteen months after it is completed.
6. To be in compliance with the 'permit by rule,' make sure the facility never sprays more than three gallons per day. If facility consumption exceeds the stipulated limit for any given day further permitting is required.
7. Each operator may keep his or her own consumption record sheet. However, they must be totaled daily to determine facility wide consumption.

KEEP EACH MONTH ON FILE FOR 18 MONTHS

MONTH _____

Appendix C

Date of Entry	Amount Sprayed (gallons)	Monthly Consumption to date (gallons)	Initials
1			
2			
3			
4			
5			
6			
7			
8			
8			
10			
11			
12			
13			
14			
15			
16			

Date of Entry	Amount Sprayed (gallons)	Monthly Consumption to date (gallons)	Initials
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
Monthly Total:			

Appendix D

IAEAP DryOP Questionnaire

Complete to receive an emissions estimation worksheet for your facility.

The following information is required to estimate emissions from your facility. No persons, parties, entities or organizations outside of the Iowa DNR will be routinely provided this information. For additional assistance please contact the Iowa Air Emissions Assistance Program (IAEAP) at 319/273-2079.

- ✍ Be sure to fill in all blanks.
- ✍ Questionnaires with blank spaces cannot be processed.
- ✍ If a question does not apply to you write N/A in the blank.
- ✍ If you do not know the answer to a question, make your best estimate.
- ✍ Your application will only be as accurate as the information provided.
- ✍ Be sure to complete and return the enclosed Request for assistance-client waiver form. This questionnaire cannot be processed without one.

A. GENERAL INFORMATION

1. Company name: _____
2. Contact person: _____
3. Telephone number: _____
4. EIQ Number: _____

B. PERC SOLVENT USERS

1. Amount of Perchloroethylene purchased or consumed (gal) in the last 12 months: _____
2. Amount of Hazardous Waste shipped out in pounds _____

This is the amount of hazardous waste recovered and shipped from your facility, commonly found in the facility's Hazardous Waste Manifests, which should be kept on file by all facilities generating hazardous waste.

3. Estimate the number of loads put through in the last 12 months: _____
4. Estimate the average time (hrs) required to clean each load: _____
5. From what year are these estimates taken: _____

- 6. Actual operating schedule of the perc equipment
 - Number of hours per day the equipment is in operation: _____
 - Number of days per week the equipment is in operation: _____
 - Number of weeks per year the equipment is in operation: _____
- 7. Date (i.e., Dec. 5, 1975) in which perc equipment was installed or modification: _____
- 8. Do you have a carbon (adsorber) filter or charcoal filter (circle one) YES or NO

C. PETROLEUM SOLVENT USERS

- 1. Amount of petroleum solvent purchased in past 12 months: _____
- 2. Amount of hazardous waste shipped out in pounds: _____
- 3. Estimate the average time (hrs) required to clean each load: _____
- 4. Number of loads cleaned in the past twelve months: _____
- 5. Actual operating schedule of the petroleum equipment
 - Number of hours per day the equipment is in operation: _____
 - Number of days per week the equipment is in operation: _____
 - Number of weeks per year the equipment is in operation: _____
- 6. Manufacturer's rated capacity (lbs.) of the dryer: _____
- 7. Date (i.e., Dec. 5, 1975) in which dryer was installed or modification: _____

D. VALCLENER/GENESOLVR USERS

- 1. Amount of VALCLENER/GENESOLVR solvent purchased in past 12 months: _____
- 2. Amount of hazardous waste shipped out in pounds: _____
- 3. Estimate the average time (hrs) required to clean each load: _____
- 4. Number of loads cleaned in the past twelve months: _____
- 5. Actual operating schedule of the equipment
 - Number of hours per day the equipment is in operation: _____
 - Number of days per week the equipment is in operation: _____
 - Number of weeks per year the equipment is in operation: _____

E. FURNACE/BOILER/SPACE HEATER/COMBUSTION EQUIPMENT

Complete either number 1 or 2, depending upon the type of combustion fuel used.

- 1. For natural gas: What is the manufacturer’s rated maximum (MRM) capacity (commonly in thousand BTU/hr, listed on the manufacturer’s name plate) and the actual gas consumption (in cubic feet per year or therms, from the utility bill).

Equipment Name and Model	MRM capacity	Actual consumption
a _____		
b _____		
c _____		

- 2. For fuel oil/diesel/LPG: What is the manufacturer’s rated maximum (MRM) capacity (commonly in thousand gallon/hr, listed on the manufacturer’s name plate) and the actual consumption (in gallon per year, from the purchase records).

Equipment Name and Model	MRM capacity	Actual consumption
a _____		
b _____		
c _____		

- 3. Actual operating schedule for combustion equipment

Number of hours per day the equipment is in operation: _____

Number of days per week the equipment is in operation: _____

Number of weeks per year the equipment is in operation: _____

Appendix E

Facility Specific Site Self Audit Follow-up Checklist

The purpose of this checklist is to assist ABC Manufacturing in determining the facility’s compliance status with the state and federal air emissions related regulations. Please make sufficient copies and use them periodically. If you have any further questions, please contact the Iowa Air Emissions Assistance Program (IAEAP) at (319) 273-2079.

A. COMPLIANCE WITH CONSTRUCTION PERMIT FOR THE SPRAY BOOTH

- 1. Does the facility have an approved construction permit for the spray booth? YES / NO

- 2. If the answer to question 1 is “YES”, has the facility made any significant modifications or alterations to the existing spray booth after the approval of the construction permit? YES / NO

For instance, shifting the location to a new area or raising the stack or new filters.

- 3. If the answer to question 2 is “YES”, has the facility applied for a modification to the existing construction permit? YES / NO

- 4. Does the facility meet the 7401 gallons of sprayable mixture per year restriction on the construction permit? YES / NO

- 5. Does the facility maintain records of monthly and yearly paint material consumption to show compliance with the permit limit of 7401 gallons of sprayable mixture per year? YES / NO

If you answered “NO” to questions 1, 3, 4 or 5, you may be out of compliance with the state regulatory agency’s requirement for a construction permit. Please contact the IAEAP for further assistance.

B. COMPLIANCE WITH VOLUNTARY OPERATING PERMIT APPLICATION

- 1. Has the facility completed and sent a voluntary permit application to the state regulatory agency? YES / NO

- 2. If “YES”, does the facility have an approved voluntary permit? YES / NO

- 3. If “YES”, have any emission sources been added or modified since the application was completed? YES / NO

If “NO” to questions 1, 2 or 3, please contact the IAEAP for further assistance.

Appendix E

C. NEW EMISSION SOURCES

- 1. Has the facility added or eliminated any new emission source (s) since the last IAEAP staff visit to the facility or the last self evaluation? YES / NO
- 2. If “YES” has the facility updated its emission inventory? YES / NO

If “NO” to question 2, please contact the IAEAP for further assistance.

D. POLLUTION PREVENTION OPTIONS

Listed below are a few pollution prevention options available for the facility in reducing air emissions. These recommendations are optional and by no means required by the facility at this junction. If the facility is interested in looking into any of the pollution prevention strategies, please contact IAEAP for further assistance.

- 1. Consider spray paint emission reduction training
- 2. Consider use of water based low - VOC based paints or powdered coatings in place of high VOC solvent based paints

Appendix F

Supplier and Vendor List

Companies Providing Particulate Emissions Control Equipment

Air Quality Engineering
 3340 Winpark Drive
 Minneapolis, MN 55427
 612/544-4426
 Jim Pinkowski

Monroe Environmental Corporation
 11 Port Avenue
 PO Box 806
 Monroe, MI 48161
 313/242-7654

Donaldson Company Inc.
 Joint/Day Division
 256 South Soagaetaha, Suite 101A
 Galesburg, IL 61401
 309/343-3041

O'Hara Company
 202 West Winds at 1454 30th
 West Des Moines, IA 50265
 515/223-6047

Flex-Kleen
 One Northwestern Center
 165 North Canal Street
 Chicago, IL 60606
 312/648-5300

Polaris Industrial Ventilation, Inc.
 8478 M-119
 PO Box 287
 Harbor Springs, MI 49740
 616/348-5800

KCH Services, Inc.
 PO Box 1287
 Forest City, NC 28043
 704/245-9836

Tri-mer Corporation
 1400 Monroe Street
 PO Box 730
 Owosso, MI 48867
 517/723-7838

Met Pro Corporation
 Duall Division
 1550 Industrial Drive
 Owosso, MI 48867
 517/725-8184

This list IS NOT AN ENDORSEMENT OR WARRANTY by/from the Iowa Waste Reduction Center relating to any company or product. Businesses should determine that any company or product they use complies with all applicable environmental laws.

Appendix G

Iowa Air Emissions Assistance Program Iowa Waste Reduction Center University of Northern Iowa Request for Assistance- Client Waiver

This form must be signed by the owner or responsible company official working at the location of the facility receiving IWRC assistance. Even if an agent has been designated to fill out this form, the owner or responsible officer must sign it.

The undersigned requests technical air emissions assistance from the Iowa Air Emissions Assistance Program (IAEAP). It is understood that such assistance will be provided free of charge and that there is no obligation to reimburse IWRC or its staff for providing such assistance.

Employees of the IWRC may not recommend the purchase of goods or services from sources in which they have an interest or accept fees or commissions from third parties who have supplied goods or services on their recommendation.

Upon request, the IWRC staff will be provided operating data and such other information as may be reasonably requested during the period of service.

In consideration of this technical air emissions assistance, provided without cost, the undersigned waives all claims against the University, State or its employees arising out of the performance of this request agreement. Furthermore, undersigned agrees to indemnify, defend, and hold harmless the state of Iowa, the University of Northern Iowa and their employees from and against any and all actions or causes of action, claims, demands, liabilities, loss, damage, injury, cost or expense of whatever kind or nature, for injuries to or the death of any person or persons, or damage to or loss of property alleged or claimed to have been caused by, or to have arisen out of or in connection with this request agreement.

The information below and any subsequent data to be provided are for the purpose of evaluating a request for assistance.

No party, person, entity or organization outside of the Department of Natural Resources (DNR) will be routinely provided this information.

I certify that I have examined the information provided by this company and to the best of my knowledge it is true and complete.

Name of Organization _____

Requesting Assistance _____ Telephone _____

Fax _____

Number of Employees _____

Organization's Representative(s) _____

Title(s) _____

Street Address _____ City _____ State _____ Zip _____ County _____

Signature: _____ Date: _____
(Company representative)

1 Purpose of the Air Audit

Air Pollution Inc. (APC) in Anywhere was visited on November 3, 1994 by staff of the Iowa Air Emissions Assistance Program (IAEAP). APC manufactures pontoon boats. The purpose of the audit was to review APC's air emission sources, determine regulatory status as applicable to the Clean Air Act, and recommend measures/steps necessary to maintain regulatory compliance and reduce air emissions, if possible. Mr. John Smith provided a site tour and information concerning air emission sources at APC's. This report will address only air emissions at the facility.

The report addresses the following air emission sources and regulatory issues:

- Foaming operation
- Contact adhesion (sprayed)
- Acid wash
- Natural gas fired boiler
- Welding operation

2 Definitions/Terms

The following terms are explained to facilitate understanding of the regulatory requirements:

a Fugitive Emissions

Fugitive emissions are those which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Fugitive emissions eventually get out of the building through doors, windows or roof vents. Leaks from equipments/vents, solvent cleaning without a vent, grain loading/unloading, welding fumes etc. may be considered as fugitive emissions.

b Air Pollutant

Two groups of air pollutants are involved. These are criteria air pollutants and Hazardous Air Pollutants (HAP). The criteria pollutants include sulfur oxides (SO_x), nitrogen oxides (NO_x), total suspended particulates (TSP), particulate matter (PM₁₀), carbon monoxide (CO), volatile organic compounds (VOCs), and lead. The HAPs, of which there are 189, are also known as air toxics. Some of the listed 189 air toxics are also criteria pollutants. Examples such as benzene and toluene are both air toxics and volatile organic compounds (VOCs).

c Emission Point

An air emission point or source, is any equipment or process that emits any regulated air contaminants, such as a spray paint booth, bake oven, sand blasting operation, etc. A process includes all industrial and commercial operations. It may include used in manufacturing, material loading/unloading, fuel combustion, and any cleanup of equipment or materials.

d Control Equipment

Control equipment means any equipment that prevents or reduces emissions of one or more air pollutant(s) to the atmosphere from an emission point. Examples of control equipments are spray booth filters, baghouse, scrubbers etc.

e Actual and Potential emissions

Actual Emissions - This is the amount of emissions emitted based on the true operating hours, actual operating capacity of equipment or process, and actual material consumption. Air pollution control equipment should be taken into account while estimating the actual emissions.

Potential Emissions - This is the amount of emissions that could be emitted if the equipment/process were operated continuously at maximum capacity for one year (8760 hours); not how much it actually does emit. Potential emissions should be calculated taking into account any air pollution control equipment that might be used in the process. For example, in the case of spray painting, the transfer efficiency and the air pollution control equipment efficiency (paint mist exhaust filter pads) should be taken into account when calculating potential emissions. It should be understood that potential emissions has nothing to do with actual emission or frequency of equipment use.

f Emission Factors/Estimates

An Emission Factor is used to determine the quantity of a pollutant emitted from a source. It could be a formula or just a number. For example, suppose that for every 100 pounds of paint sprayed there were 70 pounds of volatile emissions and 5 pounds of paint dust emissions. The emission factors for this spraying operation are 70 pounds of volatiles and 5 pounds of particulates per 100 pounds of paint sprayed. Emission factors are available from several sources.

3 General Regulatory Review

Your facility is/may be subjected to following permit requirements and regulations:

Construction Permits

Iowa Department of Natural Resources (DNR) administers the air emissions permitting program for new or existing stationary sources of air pollutants. The DNR’s permit to install or alter equipment or control equipment for new stationary sources and modifications of existing stationary sources is also known as a ‘construction permit’. This permit is required for each air emissions source to the outside atmosphere regardless of equipment size, facility size, and frequency of operation. Equipment installed prior to September 23, 1970, provided no major modifications have been completed, are exempt. Facilities should apply for a construction permit before installing/constructing an air emission source. However, facilities operating without a construction permit should use the same application form to apply for the permit for an ‘as built’ source. An approved construction permit is good forever unless the source is modified or there is a process change effecting air emissions.

There is no fee associated with construction permit application. General permit requirements include unrestricted vertical exhaust and discharge at a reasonable height above the building roof line. Depending on emission level, geographic location, and stack dimensions some sources may be asked to meet additional requirements like computer modeling, increased stack height, greater air flow, stack testing etc.

Emission Inventory

A facility emission inventory is an estimate of emissions from all sources of air pollutant within the facility. All sources including fugitive sources, and unpermitted sources should be included in the inventory. An emission inventory must indicate actual and potential emissions from the facility as well

as the individual emission sources. Generally, estimation of actual and potential emissions will be based on maximum design capacity, annual throughput, and specific emission factors for each emission source. Emission inventory should also show separately emissions of criteria pollutants and each individual air toxic, if applicable.

It is necessary to do a facility wide emission inventory to determine what state and federal air regulations are applicable. For example, an emission inventory will indicate whether a source is major or not, as defined in the Title-V of the Clean Air Act Amendments (CAAA). Some major sources may qualify for a less restrictive voluntary permit category, if facility's actual emissions are less than threshold amount, and restrictions are used to limit potential emissions below the threshold limits.

The DNR estimated emissions in the state through an emissions inventory conducted in 1993. Businesses which completed their emission inventory in 1993 can use the same information to generate an updated emission inventory. Other facilities should establish and document an emission inventory to determine further regulatory requirements and also to demonstrate compliance.

Operating Permit

Under the 1990 Clean Air Act Amendments (CAAA), all major sources of air pollutants will be required to apply for an operating permit by November 15, 1994. The Iowa Department of Natural Resources (DNR) estimated emissions in the state through the emissions inventory conducted last year and has sent operating permit applications to selected businesses. It is necessary to do a facility wide emission inventory to determine whether a source is major or not, as defined in Title V of the CAAA. Some major sources may qualify for a less restrictive voluntary permit category, if facility's actual emissions are less than threshold amount, and restrictions are used to limit potential emissions below the threshold limits.

Title V operating permit will require certification by the facility that they comply with all other applicable state and federal air emissions regulations. For major sources applying for Title V permit, an annual fee will be assessed based on actual emissions. Facilities qualifying for a voluntary permit will not be subjected to any fees and the application deadline is March 1, 1995.

4 Existing Conditions

An air quality assessment was done by Air Pollution Inc.'s insurance company; results are pending.

✱ Foaming operation

Foam is needed in the hull to provide strength, a smoother ride, and act as floatation material in case of accidental leakage. The polyurethane foam is formed as a result of a chemical reaction (polymerization) between two separate chemical compounds. Both the compounds are supplied from 2 separate pressurized tanks to the spray gun. The polymerization reaction is complete within 2 minutes of spraying. Although both the chemical compounds are volatile, the reaction product (i.e., foam) is non volatile. The foaming operation does not have a dedicated exhaust or vent, so emissions from this operation may be considered fugitive.

✱ Contact adhesion (sprayed)

This is used to attach carpet to the deck plywood. The adhesive ('Whisper spray', 68% volatiles) is sprayed on, and the MSDS sheet indicates that the adhesive contain methylene chloride. Adhesive spray is done in a designated area without any particular exhaust or stack.

✧ Acid wash

A power wash is used in a wash booth to remove welding smudge, and grease from the hulls. Wash solution is mainly water with a very small amount of hydrogen fluoride added. The percentage of hydrogen fluoride in water was not determined at the time of the visit.

✧ Natural gas fired boiler

Air Pollution Inc. has 1 natural gas fired boiler with maximum input capacity of 6.2 million BTU per hour. This is used for steam generation, water heating, and space heating.

✧ Welding operation

Welding is done in an approximately 200' x 50' area within the facility. There are no dedicated exhausts for welding, but there are 8 glass windows on the side of the building which are kept open during welding. Welding is done about 6 hours a day, 5 days a week, and APC consumes on an average 35 pounds of wire and 25 pounds of filler rod per week.

5 Recommendations

✧ Foaming operation

Air Pollution Inc.'s 1993 EIQ estimated emissions from the foaming operations without taking into account the reaction taking place within 2 minute of spraying. The potential toxic emission was estimated at 900 tons per year from the foaming operations. As discussed during the visit the emissions should be re-estimated on the basis of suppliers information and the formation of reaction product. Emissions from this may be considered fugitive eliminating the need to apply for a construction permit, but emissions from foaming should be included in the facility emission inventory.

If the recalculated emissions from the foaming operation shows potential emissions of more than 10 tons per year then APC will have to apply for a voluntary permit.

If the recalculated emissions from the foaming operations shows potential emissions of less than 10 tons per year then APC will be exempt from operating permit requirements.

✧ Contact adhesion (sprayed)

Emissions from this operations may be considered fugitive. No construction permit will be needed at this time but emissions should be included in the facility emission inventory.

It is recommended that APC explore the possibility of using alternative adhesive material, since the current adhesive contains more than 60% methylene chloride, a highly toxic material.

✧ Acid wash

Since hydrogen fluoride is not a criteria pollutant, no construction permit is needed. Emissions should be reported as toxic in the emissions inventory.

* Natural gas fired boiler

The natural gas fired boiler with maximum input capacity of 6.2 million BTU per hour is exempted from construction permit requirements. Emissions from this boiler should be included in the facility emission inventory. It was not included in the EIQ done in 1993.

* Welding operation

Welding emissions were not included in 1993 EIQ, and should be included in the facility emission inventory. It is also recommended that APC apply for a construction permit for their entire welding operation, although the emissions are not directly vented out.

6 IAEAP Services

IAEAP can further assist APC in estimating emissions from the foaming and welding operations, and will review construction permit application before sending to DNR. Please complete the enclosed questionnaire form, if you want further assistance from IAEAP. A completed construction permit may take 1-2 week(s) for the IAEAP review.

Appendix I

Case Study of ABC Trailers*

Background

ABC Trailers is an independent trailer manufacturer and repair facility in Iowa. Major production activities include metal fabrication and painting. ABC Trailers employs sixty.

Audit and air emissions review

ABC Trailers approached Iowa Air Emissions Assistance Program (IAEAP) in February, 1993. They sought assistance in determining regulatory requirements for air emissions. After reviewing air emissions at their facility, The IAEAP determined that ABC Trailers was out of compliance with state construction permit (New Source Review) requirements for the two spray booths. Necessary information was collected to complete an emissions estimate for use in the construction permit application.

At the time of initial IAEAP review ABC Trailers was using solvent-based paint material. Hazardous waste generated from the painting operation alone was approximately 220 gallons per month, which incurred a disposal cost of about \$2,000 per month.

Audit follow-up and technical assistance

After completing the initial audit and air emissions review, the IAEAP assisted ABC Trailers in compiling a construction permit application. The application was subsequently approved by the state Department of Natural Resources. Potential emissions of Volatile Organic Compounds (VOC) from the spray painting operation were estimated at 239 tons per year.

The IAEAP noted that under the Clean Air Act Amendments of 1990 this would classify ABC Trailers as a major stationary source. Based on this consideration, the IAEAP recommended that ABC Trailers consider switching to a powder-based coating system. The IAEAP explained in detail how replacement of the conventional solvent-based system with an appropriate powder-based system will substantially decrease potential VOC emissions. Through this decrease, ABC will be reclassified as a non-major source, and their regulatory burden from air emissions will be significantly reduced. Secondly, the switch will reduce hazardous waste generation and associated disposal costs. The IAEAP provided ABC Trailers a list of suppliers of alternate coating systems and assisted in evaluating and qualifying appropriate systems. ABC Trailers also received assistance in testing procedures, characterization, and disposal of solid wastes.

Results and conclusion

ABC Trailers contacted suppliers of alternative coating systems, evaluated a number of options, and switched to powder coating in June, 1994. The paint booth filters were replaced, and new coating application equipment and accessories were bought at an estimated cost of about \$50,000. All outdoor paint booth exhausts were eliminated with the installation of an indoor recirculating air system. The existing bake oven continued to be operational with the new powder coating system. However, it was necessary to increase the drying temperature. ABC Trailers considers their product quality to have improved with the new system. It went from “very good” to “excellent”. The cost of paint material per trailer made also went down.

***Client of the Iowa Air Emissions Assistance Program**

Case Study of ABC Trailers,* con't

VOC emissions were reduced to near zero with the new powder coating system. Since this reduction reclassified ABC trailers a non-major source, they are no longer required to meet Title V Operating Permit requirements. Wastes generated from the powder coating system were tested and shown to be non-hazardous wastes. This eliminated hazardous waste generation from the coating operation and the associated disposal cost of about \$2,000 per month. By removing outdoor exhausts from the paint booth, with the recirculating system, ABC Trailers also eliminated the need for a construction permit and they reduced building space heating cost in the winter time.

Appendix I

*Client of the Iowa Air Emissions Assistance Program

REFERENCES

- 1 Guidelines for implementation of section 507 of the 1990 Clean Air Act Amendments, Final Guidelines, January 1992.
- 2 EPA environmental audit policy, (FR vol 51, No. 131, July 9, 1986, pg. 25006).
- 3 EPA pollution prevention opportunity assessment (PPOA) guidelines, EPA/600/A-93/280, Bridges.
- 4 Multi-media investigation manual, National Enforcement Investigations Center (NEIC), EPA-330/9-89-003-R.
- 5 Environmental self-audit for small businesses, New York State Environmental Ombudsman, contact 800/782-8369 for a free copy.
- 6 Contrasting approaches to pollution prevention auditing, Robert Pojasek and Lawrence Cali; Pollution Prevention Review, Summer 1991.
- 7 For pollution prevention: be descriptive not prescriptive, Robert Pojasek, Chemical Engineering, September 1991.
- 8 Enforcement response policy for treatment of information obtained through Clean Air Act Section 507 Small Business Assistance Programs, issued August 12, 1995, EPA's Office of Enforcement and Compliance Assurance (OECA).
- 9 Policy on environmental self-auditing and self disclosure, issued March 30, 1995, EPA's Office of Enforcement and Compliance Assurance (OECA).
- 10 Interim policy on compliance incentives for small businesses, issued June 14, 1995, EPA's Office of Enforcement and Compliance.

Funded by a grant from the Environmental Protection Agency Office of the Small Business Ombudsman