♻EPA A Guidebook for Explaining Environmental Regulations to Small Businesses

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A Guidebook for Explaining Environmental Regulations to Small Businesses

CONTROL TECHNOLOGY CENTER

Sponsored by

Emission Standards Division
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

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Research Triangle Park, NC 27711

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DISCLAIMER

This report has been reviewed by the Control Technology Center (CTC) established by the Office of Research and Development (ORD) and Office of Air Quality Planning and Standards (OAQPS) of the U.S. Environmental Protection Agency (EPA), and has been approved for publication. Approval does not signify that the comments necessarily reflect the views and policies of the EPA, nor does mention of trade names, organization names, or commercial products constitute endorsement or recommendation for use.

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PREFACE

This project was funded by EPA's Control Technology Center (CTC) and prepared by VíGYAN Incorporated.

The CTC was established by EPA's Office of Research and Development (ORD) and Office of Air Quality Planning and Standards (OAQPS) to provide technical assistance to State and local air pollution control agencies. Several levels of assistance are provided by the CTC. First, a CTC Hotline is available to provide telephone assistance on matters relating to air pollution control technologies. Second, more in-depth engineering assistance is provided when appropriate. Third, the CTC can provide technical guidance by designing technical guidance documents, developing personal computer software, and presenting workshops on control technology matters. The CTC is also the focal point of the Federal Small Business Assistance Program, and maintains the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate (RACT/BACT/LAER) Clearinghouse and Global Greenhouse Gases Technology Transfer Center. Information concerning all CTC products and services can be accessed through the CTC Bulletin Board System (BBS), which is part of the OAQPS Technology Transfer Network (TTN) bulletin board system.

This publication was prepared in support of the Federal Small Business Assistance Program. One main pro-active function of the Small Business program will be to provide materials to explain new standards and rules to small businesses. This document presents guidelines on how to prepare materials that explain technical information in layman's terms.

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OVERVIEW

The purpose of this guidebook is to give you, the writer of materials that explain environmental regulations to small businesses, ideas on how to effectively prepare such documents. These materials will help "enable" the small business to comply with applicable requirements. Therefore, throughout the remainder of this guidebook, we will refer to such materials as small business enabling documents.

As you are aware, many small business owners are non-technical people, with little engineering expertise and a general aversion to regulations. Some of this aversion stems from an inability to sort through the technical and legal phraseology that is inherent in regulations, permits, technical guidance documents, etc. The objective of your enabling documents, therefore, is to present technical and legal information in an easy-to-understand manner. In other words, your goal is to "translate" from a techno-legal collection of "thou shalts" and "thou shalt nots," to a down-to-earth document that the small business person will not only comprehend, but will actually want to read. As you read through the pages of this guide book, you will come across ideas that we hope will make your job easier.

The first section of this guidance document presents issues relevant to small businesses. It begins with a discussion of small business concerns (in which we outline the most commonly asked questions, and discuss small business' frequent lack of understanding of what is required of them). Other issues covered in this section are small business' perceptions of government and regulations, and the problems of writing for different educational levels and non-English speaking audiences.

WHAT'S IN THIS DOCUMENT

A discussion of issues such as:

☞ small business concerns

☞ small business perceptions of government & regulations

☞ writing for different educational levels and non-English speaking audiences

Ideas for preparing an enabling document:

☞ content & format

☞ style

☞ using communication "tools"

☞ presentation options

A checklist to help you prepare enabling documents

An example of how a calculation may be simplified

The second section of this guidance document highlights specific areas that you will need to address when you prepare an enabling document, and introduces some ideas that you may find useful while dealing with these issues. The four areas you will be faced with are content and format, style, the use of communication "tools," and presentation options.

Throughout this guidance document we have included actual examples of materials being produced by various agencies across the country in their efforts to assist small business people. These materials are meant primarily to illustrate the points we are making in this guidance document; as such their inclusion is not meant to imply that you necessarily use exactly the same ideas. Feel free to alter these ideas if by doing so you will enhance the quality of your enabling document. Be creative: this book presents ideas and concepts in a general fashion; it's up to you to work with these ideas and expand them, to produce an enabling document that is easy (and perhaps even enjoyable) to read.

Appendix A of this guidance document contains a checklist that you can use to help you prepare your enabling documents. It captures the main points that are discussed in this guidance document, and offers them to you in a concise format. Note that it is simply an outline of some the things you need to be thinking about when you prepare your enabling document. It is not an exhaustive description of everything you need to do.

In Appendix B we provide an example that demonstrates how formulae and calculations may be simplified or explained for the small business person.

Your enabling document must tell the reader what he or she is expected to do in response to an agency initiative (such as a regulation, a permit program, or a technical guidance effort). At the same time it must anticipate the concerns, questions, and perhaps misconceptions that the reader may have. All of this must be done in a way that makes your document readable and understandable. It is, therefore, important for you to be aware of the nature of such issues. This section will provide insights into these issues, thereby allowing you to address them more effectively.

1.   Small Business Concerns

Put yourself in the shoes of a small business person running, say, a degreasing operation. You hear about this new set of Federal regulations. You are not among the 20 percent or so of small businesses belonging to a trade association, and are therefore typically not aware of new regulations and other environmental initiatives in advance. Neither are you a member of a local Chamber of Commerce, which often receives information from the State Chamber of Commerce for distribution to members. Thus, once more, you miss this information.

How do you react? Probably with a flurry of questions: "Does this regulation apply to me? What will I be required to do to comply? How much time do I have to comply?" Then you get your hands on a copy of the regulations. Again you have questions: "Do I really understand what is being said in this Federal Register notice? Which part of this regulation am I covered under? Who do I call to get clarification?"

> **FREQUENTLY ASKED QUESTIONS**
>
> ☞   What part of this agency initiative applies to me?
>
> ☞   What will I be required to do to comply?
>
> ☞   By when do I need to comply?
>
> ☞   From whom can I seek clarification?
>
> ☞   How will I benefit by complying?

Pretty soon you are probably in over your head trying to comprehend terminology you are not familiar with. You wonder how you will benefit if you comply or what will happen to you if you don't comply. You try to figure out how much it is going to cost you and how it will affect your competitiveness. You ask yourself where you will get the technical assistance to enable you to comply. You scan the notice to determine how this new regulatory initiative is different from other State or local regulations to which you are already subject. On top of everything, the information is couched in language that you're afraid you'll need a lawyer to decipher.

The preceding scenario is fairly common in small business circles. What the small business person needs is a document that answers those questions in a manner that is easy to read and understand. Therefore, your enabling document must address such concerns; whenever possible it must do so in a way that is comprehensive, yet direct and to the point.

2. Small Business Perceptions of Government and Regulations

Small business people typically do not fully understand the roles of the different levels of government regulations (e.g., local, State, Federal). Sometimes, they may not even be aware that they fall within the jurisdiction of particular agencies, or that they need to comply with certain regulatory requirements. At other times, they perceive that they are being subjected to duplicative requirements at different levels of government. And yet again, they may believe that some of the requirements are contradictory to each other. They may wonder, "I don't understand why, when my business is so small, government has to pick on me. Government should go after the big polluters." All of these concerns emerge from a platform of constantly changing regulations covering various environmental media.

One way to address these issues is simply to state in the enabling document that there may be requirements from other agencies that the reader may need to comply with: The reader is urged to independently determine what those requirements may be, possibly through their State's Small Business Assistance Program or local environmental agency. Enabling documents may include a message alerting businesses to the possibility that seeming duplications in requirements may exist, and that the business must seek clarification if duplications are perceived. In addition, the enabling document ought to contain a clarification that although several regulations may apply to the business, the agency responsible for producing the enabling document may only be able to answer questions about its own initiative. Your document may give a brief background addressing why the small business is being covered in the regulations, by stating, for example, that EPA has completed environmental studies which reveal that combined emissions from small industries exceed those from large industry.

With the establishment of small business assistance programs, such concerns by small business people will, to some extent be alleviated. Presumably more and more small business concerns will be addressed in the regulatory development process. Through public meetings and representative organizations, small businesses can voice their concerns, thereby indirectly contributing to the development of an enabling document.

3. Writing for Different Reading Levels

Writers of technical or legal documents sometimes take the educational levels of the target audience for granted. The experience of some agencies providing assistance to the country's small businesses suggests that the educational levels of small business people vary from industry to industry. You need to be aware of the range in educational levels of the people you are writing for; the lower the level, the simpler must be the language you use. Regardless of the level, however, you must strive to be direct and concise. (More on this in the next section.)

Another related issue is that there are numerous owners of small businesses who, perhaps because of their ethnic origins, may not be very familiar with the English language. For example, there appears to be a sizeable number of small dry cleaners in the Los Angeles area who are of Korean origin and who speak little English. The same is probably true of businesses run by people of other ethnic backgrounds (e.g., Hispanic, Chinese). To some extent, effective communication with such groups (short of providing enabling documents translated in their respective languages) requires a similar treatment as communicating with people with lower educational levels. Avoiding complex terminology, and keeping the writing style simple and concise is particularly important.

Illustrations are powerful communication tools regardless of the reader's educational level or ethnic background. However, the lower the educational level of the reader, and the more ethnically diverse the target audience, the more illustrations become crucial to effective communication. Thus, when preparing an enabling document for groups with low educational levels (e.g., grade school) or multi-ethnic backgrounds, you should consider extensive use of illustrations.

SECTION II.

GUIDELINES FOR PREPARING AN ENABLING DOCUMENT

In this section you'll read about the various elements that go into an effort to prepare a small business enabling document. We'll give you some ideas on how you can incorporate these elements into your own enabling document, and we'll illustrate these ideas with examples from actual enabling documents prepared by different agencies. Remember that what you read in this section are only guidelines; these guidelines are not meant to be a set of rigid rules, and they are certainly not meant to stifle your creativity in any way.

There are four areas that you should address while developing an enabling document:

- content;
- style;
- the use of communication "tools"; and
- presentation options.

A discussion of these areas, along with specific ideas for addressing them, are presented below.

I. Content & Format

When you prepare an enabling document your first concern, naturally, is with the "translation" of technical and legal information. However, there are other aspects of document content and format that you also need to address. In this segment, we will discuss those other aspects, and provide suggestions for addressing them.

a. Prepare an Overview

As a writer of small business enabling documents, you are often required to meet dual, and sometimes conflicting, objectives. On the one hand, you need to keep your document brief and easy to read; on the other hand, your document needs to be comprehensive and provide all the necessary information. These objectives may be fulfilled by producing a document containing two different sections.

The first section is a fact sheet that is broad in coverage, yet no more than one or two pages long. This section provides an overview of the agency's initiative; here, at the

beginning of the document, the objectives of the initiative should be clearly stated. In this overview, you should state who is affected, what the affected entity must do to comply with the requirements, how compliance may be achieved and demonstrated (if applicable), and any timetables for compliance. The overview will contain enough information to allow a small business to figure out if the agency initiative applies to them. Beyond that, the business is encouraged to review the second section of the enabling document, which describes the initiative at length.

Exhibit A shows a stand-alone summary that presents a good overview of EPCRA (SARA Title III, Section 313).

b.   Use a Question & Answer Format

In an effort to be direct and to the point, you need to identify the questions most frequently asked by affected small businesses, and answer them. (Some of the

CONTENT & FORMAT
☞   Provide an overview
☞   Present the most asked questions, and answers to them
☞   State that there may be requirements by other agencies
☞   Provide table of content for longer documents
☞   Include a disclaimer
☞   Include contact phone numbers and addresses

typical types of questions were discussed in Section I of this guidance document.) These questions and answers may be put into a separate section in your document; alternatively, they may be incorporated into both, the overview, as well as the detailed section. In either case they may be highlighted to draw attention to them (refer to "Using Communication Tools," later in this section).

Exhibits A and B demonstrate the question and answer approach.

c.   Provide a Disclaimer

The enabling document is not a legally binding document, and is not meant to replace any other legal document (such as regulations, permits, etc.). Moreover, the enabling document may emphasize specific aspects of a regulation (based on the industry's need for detailed information on those aspects), and may not cover all parts of the regulation. To avoid any misunderstanding on the part of the reader, you must make it clear that the enabling document is simply a clarification of the appropriate legal document, and that the final authority rests solely in the legal document. You may do this with a disclaimer at the beginning of your enabling document.

Toxic Chemical Release Reporting

Title III, Section 313: Emergency Planning and Community Right-to-Know Act

Tech Guide No. 3 Published by the Environmental Science and Technology Laboratory of Georgia Tech Research Institute 1988

Do I have to report? Yes! If...

❑ Your facility has ten or more full-time employees (or full-time equivalents); *and*

❑ Your facility has operations in Standard Industrial Classification (SIC) Codes 20-39; *and*

❑ Your facility used more than 10,000 pounds of any Toxic Chemical during the previous calendar year; *and/or*

❑ Your facility imported, manufactured, or processed more than 50,000 pounds of any Toxic Chemical during 1988 (or 25,000 pounds in 1989).

How do I begin?

❑ Obtain a copy of the Toxic Chemical Release Inventory Reporting Form R, Instructions, and Title III Section 313 Toxic Chemical List by calling the EPA Hotline at **1-800-535-0202**.

❑ Compare your facility's chemical inventory with the Title III Section 313 Toxic Chemical List and reporting thresholds.

What do I report?

You must submit a separate **EPA Form R** for each listed Toxic Chemical at your facility. The reports include:

- Facility name, location, and principal business activity
- Certification of accuracy and completeness
- Whether the chemical is manufactured, processed, or otherwise used
- An estimate of the maximum amounts present at any time
- The treatment or disposal method for each waste stream
- Annual quantity of each toxic chemical entering each environmental medium

> The Emergency Planning and Community Right-to Know Act is intended to encourage and support emergency planning efforts at the state and local level and provide citizens and local agencies with information concerning potential chemical hazards in their communities. In order to meet these goals, Title III provides for an annual inventory of hazardous chemical releases to the environment.

When do I report and to whom?

Owners and operators must submit the report for any calendar year on or before July 1 of the following year, to

U.S. Environmental Protection Agency
P.O. Box 70266
Washington D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

Georgia Right-to-Know Program
Georgia Environmental Protection Division
205 Butler Street, S.E.
Suite 1166, Floyd Towers East
Atlanta GA 30334

For further assistance:

The professionals in ESTL's **Hazardous Waste Technical Assistance Program** can provide additional assistance and information about upcoming workshops on Completing Forms and Estimating Releases for Title III.

For more information, please contact GTRI/ESTL, O'Keefe Building, Atlanta GA 30332, (404) 894-3806

Georgia Tech
RESEARCH INSTITUTE

Ground-Water Monitoring

NOTE: Ground-water monitoring cannot be used at sites where ground water is more than 20 feet below the surface.

Will I be in compliance?

When installed and operated according to manufacturer's instructions, a ground-water monitoring system meets the *Federal* leak detection requirements for new and existing USTs. Operation of a ground-water monitoring system at least once each month fulfills the requirements for the life of the tank. Ground-water monitoring can also be used to detect leaks in piping (see the later sections on leak detection for piping). You should find out if there are *State or local* limitations on the use of ground-water monitoring or requirements that are different from those presented below.

How does it work?

Operation

- Ground-water monitoring involves the use of one or more permanent monitoring wells placed close to the UST. The wells are checked at least monthly for the presence of product that has leaked from the UST and is floating on the ground-water surface.

- The two main components of a ground-water monitoring system are the monitoring well (typically a well of 2-4 inches in diameter) and the monitoring device.

Installation

- The number of wells and their placement is very important. Many State and local agencies have developed regulations for this, usually requiring some-

where between one and four monitoring wells per UST (additional ones may be required for piping).

- Before installation, a site assessment is necessary to determine the soil type, ground-water depth and flow direction, and the general geology of the site.

Variations

- Detection devices may be permanently installed in the well for automatic, continuous measurements of leaked product.

- Detection devices are also available in manual form. Manual devices range from a bailer (used to collect a liquid sample for visual inspection) to a device that can be inserted into the well to electronically indicate the presence of leaked product. Manual devices must be operated at least once a month.

What are the regulatory requirements?

- Ground-water monitoring can only be used if the stored substance does not easily mix with water and floats on top of water.

- If ground-water monitoring is to be the sole method of leak detection, the ground water must not be more than 20 feet below the surface, and the soil between the well and the UST must be sand, gravel or other coarse materials.

- Monitoring wells must be properly designed and sealed to keep them from becoming contaminated from outside sources. The wells must also be clearly marked and locked.

Source: *Straight Talk on Tanks,* EPA/530/UST-90/012, August 1990

- Wells should be placed in, or very near to, the UST backfill so that they can detect a leak as quickly as possible.

- Product detection devices must be able to detect one-eighth inch or less of leaked product on top of the ground water.

Will it work at my site?

- In general, ground-water monitoring works best at UST sites where:

  - The ground-water surface extends beneath the tank;

  - Monitoring wells are installed in the tank backfill;

  - Ground water is between 2 and 10 feet from the surface; and

  - There are no previous releases of product that would falsely indicate a current release.

  A site assessment is critical for determining these site-specific conditions.

What other information do I need?

- The proper design and construction of a monitoring well system is crucial to effective detection of leaked product and should be performed by an experienced contractor. Before construction begins, any specific State or local construction requirements should be identified.

- Purchasing a ground-water monitoring system is similar to any other major purchase. You should "shop around," ask questions, get recommendations, and select a company that meets the needs of your UST site.

How much does it cost?

- The capital costs for ground-water monitoring are generally much greater than the annual operating costs.

- The following cases illustrate the effect that different factors have on the cost of ground-water monitoring:

  Case #1
  One tank — well in backfill —
  short piping runs — manual
  monitoring — two wells installed:

  Equipment Cost = $200-250
  Installation Cost = $15-25/ft well depth
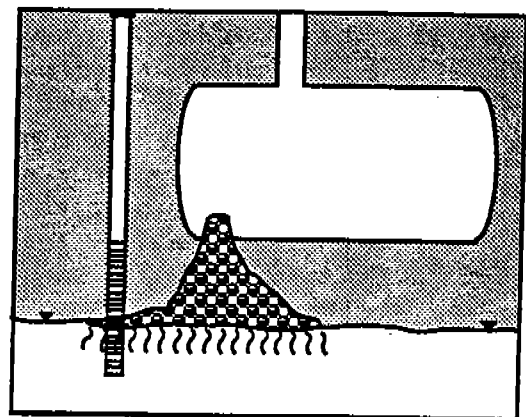 Annual Operating Cost = Under $100

  Case #2
  One tank — well not in backfill —
  long piping runs — automated
  monitoring — five wells installed:

  Equipment Cost = $2,200-5,000
  Installation Cost = $50-70/ft well depth;
     conduit to the central console =
     $500-2,000
  Annual Operating Cost = Under $200

d. Use a Table of Contents For Longer Documents

Finding specific items of information in long documents can be a time-consuming and frustrating process. This is especially true when the information is highly technical, even when the document is only 30 or 40 pages long. A table of contents is invaluable in guiding the reader through the enabling document. In addition, it can often help you, the writer, to decide if your document is well organized.

e. Include Contact Phone Numbers and Addresses

Consider the scenario of John Doe, the small business person who is reading about a new set of regulations for the first time. He has read the enabling document, so much of the information has been simplified and, to the extent possible, explained to him in layman's terms. And yet there are lingering doubts in John's mind: *Have I interpreted this requirement correctly? Do the special circumstances under which I operate mean I am exempt? I never took math in high school; how exactly do I estimate some of this stuff?* His first instinct is to grab a phone and get some answers. He thumbs through the enabling document, and *Voila!* he has the telephone number of the person he needs to speak with.

No matter how well you write your enabling document, there will always be someone who doesn't quite understand all that you are saying. This is particularly true when the agency initiative you are explaining is broad in scope, and requires that special cases be dealt with on a case-by-case basis. To anticipate such problems, always include the telephone numbers and addresses of offices to be contacted for additional information and clarification. Also, include a blank area, such as a box, for the State or local agency to insert its contact information.

Exhibit C illustrates a humorous way of providing contact information.

f. Refer the Reader to State and Local Agencies

The small business person may not know that complying with a Federal regulation does not exempt him or her from complying with State and local regulations. Your enabling document must specify that there may be requirements from other agencies that the reader may need to comply with. When appropriate, you may mention the types of agencies that the reader should contact for further information (e.g., State or local air pollution control agencies, State emergency response commissions, State small business assistance center, etc.).

Sometimes, small business persons want to know where they can get assistance in terms of equipment, contractors, vendors, etc. This information is best provided by State and local agencies. Additionally, most States have technical assistance organizations outside of the environmental agency, usually in universities, non-profit organizations, etc. It is useful for small businesses to know the names of these organizations. Once again, however, it is appropriate to let the State and local agencies provide this information.
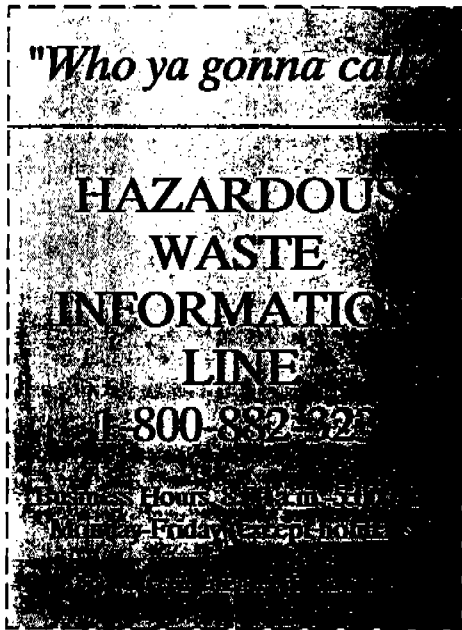
EXHIBIT C

"*Who ya gonna call*

HAZARDOUS
WASTE
INFORMATION
LINE
1-800-882-

Business Hours
Monday-Friday except holidays

Although style is a highly individual manner of expression, there are several aspects of style that, for the purposes of an enabling document, may be generalized. It is important to address each of these aspects when you wish to produce a document that is concise and easily understandable, and even more so when the document is meant for an audience with low educational levels. In this section, we discuss those aspects of style that may be generalized, and which contribute to making an enabling document easily readable.

a. Avoid Jargon

One of the keys to effective communication through an enabling document is to avoid the use of highly legal or technical language, including specialized jargon. Don't assume that the reader is familiar with terminology or methodologies. Avoid "technicalese," which may be loosely defined as "the specialized language of the technical profession." Writers of regulations or permits or other such documents have no choice but to present them in terms that preclude legal or technical ambiguity. To achieve this they must use precise legal or technical language and convey complex ideas in very specialized terms. However, because enabling documents are not considered legal documents, and because they are meant to <u>clarify</u> legal or technical documents, you can be direct in your answers to questions, and you can use everyday language. Again, it is important to remind your reader that these documents are not legal or binding and refer them again to the actual regulation, etc. However, when technical terminology is necessary, provide a definition on the same page, possibly also providing a pronunciation guide.

STYLE
☞ Avoid jargon
☞ Avoid quoting verbatim
☞ Keep language conversational
☞ Avoid large blocks of text
☞ Get straight to the point

b. Avoid Quoting Verbatim

Avoid lengthy verbatim quotations of whatever it is you are transcribing, whether it is a regulation, a permit document, or technical guidance materials. One reason small business persons are reading your enabling document is to gain a general understanding of what is required of them without having to wade through the language of the original document. Including lengthy texts of such language in your enabling document may only pose the same obstacles to comprehension as does the original document. Transcribe the text in simple language, steering away from making it legal-sounding.

c. Keep the Language Conversational

Be informal in your language and tone, within the allowable legal framework. Use the first person, addressing the facility owner/operator as "you." This degree of informality not only simplifies what you are trying to say, it also puts readers at ease. Thus, they actually want to read your enabling document, rather than approaching it as a distasteful task that they feel obliged to perform.

Use analogies or examples, when appropriate. For instance, if you were to tell readers that the quantity of municipal trash generated in the U.S. was 160 million tons in 1989, they might not readily visualize the magnitude of 160 million tons. However, if you were to add that the garbage would fill a convoy of 10-ton trash trucks 145,000 miles long, and that the convoy could circle the equator nearly six times, your readers might (quite literally) get the picture.

While being conversational, however, try to avoid using too many synonyms (for example, "worker" ought to remain "worker" throughout your document). Although it may lead to repetitive-sounding text, avoiding synonyms provides consistency and is less confusing for lower reading levels.

d. Avoid Large Blocks of Text

Avoid large blocks of text (e.g., 10 to 15 lines per paragraph or more). Large blocks of text tend to daunt readers at the outset, and may turn them off even before they have given your material a chance. Furthermore, long passages of text generally indicate the inclusion of several ideas, some of which may not be clearly distinguishable from others. This requires the reader to re-read what you have written, in order to sort through the various ideas and put them in perspective. Break up long paragraphs into smaller, more succinct ones that address distinct ideas.

Similarly, you should avoid long, multi-part sentences (such as those found in regulations). As with large blocks of text, long sentences generally indicate that several ideas have been expressed together. Split them up into smaller sentences, ensuring that there is a logical flow to your ideas. This will make your material easier to read, especially for audiences with low reading levels. Use indented bullets when listing information, rather than putting the information in running text.

e. Get Straight to the Point

Tell the readers right up-front what they are most interested in learning from your document; long-winded introductions often serve to distract from the idea you are trying to convey. This principle applies to all components of your document (the complete document, sections within the document, and paragraphs within sections). Being direct provides the reader with important information in the briefest possible time.

Avoid repeating similar requirements that the small business person must fulfill under different circumstances. Regulations and permits, perhaps for legal reasons, often repeat the same provisions as they apply under different circumstances. This tends to get confusing and some of the language appears redundant. Your enabling document can simplify such provisions by doing it in reverse: state the requirement and list the circumstances under which it is applicable.

3. Use of Communication "Tools"

By this time you're probably thinking: *So I've read about content and I've read about style; the important stuff. There's more?* Sure, there's more. So far we've only talked about matters pertaining to structure and concepts. It's time to look at different ways by which you can transform bland information into a dynamic and appealing format. Your document does not have to be one long series of text, the way a speech might look. Using your imagination and the right tools, you can produce an enabling document that is not only easy to read and understand, but also looks attractive and makes the reader want to continue reading. In this section we'll outline some of these so-called communication "tools."

a. Illustrate Your Document

Use illustrations whenever appropriate. To coin a phrase: A picture is worth a thousand words. This is eminently true in the case of lower education or reading levels. If you write your document using strictly text and keep it simple, your readers will probably get your message eventually. The key word here is "eventually." If, however, your objective is to deliver your message quickly and effectively, illustrations combined with brief explanations are for you.

You can consider using illustrations outside your text too. For example, if a particular section you are writing about deals with data processing, you could use a drawing of a computer terminal to indicate the nature of the section (refer to Exhibit D). Note that it may not always be appropriate, or even possible, to use illustrations.

> **USING COMMUNICATION "TOOLS"**
>
> ☞ Illustrate your documents
>
> ☞ Use charts and tables to present data
>
> ☞ Provide checklists and flow charts
>
> ☞ Provide samples
>
> ☞ Simplify calculations

Don't force an illustration into the text simply for the sake of using one; illustrations ought to be used to enhance the delivery of your message, not to replace the message altogether.

LEPCs and Computers

You may have decided that the right computer could help you with your LEPC tasks. Available software can provide you with a way to store information submitted by facilities, conduct hazards analyses, map hazards in your community as part of your planning process, and store information on the properties and health risks posed by chemicals in your area. Appendix K of the <u>Technical Guidance for Hazards Analysis</u> includes information on computer applications for emergency response planning.
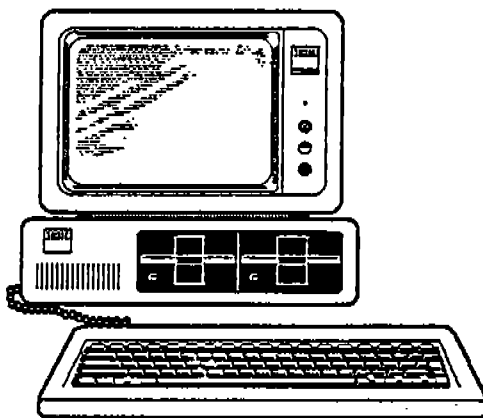
Source: *Implementing the Emergency Planning & Community Right-to-Know Act (SARA Title III)*, GPO 1988-516-002/80230, September 1988

Keep illustrations as simple as possible. Use line drawings to simplify illustrations and make them easy to follow. Avoid complex schematic diagrams, which, while they look technically impressive, may not mean much to a small business person who is not technically inclined. (Refer to Exhibit E for a fairly simple, yet polished technical illustration.) Consider using cartoon characters where appropriate. A series of cartoon panels (like those in comic books) can be both informative and entertaining.

b.   Use Charts and Tables to Present Data

When presenting data, whenever possible use charts and diagrams rather than tables. Charts present numbers and numeric relationships more effectively than tables. The four basic types of data-driven charts are line, bar, area, and pie. When you have data that changes in value over time, and there are a large number of data points, you should consider using a line graph. Vertical bar charts display values at discrete points in time, and may be used when data points are relatively few. Horizontal bar charts allow you to compare data for items at a single point in time. Use an area chart when you want to indicate not only a trend (a time-variant trend, for example), but also the volume of data at any point in time. Use pie charts to make static, percentage comparisons; when you have time-variant percentage data, however, a 100% stacked bar chart is more readable than a series of pie charts. Exhibit F has examples of bar and line graphs. Exhibit G demonstrates the graphic and effective use of a pie chart.

If your information is not the kind that is easily represented in a chart, but is numeric in nature (such as emission standards in a regulation or emission limits in a permit), use summary tables. Such tables yield data far more quickly than if those data were enumerated in text form. Keep your tables simple, and present only those data that will be informative without being confusing.

c.   Provide Checklists and Flow Charts

Checklists and flow charts are useful implements for small business persons, especially when they are required to understand and comply with multiple provisions. A checklist logically and systematically organizes the tasks and activities they must conduct. The degree of detail in your checklist may vary. At the simplest level, you will outline the major tasks that the reader is required to perform; in successive levels you will describe those tasks in greater detail. Several State and local agencies have found checklists to be quite effective in facilitating compliance. Exhibit H is a technical guidance document in checklist form.

Flow charts or decision trees are used when there is an element of time, and when one event succeeds another. Some checklists may be converted into flow charts and vice versa, but flow charts generally involve a sequential process while the same is not necessarily
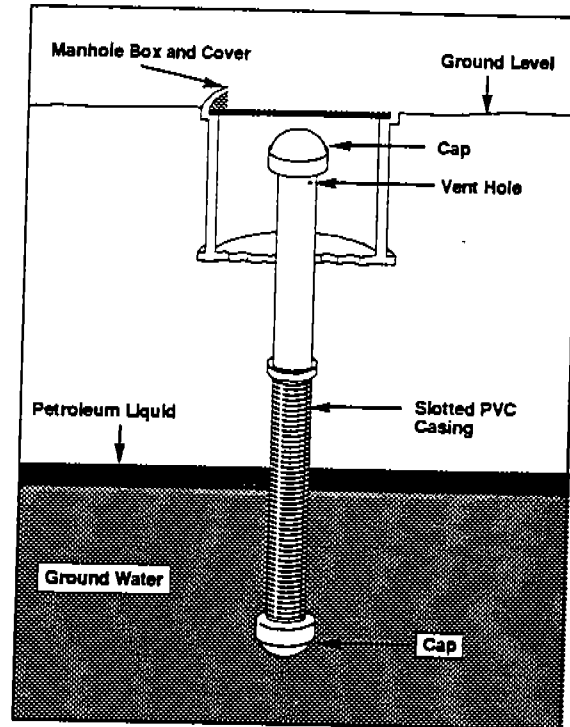
Figure 2. Details of a Monitoring Well

Source: *Leak Lookout,* EPA/530/UST-88/006, August 1988

Facts and Figures

Broadly defined, a pesticide is any agent used to kill or control undesired insects, weeds, rodents, fungi, bacteria, or other organisms. Thus, the term "pesticides" includes insecticides, herbicides, rodenticides, fungicides, nematicides, and acaracides, as well as disinfectants, fumigants, and plant growth regulators.

At present, approximately 25,000 formulated pesticide products are registered for marketing and use in the United States. EPA regulates these products primarily on the basis of their pesticidal active ingredients, the component of a pesticide product that acts on the pest. There are fewer than 750 active ingredients currently in production, with 200 leading active ingredients.

Total U.S. annual pesticide consumption is estimated at 2.7 billion pounds of active ingredients. Of this amount, 1.6 billion pounds represents wood preservatives, disinfectants, and sulfur (a fungicide). The remaining 1.1 billion pounds of "conventional pesticides" (herbicides, insecticides, and fungicides) were sold to users at a cost of $7.4 billion in 1988.

In the conventional pesticide market (see Figure 1), agriculture accounts for over two-thirds of pesticide user expenditures and about three-quarters of the volume used annually; the remainder of the market comprises industry, government, and home and garden
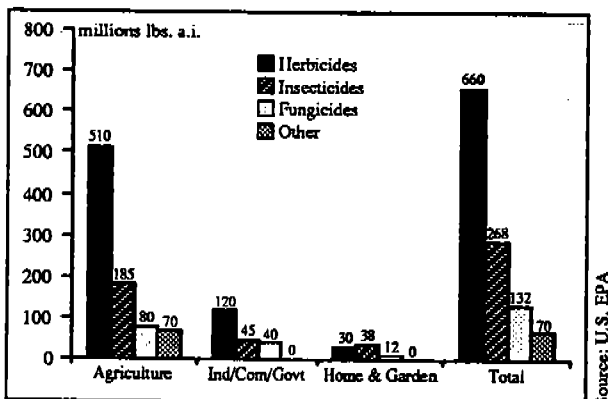
Fig. 1 - Volume of Conventional Pesticide Active Ingredients Used in U.S., 1988

Source: *EPA's Pesticide Program,*
21T-1005, May 1991

uses. Herbicides are the leading type of conventional pesticide, with over 50 percent of both domestic sales and volume used. EPA estimates that total U.S. farm expenditures on pesticides, $5.1 billion in 1988, represents less than 4 percent of total farm production expenditures ($132 billion in 1989).
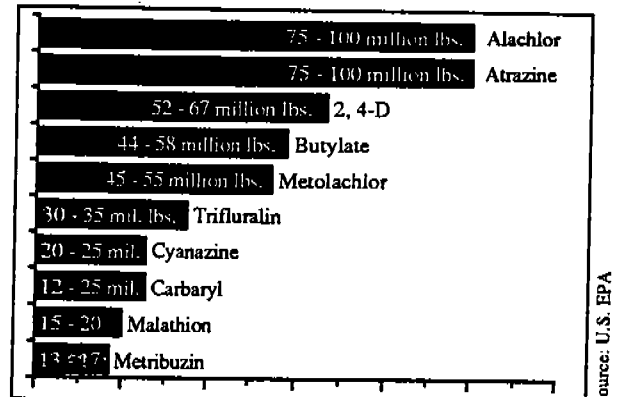
Fig. 2 - Annual Usage of the Largest Agricultural Pesticides in the U.S.

The 10 largest-use agricultural pesticides are shown in Figure 2, along with estimates of their annual usage for all agricultural and non-agricultural uses. Alachlor and atrazine are the two most widely used pesticides by volume. Eight of the 10 pesticides shown are herbicides (carbaryl and malathion are insecticides.)
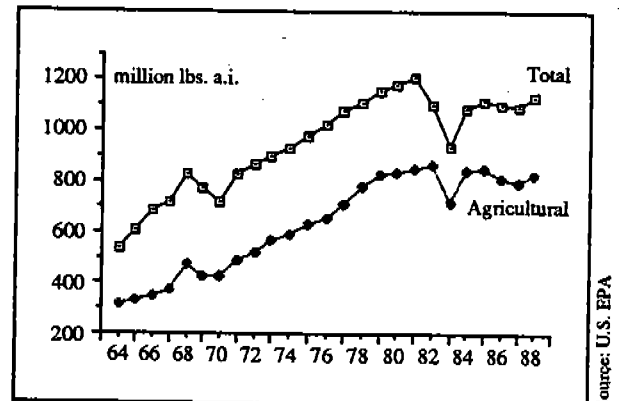
Fig. 3 - Trends in U.S. Pesticide Usage, 1964-1988

After increasing steadily throughout the 1960's and 1970's, pesticide usage reached its all-time high in the early 1980's; since then, it appears to be holding steady at just slightly lower levels (see Figure 3) and may decline in coming years. More efficient use of pesticides, the availability of even more effective pesticides, and an increased interest in sustainable agriculture contribute to this trend.

Landfills

Surface
Impoundments

Waste Piles,
Land Application

Underground
Injection Wells
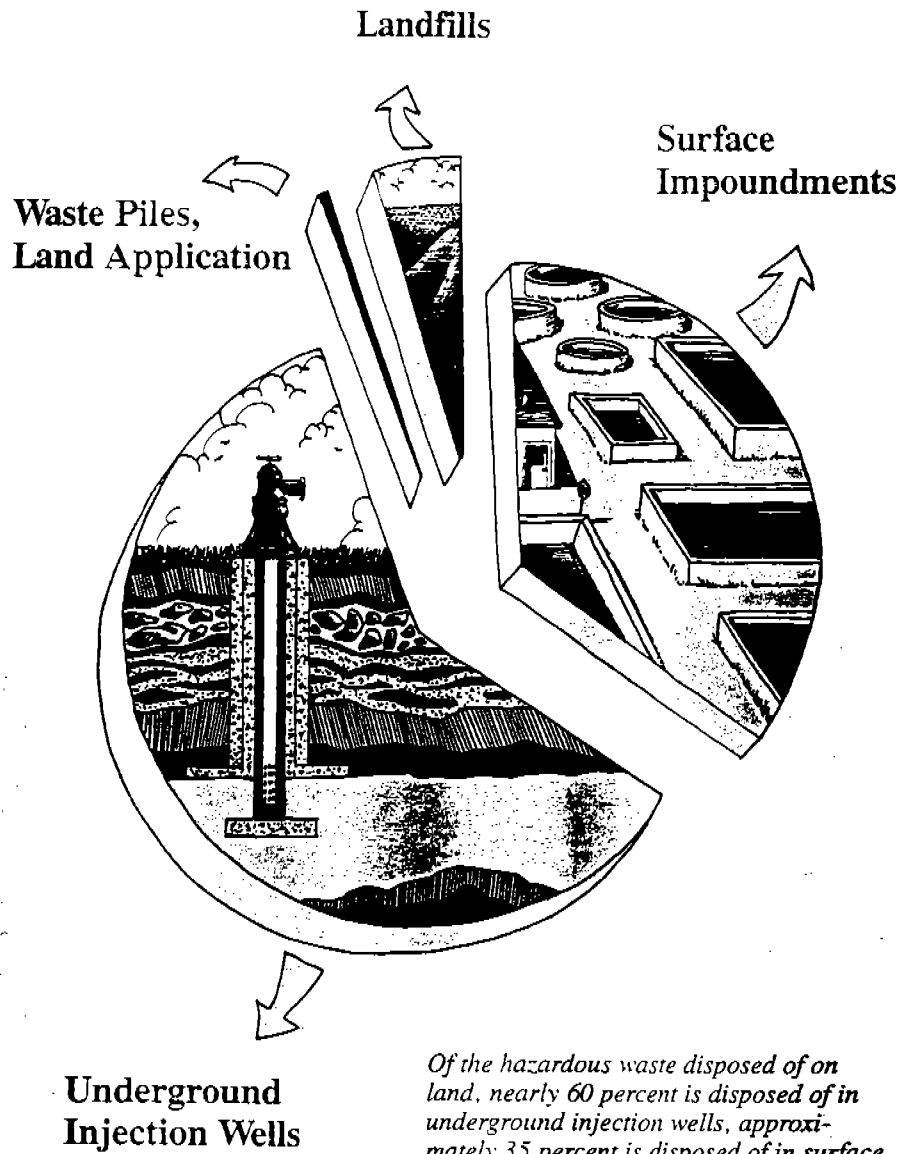
Of the hazardous waste disposed of on land, nearly 60 percent is disposed of in underground injection wells, approximately 35 percent is disposed of in surface impoundments, 5 percent is disposed of in landfills, and less than 1 percent is disposed of in waste piles or by land application.

Source: *Solving the Hazardous Waste Problem: EPA's RCRA Program,* EPA/530-SW-86-037, November 1986

**Guide #4
Spring 1991**

**Waste Reduction
Options**

Electroplating

The best waste reduction options fall into two categories: those that eliminate wastes, emissions, or discharges at the source through changes in operating practices, technologies, input materials, or products; and those that recover and recycle spent materials.

Use good operating procedures.

❏ Check process tanks every month for spills, leaks, and overflows.

❏ Maintain racks.

❏ Check barrels to make sure they are draining efficiently.

❏ Store materials and supplies properly to maintain their shelf life.

❏ Use drain boards to catch drips.

Use other available technologies.

❏ If space permits, use multiple rinse tanks, which require less water.

❏ Use spray rinses and air knives to keep solutions inside process tanks.

❏ Use air agitation in rinsing solutions to improve rinsing efficiency and to lower the amount of rinsewater used.

❏ Use flow restrictors to avoid wasting water. Flow controls that use conductivity cells will ensure that water flows only when needed for a process.

❏ Use noncyanide plating solutions to reduce pretreatment of solutions and to reduce health and safety hazards.

❏ Use trivalent instead of hexavalent chromium plating and chromating solutions to reduce health risks. Because trivalent chromium processes are more dilute than hexavalent processes, losses to the rinsing system are reduced.

❏ Use nonchelated process chemical baths to reduce hazardous waste generation.

Control dragout, the amount of excess solution that gets carried out of the bath along with the workpiece.

❏ Use automated speeds for withdrawing parts from processing solutions to control dragout.

❏ Extend drain times to reduce dragout.

❏ Place parts in the solution with points or corners downwards.

Recycle dragout solutions.

❏ Use a nonflowing rinse or an empty tank to retain process solutions. These solutions can be returned to the process tank, with or without further separation or concentration.

Switch to deionized water for replacing water that evaporates from plating process solutions. Tap or softened water is a potential contaminant to processing solutions.

The state of Georgia has a new Hazardous Waste Reduction Planning requirement. Please request Guide #1 for more information.

For more information, contact the Pollution Prevention Coordinator at 404/894-3806
Environmental Science and Technology Laboratory Atlanta, Georgia 30332

Georgia Tech
RESEARCH INSTITUTE

true of checklists. Decision trees also describe a train of events sequentially through time; however, they explicitly involve points at which the user, depending on the outcome of given events, may need to divert from one course of action to another. This is similar to the switching of a train from one track to another, depending on the schedule of other trains, etc. Not all flow charts involve decision points. Exhibit I presents a flow chart.

d.   Provide Samples

Sometimes small businesses are required to submit information (for example, notifications, reports, data, etc.) to the agency, as part of their reporting requirements. In such instances you should consider providing a sample of the type of information you expect to receive. Whenever feasible, prepare sample forms or sheets that the small business person may use to complete required information for reporting purposes (e.g., monitoring data, emission test results, etc.). Exhibit J shows a sample hazardous waste label.

e.   Simplify Calculations

Small business people typically have a problem dealing with formulae and calculations. And yet, there is no easy way to simplify calculations; by their very nature, formulae are the simplest form of expressing a numerical relationship. How then, does one go about simplifying it? Perhaps what is needed is a combination of simplification and clarification. For example, consider a complex formula involving several variables, each of which may be independently determined:

- You could break the formula up into its various components, providing smaller (and presumably easier to use) formulae for each.

- Then you would explain where the reader must obtain the data to use as inputs for these smaller formulae. This should be done in a logical fashion, so that the most basic information is collected first, and is then used to derive the other values.

- Finally, you would instruct the reader to insert the values for the various components into the original formula to calculate the result.

When instructing the reader on how to perform the calculation, you should simplify some of the terminology for different numerical components. When the regulations permit it, recommend using data derivations rather than actual measurements (which may be difficult and expensive to do). Itemize information that the reader needs to obtain. Provide blank forms to collect data for input into the calculations, and pinpoint sources for obtaining the data. When appropriate, tell the reader how to obtain the data. Be flexible about measurement units required. When appropriate, provide information on derivations, metric conversions, standard values, etc.

EXHIBIT I

Product Development:
- Product discovery
- Laboratory & greenhouse testing
- Experimental use permit obtained from EPA
- Large-scale field testing

Application:
Registrant submits test data, application
to register product, draft labeling, & tolerance
petition (for food-use pesticide)

Registration Review:
- Review of Data:
  - toxicology   - ecological effects
  - residue analysis   - exposure assessment
- Are data valid?
- When used according to label directions, does the pesticide
  pose unreasonable risks of adverse effects to human health
  and the environment?

Approval:
EPA establishes tolerance
for food use pesticide,
approves registration, publishes
notice in *Federal Register*

Returned:
EPA returns application, noting:
- need for more or better data
- need for labeling modifications
- need for use restrictions

Producer markets product for
use according to label

Figure 4 - Pesticide Registration Process for New Chemical

Source: *EPA's Pesticide Program,* 21T-1005, May 1991

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Proper D.O.T.
Shipping Name _____

UN or
NA No. _____

Generator _____

Address _____

City _____ State _____

Manifest
Document No. _____

Accumulation
Start Date _____

E.P.A.
I.D. No. _____

E.P.A.
H.W. No. _____

® J. J. KELLER & ASSOCIATES, INC. • NEENAH, WISCONSIN 54956   NO. 28-HML

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

FIGURE 1. TYPICAL HAZARDOUS WASTE LABEL

Source: *Illinois Small Quantity Generator's Manual,* HWRIC TN90-017, Illinois Department of Energy & Natural Resources, August 1990

Often, calculations are best done by example, supplemented by a description of the steps needed to perform the calculation. However, it may not be feasible to use examples to explain all calculations; the more complex calculations get, the less likely that the methodology will be effectively transmitted exclusively via a publication. This is especially true when one calculation requires data derived from another, and so on in a confusing and tangled progression. There is a certain point beyond which it is not feasible to clarify or simplify formulae, because they have become so complex. In such cases, despite all your efforts to simplify and clarify it, the business may need to obtain support beyond the enabling document. Recommend several options to seek assistance (i.e. State small business assistance center, or local environmental agency).

Appendix B provides an example of how a calculation of emission rates may be simplified and clarified.

4. Presentation Options

In this section you will read about some of the options for presenting your information. Presentation options grab the reader's attention and make your information jump out at him or her. In addition, some options make your document more polished and attractive. We have divided these options into two main areas -- highlighting and enhancing appearance.

a. Highlight Important Information

When motels or diners want to attract business they have a flashing neon sign outside. When airlines want you to take a closer look at their low, low fares, they put in a full-page ad in magazines. When there is a major item of news, the newspapers have large bold letters splashed across their front pages. So what do you do when there is something in your document that you absolutely want readers to look at? You use similar (if less dramatic or gaudy) methods.

One of the most basic ways of highlighting information is to use titles for the various topics and sections in your document. A title stands out, because it appears in the page by itself; by virtue of this fact it automatically draws attention to itself. Once you

> **PRESENTATION OPTIONS**
>
> ☞ Highlight important information
>
> ☞ Enhance the appearance of your document
>
> • Type of paper
>
> • Artwork
>
> • Color

have drawn the reader's attention, use the title to tell the reader what he or she is about to read. Don't be ambiguous with the title -- essentially summarize the material it covers, using a word or short phrase. Reading a document that has sections without titles is like trying to shop in a grocery store with aisles that have no signs above them: it can be done, but it takes longer.

Another thing to keep in mind when preparing titles is to present them in some kind of hierarchy, much in the manner that theatrical or other performances are billed. The main act (or player) gets top billing with its name in large letters; less well known acts get second or third billing, with their names getting successively smaller. Likewise, the main title in your section should be large, bold, perhaps within a shaded box, and perhaps centered on the line. Other titles should be smaller, and perhaps left justified.

Titles are not the only parts of your document that may be put in bold letters or in a shaded box. Any other information in the text that you wish to emphasize may be made bold or inserted in a shaded box. Alternatively, you may wish to underline the passage, or italicize it, or combine these two options with bold face and shading options. Keep in mind, however, that you should reserve such highlighting options for instances where highlighting is useful and necessary. Too much highlighting makes it difficult for readers to distinguish between what is essential and what is merely nice for them to know.

Another useful tool for emphasizing information is to put it into box insets. A box immediately catches the readers eye. Once again, remember not to overuse this tool. Also, do not use boxes for lengthy passages of text; keep the boxes uncluttered and easy to read. If the material in a box looks the same as the material outside it, people are less likely to read what's in the box.

b.   Enhance the Appearance of Your Document

We have outlined three methods to enhance the appearance of your document. All of them are typically more expensive than simply producing your document on a word processor and using desk-top publishing software. Your flexibility in using these methods may depend on the budget at your disposal for the production of the enabling document.

- <u>Type of Paper</u> The paper you use may be glossy, bond with high rag content, plain, etc. Generally, glossy paper and heavy paper with high rag content are considered to be more "classy" than plain computer print paper. People tend to read documents printed on these types of paper with more enthusiasm than documents printed on plain paper.

- <u>Artwork</u> You may choose to include photographic illustrations or other enhancing artwork in your enabling document. Artwork, (particularly photographs) breaks up the monotony of continuous text, and makes the document look "professional." Unfortunately, to

incorporate such artwork into your documents you would generally need the services of a professional printing or publishing outfit.

- <u>Using Color</u>   Color enhances the visual aspect of documents.   Consider television: would you rather watch your favorite show on black-and-white TV or color TV? It's the same way with reading material. On the down side, however, color documents are usually more expensive to produce than non-color ones (which is also true for TV sets). Although it is possible to produce color documents at your own desk, you would first need access to a color printer (preferably a laser printer if you want to do fancy stuff). Such printers are not common, and are quite expensive to purchase.

APPENDIX A
A CHECKLIST FOR YOUR ENABLING DOCUMENT

SMALL BUSINESS ISSUES

☐   Have you addressed the questions frequently asked by small businesses?

☐   Have you stated that there may be requirements from other agencies that the reader may need to comply with?

☐   Have you mentioned that your agency can answer questions only about its own initiative?

☐   Have you considered if some of your readers may be in lower educational or reading levels?

☐   If some of your readers are in lower educational or reading levels, have you prepared your document accordingly?

CONTENT & FORMAT

☐   Have you prepared a summary sheet as an overview of the agency's initiative?

☐   Have you included a section that presents the information about the initiative in a question-answer format?

☐   Do you have a disclaimer?

☐   If your document is long and has many sections, have you included a table of contents?

☐   Have you included contact phone numbers and addresses?

☐   Have you included a space for the state or local agency to insert their contact phone numbers and addresses?

☐   Have you referred the reader to the state or local agency for additional assistance?

STYLE

☐   Have you steered away from "technicalese?"

☐   Have you provided definitions beside the term being defined?

☐   Have you avoided lengthy verbatim quotations?

☐   Have you kept the language conversational and informal?

☐   Have you kept your paragraphs and sentences to a reasonable length?

☐   Have you been direct in telling the readers what they need to know?

COMMUNICATION TOOLS

☐ Have you used illustrations?

☐ If you haven't used illustrations, is it because they were not appropriate?

☐ If you have used illustrations, have you kept them simple?

☐ If you have data, did you use charts or tables to present them?

☐ Have you provided checklists and/or flow charts for the reader to use?

☐ Have you provided samples of forms or sheets that the reader may use?

☐ Have you simplified complex calculations by breaking them into smaller formulae?

☐ Do you have a logical, step-by-step description of how the calculation needs to be done?

☐ Have you directed the reader to the source of input data for the calculation?

☐ Do you have an example calculation?

PRESENTATION OPTIONS

☐ Have you highlighted important information?

☐ Have you taken care not to overuse highlights?

☐ Do you have titles that are descriptive and follow a hierarchy?

☐ Have you used box insets to draw attention to important information?

☐ If your budget permits, have you improved the appearance of your document by using:

    ☐ good quality paper?

    ☐ artwork, such as photographs, etc?

    ☐ color?

Consider a glass melting furnace operation that uses arsenic as a fining agent in the manufacture of glass, and has uncontrolled arsenic emissions. Uncontrolled emissions are the inorganic arsenic in the glass melting furnace exhaust gas precluding any add-on emissions control device. CFR 40, Part 61, Subpart N (National Emission Standards for Inorganic Arsenic Emissions from Glass Manufacturing) requires owners or operators to determine the uncontrolled arsenic emission rate every 12 months. (This 12-month period coincides with the period for submitting various reports, as required by other parts of the regulation.) Now let us suppose you want to explain to the owner or operator of the furnace how they can determine the emission rate. The following example demonstrates how formulae and methodologies described in the regulations may be simplified and explained for the small business person.

DETERMINING UNCONTROLLED ARSENIC EMISSIONS

As an owner or operator of a glass melting furnace with uncontrolled arsenic emissions, you are required to determine the uncontrolled arsenic emission rate for your 12-month reporting period. The steps outlined below should enable you to accurately determine this rate. **If you need assistance with these calculations, contact us at the phone number or address shown on the last page.**

Step 1:

You will need to do the following mathematical calculation **for each type** of arsenic-containing glass you produce.

Step A: Gather the following information **for each type** of arsenic containing glass produced:

A_b - **The fraction by weight of elemental arsenic in the fresh batch.**

W_b - **Weight in grams of fresh batch melted per kilogram of glass produced.**

A_c - **The fraction by weight of elemental arsenic in the cullet.**

W_c - The weight in grams of cullet melted per kilogram of glass produced.

A_g - The weight in grams of elemental arsenic per kilogram of glass produced.

Step B: Multiply A_b by W_b.

Step C: Multiply A_c by W_c.

Step D: Add the results of **Step B and Step C.** Then, from this sum, subtract A_g.

The result of the calculation in Step D = **T**, the theoretical uncontrolled arsenic emission factor.

You will need to use **T** to conduct the calculations described in Steps 2, 5, and 6.

Step 2:

You will need to do the following mathematical calculation **for each type** of arsenic-containing glass you produce.

Step A: Gather the following information **for each type** of arsenic containing glass produced:

T - **The theoretical uncontrolled emission factor, as calculated in Step 1.**

G - **The quantity (kg) of glass produced during the 12-month period.**

Step B: Multiply **T** by **G**.

Step C: Divide the result of **Step B** by **1 million, or 10^6.**

The result of the calculation in Step C = **Y**, the theoretical uncontrolled arsenic emissions for the 12-month period.

Repeat this calculation for each arsenic-containing glass type you produce. Once this has been done, identify the arsenic-containing glass type with the highest value for **Y** - the highest theoretical uncontrolled arsenic emissions. The remaining steps will be completed using information for that glass type.

Step 3:

You will conduct this step for the arsenic-containing glass type with the highest theoretical uncontrolled arsenic emissions. This is the glass type with the highest value as calculated in **Step 2** above. In this step you will need to conduct emission testing using the following test methods and procedures:

     (a)   Use Method 108 in Appendix B of 40 CFR Part 61 to determine the arsenic emission rate in grams per hour. The emission rate is to be determined using the arithmetic mean of the results of three 60-minute test runs.

     (b)   Use the following methods in Appendix A of 40 CFR Part 60:

          (i)   Method 1 for sample and velocity traverse.
          (ii)   Method 2 for velocity and volumetric flowrate.
          (iii)   Method 3 for gas analysis.
          (iv)   For sources equipped with positive pressure fabric filters, use Section 4 of Method 5D to determine a suitable sampling location and procedure.

In this step you have determined the actual uncontrolled arsenic emission rate during production of the arsenic-containing glass type with the highest theoretical uncontrolled arsenic emissions.

Step 4:

Step A: Gather the following information:

E_a -   **The actual uncontrolled arsenic emission rate (in grams per hour, g/h). This is the result of your calculations in Step 3, above.**

P -   **The rate of glass production (in kilograms per hour, kg/h). To obtain the value of P, divide the weight (kg) of glass pulled from the furnace during the emission test by the number of hours (h) it took to perform the test in Step 3, above.**

Step B: Divide E_a by **P**. Your result should be expressed in grams of elemental arsenic per kilogram of glass produced.

In this calculation you have determined the actual uncontrolled arsenic emission factor R_a.

Step 5:

Step A: For this calculation you will need the following information:

R_a - The actual uncontrolled arsenic emission factor (g/kg) calculated in Step 4, above.

T - The theoretical uncontrolled arsenic emission factor (g/kg) calculated in Step 1, above, for the same glass type for which R_a was determined (the glass type with the highest theoretical uncontrolled arsenic emissions).

Step B: Divide R_a by **T**.

The resulting value, **F**, is what is called a **correction factor**. The correction factor is a factor which makes an adjustment for the difference between the theoretical uncontrolled emission factor, **T**, and the actual uncontrolled emission factor, R_a.

Step 6:

Step A: Gather the following information for the calculation:

T - The theoretical uncontrolled arsenic emission factor as calculated in Step 1, above.

F - The correction factor calculated in Step 5, above.

G - The quantity (kg) of glass produced during the 12-month period.

Step B: Multiply **T** by **F** by **G** (T x F x G) for **each** arsenic containing glass type that you produce. The product of this calculation is called the **"Individual Rate"** for each glass type.

Step C: Add the products of Step B for each glass type. In other words, in Step B you calculated the Individual Rates for each glass type. If you produce four arsenic containing glass types, you did the calculation in Step B four times. Add the results of each Step B calculation. This gives you what is called the **"Total Rate."**

Step D: Divide the **Total Rate**, which you calculated in Step C, by **one million** (10^6). The result is the uncontrolled arsenic emission rate in Mg/Year.

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(Please read Instructions on the reverse before completing)

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MD-13; Telephone: (919) 541-5437

16. ABSTRACT

This report was prepared by the EPA's Control Technology Center (CTC) in support of the Federal Small Business Assistance Program. This report presents guidelines on how to prepare materials that explain technical information in layman's terms, specifically focusing on producing enabling documents. Enabling documents explain new standards and rules to small business operators, conveying the information that they will need to know in order to comply with these standards and regulations. The document discusses small business' concerns and perceptions of government and regulations; writing for your audience; document content, format, and style; use of graphics and other communication "tools"; and presentation options.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Small business assistance Compliance - enabling documents Non-technical writing		

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