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Region V
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Surveillance & Analysis Division

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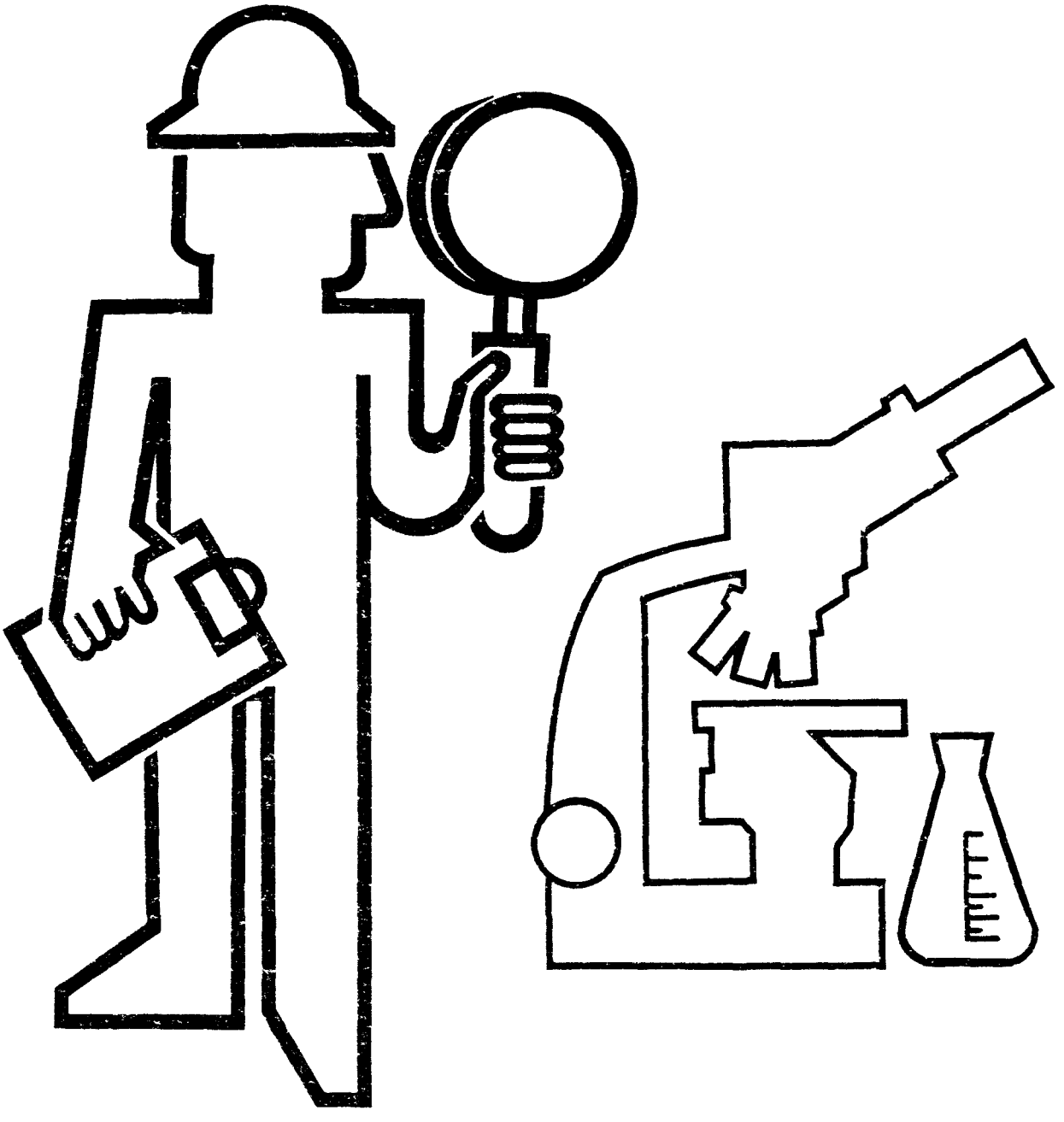
S & A Policies and Procedures Manual



ENVIRONMENTAL PROTECTION AGENCY

REGION V

S&A POLICIES AND PROCEDURES MANUAL

AUGUST 1981

SURVEILLANCE & ANALYSIS DIVISION
CHICAGO, ILLINOIS

FORWARD

This manual has been prepared as a definitive guide for use by employees of the Surveillance and Analysis Division, Region V, U.S. EPA, in laboratory and field activities in support of agency programs. The policies and procedures outlined herein are thus the standard to which each employee is to adhere. The document is comprehensive, and covers such matters as project phases; employee conduct; procedures for entering a facility; report writing and standardized formats; resource accountability/tracking commitments; sample handling; chain of custody; document control; expert witness guidelines and quality assurance.

Much of the information contained herein constitutes a compilation of existing regional and/or national policy and procedures, modified or fully developed, as necessary, to meet the needs of Region V. In this sense, special acknowledgement is given to NEIC and the Region VIII S&A Division, both in Denver, that provided a foundation from which to produce this report. In addition, many S&AD Region V managers and staff worked to provide parts of this document, and to review and refine the whole. Special appreciation is accorded to Ms. Eva Howard, who discharged the arduous responsibility of putting together the parts, coordinating comments, and resolving problems to enable the completion of this report.

William H. Sanders III, Director

Thomas E. Yeates, Deputy Director

TABLE OF CONTENTS

LIST OF FIGURES

1. S&A PROJECT PHASES

1.1 INTRODUCTION

The projects undertaken by S&A span a wide variety of activities, from one employee performing technical, supportive or administrative tasks, to numerous employees from divergent disciplines working as a team to accomplish a series of complex tasks. Most of the Division's projects consist of these phases;

Project Request

Background Review

Project Plan

Followup

Witness Guidelines

Project Activities

This section of the manual discusses the items covered in each phase which are common to most projects, and outlines S&A policies pertinent to each phase.

1.2 PROJECT REQUEST

The Project Request Form (see Figure 1) should be completed for all services requested of the S&A Division. The project objective must be clearly stated and should be developed in concert with S&A Division personnel to facilitate project implementation and succesful completion. Multiple requests (i.e., visible emission evaluations, CEI's, CSI's, PAI's, etc.) should be made with one form wherever possible. It is important to identify the decision unit and specific activity to which the project can be charged.

Include supplementary information as appropriate, i.e., correspondence, permits, consent agreements, or other important documents not currently available to S&A, as well as any specific requests or limitations the S&A project leader should be aware of. The S&A project leader will formulate a work plan and schedule in conformance with the project objective and priority. The work plan will be reviewed with the requestor. It is not desirable or necessary for the requestor to develop detailed work plans.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE.

FIGURE 1. PROJECT REQUEST FORM

SUBJECT. REQUEST FOR:

FROM

TO.

PROJECT OBJECTIVE

Decision Unit _____ Specific Activity _____ Priority _____

Desired Completion Date _____ Legal Authority _____

Principal Contact: _____ Phone _____

Date:

Subject: Acknowledgement of Receipt of Work Request

From:

To:

_____ will do the above work (as specified) (with modifications).

Target Comp. Date: _____ S&A Project No. _____ Est. Cost _____

S&A Project Leader: _____ Phone _____

Comments:

EPA FORM 1320-6 REV. 3-76 (S&A-81-01)

The requestor should use the following priority system when requesting work:

PRIORITY 1 - Highest priority work; immediate response or initiation of the project by S&A is necessary; other work in progress may be curtailed.

PRIORITY 2 - High priority projects to be scheduled and completed as soon as possible without disrupting other work in progress.

PRIORITY 3 - Projects to be completed around Priority 1 and 2 projects, but with some definite completion date, usually at least two or three months from request date.

PRIORITY 4 - Projects that may be completed if time is available. No requested due date.

The S&A Division will acknowledge the request by return mail. Priority 1 work requests should be submitted along with adequate justification to the S&A Division Director from the requesting Division or Office Director/ Deputy Director. Copies should be delivered to the Central Regional Laboratory and the appropriate field office at that time. Priority 2, 3, 4 work requests should be directed to the appropriate S&A District Office and signed by the requesting Section Chief or above.

Turnaround time on Priority 1 requests will generally be from five to ten working days after receipt of request. More complex chemical analysis, larger sample sets and number of Priority 1 requests will of course increase turnaround time accordingly. Therefore, such requests should be kept to an absolute minimum.

1.3 BACKGROUND REVIEW

Review of the available background information applicable to a specific project is a logical and essential first step in providing technical assistance. Scope and duration of the background review varies with the complexity of the project request. Where necessary, a reconnaissance of the project site provides background verification or updating. Examples of information obtained during a background review include: specific descriptions of related process and pollution control systems, copies of relevant source permits and compliance schedules, past self-monitoring data, prior government or facility studies and availability of established analytical methods.

The primary purpose of a review is to familiarize S&A personnel with the background of the work request, its ramifications, test objectives, and sampling requirements so that a comprehensive project plan can be developed. Moreover, information obtained during the review will often be used during project performance and report preparation. Therefore, it is important to conduct as thorough a review as possible early in the project development. The background review may even continue throughout the project to obtain needed information.

1.4 PROJECT PLAN

A general project outline is included with the S&A acceptance of an official request. After sufficient background information has been obtained and evaluated, a comprehensive project plan is usually prepared based on the specific objectives and tasks in the project request. For projects that are small in scope, the acceptance memorandum may serve as the project plan. Projects such as complex pollution control evaluations, NPDES case preparation, inspections, air pollution source surveys, ambient air and/or receiving water quality surveys and hazardous waste disposal evaluations normally require a detailed project plan.

The project Leader prepares the project plan detailing the project's scope, logistics and schedules. Items addressed in the project plan are:

1. Objectives

2. Background identification of a summary of process(es), applicable regulations or permit conditions, etc.

3. Survey methods, including sampling locations, schedules and procedures, analytical requirements, quality control program, etc.

4. Process data to be collected

5. Personnel and equipment requirements

6. Safety program and equipment (see Region V's Safety Manual)

7. Custody procedures

8. Report schedules

9. Followup plans (when necessary)

The Project Leader works closely with the appropriate S&A staff to determine items such as equipment and logistical requirements, analytical capabilities and personnel availability. The Project Leader also communicates with the requester or designated representative to ensure that the plan being developed addresses the tasks requested and focuses on the objectives to be completed within a specific time frame.

The importance of the project plan cannot be overemphasized. The plan approximates an agreement between the requesting party and those individuals performing the work. Manpower, equipment needs and logistics can be forecast and scheduled. Additional equipment, contract services, or personnel can be secured expeditiously with the advance determination of needs.

The project plan should be provided by S&A to the requester and the survey team at least two weeks before any specific field, laboratory, or technical assistance activity is undertaken. If no comments on the plan are received from the requester during this period, it is assumed that the plan is acceptable. Changes made to the project plan will be coordinated with the requester by the Project Leader. If considered necessary, the project leader will arrange a meeting between the appropriate S&A personnel and the requester to discuss any differences and modifications. Once all concerned parties agree to the project plan, it serves as a reference document for the project.

However, during the conduct of the project, some modifications to the plan may be deemed necessary by the S&A personnel when unforseen circumstances arise. If the requester desires changes in the project plan after the project activities have commenced, such request will be directed to the Project Leader. Each request will be discussed with the appropriate management and supervisory staff. Agreed upon changes will be detailed in a memorandum to the Director.

1.5 FOLLOWUP

Because the majority of S&A investigative activities are associated with potential enforcement actions, Priority 1 projects and special studies (e.g., of the type that would merit a quality assurance plan such as special ambient air studies, etc.) will be transmitted under the signature of the Director, Surveillance and Analysis Division.

Completion and transmittal of the project does not necessarily signify the end of S&A's involvement with the project. Continuing involvement may include technical consultation on monitoring programs and other technical measures. S&A personnel will continue to followup project involvement in subsequent legal proceedings. In such cases, S&A personnel may be involved in enforcement cases preparation and serve as, or be deposed as witnesses. Section 1.6 gives Witness Guidelines for preparing testimony as an expert witness. Other reports may affect EPA policies or serve as forerunners for additional enforcement studies.

1.6 WITNESS GUIDELINES

The following suggestions are made for prospective witnesses in order to lessen the fears and apprehensions which almost everyone has when first testifying before a board, commission, hearing officer, or in court. Even those who have testified previously encounter a certain anxiety when called for a repeat performance. When a witness is properly prepared, both with regard to the subject matter of testimony and conduct on the witness stand, there should be little fear about testifying.

It is of utmost importance that the witness be thoroughly prepared as to the subject matter of his/her testimony. Only the witness can recall what occurred in the field and/or laboratory and why. Since many cases are tried substantially after field and laboratory activities are conducted, it is imperative that adequate documentation be originally prepared in order that a witness' memory may be refreshed. A thorough and detailed review of all survey documents is the only way prospective witnesses can be adequately prepared.

In order to assist witnesses on how they should conduct themselves the following suggestions are given.

The witness will be required to take an oath to tell nothing but the truth. The important point is to remember that there are two ways to tell the truth---one is a halting, stumbling, hesitant manner, which makes the board member, hearing officer, judge or jury doubt that the witness is telling all the facts in a truthful

way; and the other way is a confident, straightforward manner, which inspires faith in what is being said. It is most important that the witness testify in the latter manner. To assist a witness in testifying in such a manner, a list of time-proven hints and aids are provided below.

GENERAL INSTRUCTIONS FOR A WITNESS

If you are to be a witness in a case involving testimony concerning the appearance of an object, place, condition, etc., try to refresh your recollection by again inspecting the object, place, condition, field notes and records, etc., before the hearing or trial. While making such inspection close your eyes and try to picture the item and recall, if you can, the important points of your testimony. Repeat the test until you have thoroughly familiarized yourself with the features of your testimony that will be given.

Before you testify, visit a court trial or board hearing and listen to other witnesses testifying. This will make you familiar with such surroundings and help you to understand some of the things you will come up against when you testify. At least be present at the hearing of the matter in which you are to testify in sufficient time to hear other witnesses testify before you take the witness chair. This, however, may not always be possible since on occasion, witnesses are excluded from the court room.

A good witness listens to the question and then answers calmly and directly in a sincere manner. The facts should be well known so they can be communicated. Testimony in this manner applies to cross-examination as well as direct examination.

Wear neat, clean clothes when you are to testify. Dress conservatively. Do not chew gum while testifying or taking an oath. Speak clearly and do not mumble. You will not be permitted to smoke while testifying.

DIRECT EXAMINATION

In a discussion on administrative procedures, E. Barrett Prettman, Retired Chief Judge, U.S. Court of Appeals for the District of Columbia, gave the following advice:

> The best form of oral testimony is a series of short, accurate, and complete statements of fact. Again, it is to be emphasized that the testimony will be read by the finder of the facts, and that he will draw his findings from what he reads. . . Confused, discursive, incomplete statements of fact do not yield satisfactory findings.

Stand upright when taking the oath. Pay attention and say "I do" clearly. Do not slouch in the witness chair.

Do not memorize what you are going to say as a witness. If you have prepared answers to possible questions, by all means do not memorize such answers. It is, however, very important that you familiarize yourself as much as possible with the facts about which you will be called upon to testify.

During your direct examination, you may elaborate and respond more fully than is advisable on cross-examination. However, when you volunteer information, do not ramble and do not stray from the main point raised in your lawyer's question. The taking of testimony is a dialogue, not a monologue. If your testimony concerns a specialized technical area, the Court or hearing board will find it easier to understand if it is presented in the form of short answers to a logical progression of questions. In addition, by letting your lawyer control the direction of your testimony, you will avoid making remarks which are legally objectionable or tactically unwise.

Be serious at all times. Avoid laughing and talking about the case in the halls, restrooms or any place in the building where the hearing or trial is being held.

While testifying, talk to the judge, hearing officer or jury. Look at him or them most of the time, and speak frankly and openly as you would to any friend or neighbor. Do not cover your mouth with your hand. Speak clearly and loudly enough so that anyone in the hearing room or courtroom can hear you easily. At all times make certain that the reporter taking the verbatim record of your testimony is able to hear you and record what you actually say. The case will be decided entirely on the words that are finally reported as having been the testimony given at the hearing or trial. Always make sure that you give a complete statement in a complete sentence. Half statements or incomplete sentences may convey your thought in the context of the hearing, but may be unintelligible when read from the cold record many months later.

CROSS EXAMINATION

Concerning cross-examination, Judge Prettyman gives the following advice to prospective witnesses:

> Don't argue. Don't fence. Don't guess. Don't make wisecracks. Don't take sides. Don't get irritated. Think first, then speak. If you do not know the

> answer but have an opinion or belief on the subject based on information, say exactly that and let the hearing officer decide whether you shall or shall not give such information as you have. If a 'yes or no' answer to a question is demanded but you think that a qualification should be made to any such answer, give the 'yes or no' and at once request permission to explain your answer. Don't worry about being bulldozed or embarrassed; counsel will protect you. If you know the answer to a question, state it as precisely and succintly as you can. The best protection against extensive cross-examination is to be brief, absolutely accurate, and entirely calm.

The hearing officer, board member or jury wants only the facts, not hearsay, conclusions, or opinions. You usually will not be allowed to testify about what someone else told you.

Always be polite, even to the attorney for the opposing party.

Do not be a smart aleck or cocky witness. This will lose you the respect and objectivity of the trier of the facts in the case.

Do not exaggerate or embroider your testimony.

Stop instantly when the judge, hearing officer or board member interrupts, or when the other attorney objects to what you say. Do not try to sneak your answer in.

Do not nod your head for a "yes" or "no" answer. Speak out clearly. The reporter must hear an answer to record it.

If the question is about distances or time and your answer is only an estimate, be certain that you say it is only an estimate.

Listen carefully to the question asked of you. No matter how nice the other attorney may seem on cross-examination, he may be trying to hurt you as a witness. Understand the question. Have it repeated if necessary; then give a thoughtful, considered answer. Do not give a snap answer without thinking. You cannot be rushed into answering, although, of course, it would look bad to take so much time on each question that the board member, hearing officer or jury would think that you are making up the answers.

Answer the question that is asked--not the question that you think the examiner (particularly the cross-examiner) intended to ask. The printed record shows only the question asked, not what was in the examiner's mind and a nonresponsive answer may be very detrimental to your side's case. This situation exists when the witness thinks "I know what he is after but he hasn't asked for it." Answer only what is asked.

Explain your answers if necessary. This is better than a simple "yes" or "no". Give an answer in your own words. If a question cannot be answered truthfully with a "yes" or "no", you have a right to explain the answer.

Answer directly and simply the question asked you and then stop. Never volunteer information.

If by chance your answer was wrong, correct it immediately; if your answer was not clear, clarify it immediately.

You are sworn to tell the truth. Tell it. Every material truth should be readily admitted, even if not to the advantage of the party for whom you are testifying. Do not stop to figure out whether your answer will help or hurt your side. Just answer the question to the best of your ability. Give positive, definite answers when at all possible. Avoid saying "I think," "I believe," "In my opinion." If you do not know, say so. Do not make up an answer. You can be positive about the important things which you naturally would remember. If asked about little details which a person naturally would not remember, it is best to say that you do not remember.

Do not act nervous. Avoid mannerisms which will make it appear that you are scared, or not telling the truth, or all that you know.

Above all, it is most important that you do not lose your temper. Testifying at length is tiring. It causes fatigue. You will recognize fatigue by certain symptoms: (a) tiredness, (b) crossness, (c) nervousness, (d) anger, (e) careless answers, (f) willingness to say anything or answer any question in order to leave the witness stand. When you feel these symptoms, recognize them and strive to overcome fatigue. Remember that some attorneys on cross-examination are trying to wear you out so you will lose your temper and say things that are not correct, or that will hurt you or your testimony. Do not let this happen.

If you do not want to answer a question, do not ask the judge, hearing officer or board member whether you must answer it. If it is an improper question, your attorney will object for you. Do not ask the presiding officer, judge or board member for his advice.

Do not look at your attorney or at the judge, hearing officer or board member for help in answering a question. You are on your own. If the question is an improper one, your attorney will object. If the judge, hearing officer or board member then says to answer it, do so.

Do not hedge or argue with the opposing attorney.

There are several questions which are known as "trick questions." That is, if you answer them the way the opposing attorney hopes you will, he can make your answer sound bad. Here are two of them:

> "Have you talked to anybody about this matter?" If you say "no," the hearing officer or board member, or a seasoned jury, will know that is not right because good lawyers always talk to the witnesses before they testify. If you say "yes," the lawyer may try to imply that you were told what to say. The best thing to say is that you have talked to Mr. _____, your lawyer, to the appellant, etc., and that you were just asked what the facts were. All we want you to do is simply tell the truth.
>
> "Are you getting paid to testify in this appeal?" The lawyer asking this hopes your answer will be "yes," thereby implying that you are being paid to say what your side wants you to say. Your answer should be something like "no, I am not getting paid to testify; I am only getting compensation for my time off from work, and the expense it is costing me to be here."

In addition to the above suggestions and guidelines, several additional references are available for further background:

Expert Witnesses and Environmental Litigation, J. L. Sullivan and R. J. Roberts, Journal of the Air Pollution Control Association, April 1975, Vol. 25, No. 4.

Environmental Litigation and the In-House Engineer, F. Finn; R. C. Heidrick; K. Thompson, Journal of the Air Pollution Control Association, February 1977, Vol. 27, No. 2.

Essentials of Cross-Examination, Leo R. Firedman, CEB 1968.

1.7 PROJECT ACTIVITIES

Technical duties such as technical information searches, inspection, evaluations, sampling surveys, observations, data gathering and interpretation and analytical testing are performed in accordance with the applicable established procedures. When new methods or modifications to existing procedures are required, they must be documented as expeditiously as possible. Because of the close scrutiny that may be given to S&A gathered data during litigation, all samples are maintained under chain-of-custody procedures and accounted for by a document control program. To ensure that all procedures practiced by S&A yield accurate data, these procedures are audited routinely through a quality assurance management program. (See Section 5 for procedures and programs.)

1.8 REPORTS

The Surveillance and Analysis Division conducts a variety of investigations for client programs. Depending on the request, an investigation may be performed by any one of the four branches/offices within the Division. Preparation of the project report, including coordinating the preparation of individual reports by project participants is the responsibility of the project leader, Field Support Team, in the Eastern District Office and/or Central District Office. To achieve consistent appearance, and provide direction to employees, Region V's Surveillance and Analysis Division document entitled, "Investigation Report Formats" (DPM No. 22, February, 1981) provides guidance on formats to use in reporting the results from the more common types of investigations performed by the Division.

While it is desirable that project reports be consistent in appearance, it is essential that they be factual, clear, concise, defensible and responsive to the project objectives. A good command of the English language and strong technical writing skills are key requisites to producing high quality reports.

Overall responsibility for preparing the final report, resides with the project leader, who along with the management of S&A, bears the burden for the accuracy and defensibility of the report and its conclusion. Achieving this goal, however, requires that each S&A organization participating in the project assure that its individual contributions are accurate.

Except for Priority 1 requests, completed investigation reports are to be transmitted as described in the "Investigation Report Formats" document. The Division objective is to maintain a two week turnaround time for completed reports. The turnaround time should be determined as follows:

Inspections - 2 weeks after date of inspection
Inspections with sampling - 2 weeks after receipt of data by the project leader

The protocol applicable to the completion of Priority 1 (Emergency survey) requests is described in DPM No. 18. Basically two types of reports are required:

Preliminary Report

The preliminary report is intended to be brief and consist of (a) a brief concise listing of "preliminary findings"; (b) a tabulation of field and laboratory data; and (c) a listing of sample numbers and sample descriptions. The report will be transmitted via memo for signature of the Branch Chief to the requester with a carbon copy including attachments to the Director of S&A. The transmittal should indicate the name and location of the survey; the dates of the request, inspection and sampling; name of requester; and the name of the S&A Project Leader. Except for large/ complex requests, the total turnaround time from date of initiation of request to provision of preliminary report to the requesting Division should fall within the following limits:

5 workdays - outstanding
10 workdays - adequate
15 workdays - Unacceptable

Final Project

Depending on the specific request, the Final Project Report may be in the form of a memo or separate report with a transmittal memo. The transmittal memo for the Final Project Report should be prepared for the signature of the Director, S&A, addressed to the Director of the Requesting Division/Office and indicate the name of the S&A Project Leader and, as appropriate, a concise statement of only the most significant findings that warrant highlighting to senior management. Carbon copies with attachments should be provided to the requesting Branch Chief. The final report should follow as soon as possible after the preliminary report.

2. S&A OPERATING POLICIES AND PROCEDURES

2.1 INTRODUCTION

This section of the manual includes information on:

Employee Conduct
Project Leader Responsibilities and Authority
S&A Tracking of Resources & Commitments
S&A Division Safety Program

The purpose of this section is to provide useful information on procedural guidance for these activities.

2.2 EMPLOYEE CONDUCT

S&A employees are required to perform their duties in a professional and responsible manner, refraining from any use of official position for private gain. S&A employees are also required to collect and report the facts of an investigation completely, accurately and objectively. They must also conduct themselves at all times in accordance with the regulations prescribed in the EPA handbook, RESPONSIBILITIES AND CONDUCT FOR EPA EMPLOYEES. The following four paragraphs review some topics in the handbook especially applicable to S&A work.

Employees shall avoid conflicts of interest through outside employment or other private interests. A conflict of interest may exist whenever an EPA employee has a personal or private interest in a matter which is related to his official duties and responsibilities. It is important to avoid even the appearance of a conflict of interest because the appearance of a conflict damages the integrity of the Agency and its employees in the eyes of the public. All employees must, therefore, avoid situations which are, or give the appearance of conflicts of interest when dealing with others in or outside the government.

Good public relations and common sense dictate that employees dress appropriately and with proper safety equipment for the activity in which engaged. When in the laboratory, field, or industrial facility, employees should consult their supervisor and the Region V SAFETY MANUAL relative to proper attire and safety requirements. When performing work at a facility, employees must conform to the safety requirement specified by the facility representatives.

It is important that cooperation be obtained and good working relations established when working with the public. This can best be accomplished by using diplomacy, tact, and persuasion. Employees should not speak of any person, other regulatory agency or facility in a derogatory manner, and should use discretion when asked to give a professional opinion on specific products or projects. All information acquired during an employee's duties is for official use only.

An employee is forbidden to solicit or accept any gift, gratuity, entertainment, favors, loans, or any other thing of monetary value from any person, corporation, or group which has a contractual or financial relationship with EPA, which has interests that may be

substantially affected by such employee's official actions, or which conducts operations regulated by EPA. Responsibility for individual actions rests with the employee where circumstances make it inappropriate to decline a nominally valued gratuity, such as lunch in a company cafeteria where no payment mechanism is provided (EPA Notice, No. 80-1 January 15, 1980 Employee Responsibilities and Conduct)

2.2.1 ENTERING A FACILITY

2.2.1.1 AUTHORITY

Various Federal environmental statutes grant EPA enforcement personnel authority to enter and inspect facilities. The authority granted in each statute is similar to that stated below, in Section 308 of the Clean Water Act:

> "(a)(B) the Administrator or his authorized representative, upon presentation of his credentials
>
> (i) shall have a right of entry to, upon, or through any premises in which an effluent source is located or in which any records required to be maintained.....are located, and
>
> (ii) may at reasonable time have access to and copy records, inspect any monitoring equipment or method required...., and sample any effluents which the owner or operator of such source is required to sample..."

For the specific requirements on conducting inspections and collecting data pursuant to other particular ACTS, see: Section 114 of the Clean Air Act; Sections 8 and 9 of the Federal Insecticide, Fungicide, and Rodenticide Act; Section 3007 of the Resource Conservation and Recovery Act; Section 8 and 11 of the Toxic Substances Control Act; Section 1445 of the Safe Drinking Water Act; and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, P.L. 96-510 (Superfund).

2.2.2 UNREASONABLE SEARCH AND SEIZURE

EPA authority under the various Acts is subject to the "unreasonable search and seizure" provisions of the Fourth Amendment to the Constitution. It prohibits all searches and seizures which are unreasonable or to which required consent has not been given. While a consensual entry may not be necessary for entering a public area or for acting under emergency conditions, no forcible entry is permitted without due process of law when entry has been denied. Consent, in this context, means the intentional foregoing of right to privacy which is not the result of either fear, ignorance or trickery.

Consent to enter may be revoked by a facility prior to the completion of an inspection. If that should occur, all work performed during the consensual entry should remain in the possession of the inspection team. When a withdrawal of consent occurs, the inspection team shall leave the area and follow the procedures for denial of entry as detailed below.

To comply with the Acts and avoid any "unreasonable search" and procedural problems, a facility should be entered in the following manner:

1. The plant premises should be entered through the main gate or through the entrance designated by the source if in response to an inspection notification letter.

2. The employee should introduce himself in a dignified, courteous manner to a responsible plant official and briefly describe the purpose of the visit. Identification credentials should always be shown. A responsible plant official may be the owner, operator, officer or agent in charge for the facility, including the plant environmental engineer.

3. If there is only a guard present at the entrance, the employee should present his credentials and suggest that the guard call his superior on the phone. The inspector may request that the guard call the responsible official directly when the name is known.

4. S&A employees shall not sign a release of liability (waiver) when entering a facility under the authority of Federal law.

5. If entry is refused, the employee should not contest the issue with the facility representative, but will immediately do the following:

    a. Obtain name and title of the individual denying entry and record the date and time;

    b. Cite the appropriate EPA-administered legislation, ask if he/she heard and understood the reason for your presence, record the answer and any reasons given for denial of entry.

    c. Leave the premises.

After leaving the facility, the employee should, at the earliest possible moment, inform the appropriate Regional enforcement attorney of the events which took place.

2.2.3 ACQUISITION OF CONFIDENTIAL BUSINESS INFORMATION (CBI)

When conducting plant evaluations, inspections, or reconnaissance, S&A personnel should attempt to collect all information that appears to be necessary to accomplish the objectives of the investigation, without consideration of claims of confidentiality for portions of it by the company. However, a clear explanation of the Agency's authority and basic procedures for handling CBI should be presented to the company at the start of the visit. This may be done either orally or by presenting company personnel with a written explanation (see examples in Figure 2). The company should be instructed to designate clearly any data, other than that which is obviously effluent or emission data, that it wishes to claim confidential. This material should be marked appropriately and segregated from the other information collected.

2.2.4 STORAGE AND USE OF CBI

Any information (letter, document, photograph, etc.) that has been claimed confidential in whole or in part by the submitting industry is treated as confidential unless/until a formal determination has been made to the contrary by the Office of Regional Counsel (ORC). The only exception is information that clearly comprises solely effluent or emission data under the definitions in 40 CFR Part 2. In addition, any secondary documents generated by U.S. EPA that contain information claimed confidential by the industry also are treated as confidential (e.g., letters/memoranda, meetings notes, other reports, telephone memoranda, Lexitron discs, tape recordings, etc.).

Depending on the extent of the material claimed confidential relative to the total document, and the need to distribute the document widely or outside the Agency, a decision is made whether to treat the entire document as confidential or to create a sanitized version by deleting the portions claimed confidential. A cross-referencing note is placed in the file or in the sanitized document to indicate that information has been deleted for protection of confidentiality. A special cover sheet (see Figure 3) is attached to the confidential portion, and it is placed in the Confidential File. A Confidential File log is maintained listing the documents in the File, their sources, and the dates of receipt.

Access to any CBI is obtained through [designated S&A personnel responsible for controlling CBI]. In general, any S&A staff member with a need for the information can borrow it during the day. She/he is instructed to sign the cover sheet and return the material before the end of the day so that it can be put back in the safe. The material can be kept for longer periods, if the borrower has an adequate storage facility available.

FIGURE 2
AUTHORITY AND CONFIDENTIALITY PROVISIONS

AUTHORITY

This request for information is made under authority provided by Section 308 of the Clean Water Act, 33 U.S.C. 1318; Section 114 of the Clean Air Act, 42 U.S.C. 7414; and Section 3007 of the Resource Conservation and Recovery Act, 42 U.S.C. 6927.

Section 308 provides that: "Whenever required to carry out the objective of this Act,....the Administrator shall require the owner or operator of any point source to establish and maintain such records, make such reports, ...and provide such other information as he may reasonably require; and the Administrator or his authorized representative, upon presentation of his credentials, shall have a right of entry to...any premises in which an effluent source is located or in which any records...are located, and may at reasonable times have access to and copy any records...and sample any effluents...."

Section 114 states: "For the purpose...of carrying out any provision of this Act...the Administrator may require any person who owns or operates any emission source...to establish and maintain such records, make such reports,...and provide such other information, as he may reasonably require; and the Administrator or his authorized representative, upon presentation of his credentials, shall have a right of access to...any premises of such person or in which any records...are located, and may at reasonable times have access to and copy any records...and sample any emissions...."

Section 3007 states: "For purposes of...enforcing the provisions of this title, any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of any officer, employee or representative of the Environmental Protection Agency,...furnish information relating to such wastes and permit such person at all reasonable times to have access to, and copy all records relating to such wastes. [Such officers, employees or representatives are authorized--

> "(1) to enter at reasonable times any establishment or other place where hazardous wastes are or have been generated, stored, treated disposed of, or transported from;
>
> "(2) to inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes."

CONFIDENTIALITY

Information may not be withheld from the Administrator or his authorized representative because it is confidential. However, when requested to do so, the Administrator is required to consider information to be confidential and to treat it accordingly, if disclosure would divulge methods or processes entitled to protection as trade secrets. EPA regulations concerning confidentiality of business information are contained in 40 CFR Part 2, Subpart B.

FIGURE 2 (Continued)

These regulations provide that a business may, if it desires, assert a business confidentiality claim covering part or all of the information furnished to EPA. The manner of asserting such claims is specified in 40 CFR 2.203(b). Information covered by such a claim will be treated by the Agency in accordance with the procedures set forth in the Subpart B regulations. In the event that a request is made for release of information covered by a claim of confidentiality or the Agency otherwise decides to make a determination whether or not such information is entitled to confidential treatment, notice will be provided to the business which furnished the information. However, if no claim of confidentiality is made when information is furnished to EPA, the information may be made available to the public without notice to the business.

Effluent data (as defined in 40 CFR 2.302(a)(2)) and emission data (as defined in 40 CFR 2.301(a)(2)) may not be considered by EPA as confidential. In addition, any information may be disclosed to other officers, employees or authorized representatives of the United States concerned with carrying out the provisions of the Clean Water Act, the Clean Air Act, or the Resource Conservation and Recovery Act or when relevant in any proceedings under these Acts.

FIGURE 3
CONFIDENTIAL COVER SHEET

INFORMATION RECEIVED BY: _____ DATE RECEIVED _____

DO NOT DETACH

_____ _____
Facility and Permit No.

ENVIRONMENTAL PROTECTION AGENCY

PRIVILEGED INFORMATION CONTROL RECORD

An assertion by the submitter, or a determination by U.S. EPA, of confidentiality has been made for the attached information. It is to be considered privileged information. This information must be severely restricted in its dissemination, and may be made available only to those Environmental Protection Agency officials with a valid need for it. See 40 CFR Part 2. All persons reviewing this information must sign below.

INFORMATION REFERRED TO:

NAME	SIGNATURE	DATE

Unauthorized disclosure of the attached information may be punishable by $1,000.00 fine or imprisonment of not more than one year, or both, and removal from office of employment. (18 USC 1905)

DO NOT DETACH

2.2.5 DISTRIBUTION OR DISCLOSURE OF CBI

Distribution of information claimed confidential is restricted as much as possible. Whenever access to any CBI is requested by any person outside the Division, the Chief of the Enforcement Legal Section most closely related to the work that generated the CBI should be consulted. In general, the following procedures are followed:

> Contractors are allowed access to CBI needed for their work on an Agency contract, if they have signed the necessary agreement with U.S. EPA (see 41 CFR 15-7.350.1 and 2).
>
> States are allowed access, if it has been determined formally that they have procedures equivalent to the Agency's.
>
> If access to confidential information is requested by a member of the public, a formal determination must be made by ORC whether the requested material is entitled to protection as confidential. The submitting industry is notified and allowed to present its arguments at that time. Normally, a formal determination never is made unless there is a request for release -- or unless U.S. EPA desires to release the information.

If it is necessary to send confidential material to an Agency staff member or other authorized person, the item is first placed in a sealed envelope bearing the name and addressee together with the words: "Privileged Information--To Be Opened by Addressee Only." This envelope is then placed inside another envelope bearing only the name and address. The item is then mailed by Certified Mail. Return Receipt Requested.

2.3 S&A PROJECT LEADER RESPONSIBILITIES

An S&A Project Leader will be assigned to each work request (i.e., inspection, sampling survey, technical review, etc.). Assignments are made generally on a case-by-case basis, considering the complexity of the project, expertise required and employee workload. Project Leader responsibilities include:

1. Overall responsibilities for accomplishment of the assigned work request and assuring that the agreed upon project objectives are met.

2. Serve as the primary S&A contact to the client, facility and media for all matters pertaining to the project, to answer questions, resolve problems, etc., within existing policy and procedures.

3. Receiving and reviewing the assigned work request, and as appropriate, negotiating the project objective and scope with the client.

4. Obtaining and reviewing background information pertinent to the project.

5. Formulating a study plan and schedule in conformance with the project objective and assigned priority in consultation with the field support team, laboratory, QAO (non-routine projects in accordance with the Region V QAO Implementation Plan), and others as appropriate.

6. Leading/coordinating all discussions/negotiations with the client regarding the study plan, including obtaining the clients concurrence with the study plan.

7. Preparing analysis request form(s).

8. Making modifications to the study plan during the conduct of the project when unforeseen circumstances arise or based on on-site findings.

9. Apprising client of project status, including problems encountered.

10. Assuring proper and timely notification of state and/or local agencies and others as appropriate.

11. Tracking and reporting on S&A resources expanded on the project.

12. Assuring proper handling of confidential information/ documents.

13. Overall responsibility for project document control and chain-of-custody.

14. Preparation of the project report, including coordinating the preparation of individual reports by project participants.

15. Assuring the proper release of data and the project report. No data or reports are released without the knowledge and concurrence of the Project Leader.

16. Initiating follow-up with the client after project completion to stay informed of client action on the completed project.

2.3.1 PROJECT PLANS - ROUTINE SURVEYS

The Project Leader is responsible for conducting routine/simple surveys or inspections to the extent that procedures, previously defined by the District Offices, are followed. These routine surveys/inspections do not require special project plans in that the same defined procedures (often mandated by regulation) are used on a regular, recurring basis.

2.3.2 PROJECT PLANS - MAJOR OR SPECIAL SURVEYS

The Project Leader is responsible for preparing the project plan for major surveys. This involves obtaining the necessary inputs from the client(s) (Divisions or States), all affected S&A Branches, and the safety officer. When appropriate, a draft plan (stamped DRAFT REPORT FOR AGENCY REVIEW ONLY, DO NOT DUPLICATE) will be provided for internal review to all involved Branch Chiefs, client(s), and project participants. The Project Leader is responsible for disseminating the draft project plan for review. After comments have been incorporated into the final project plan, a revised copy will be sent to the requestor. As a general rule, the final plan should be sent to the client(s) and given to project participants at least two weeks before any field work begins. The project plan will detail field and sampling procedures to be used in accordance with established procedures.

A briefing on the plan will be held prior to beginning any field work. At that time, those aspects of the study such as test methods, chain-of-custody procedures, legal aspects, safety requirements, document control and related activities will be discussed with all participants in the project, who are expected to read the project plan and be aware of the required procedures.

2.3.3 ADMINISTRATIVE MATTERS

2.3.3.1 PROCUREMENT REQUESTS

Prior to the survey, the respective S&A Branches are expected to submit purchase requisitions for survey needs in a timely fashion to avoid emergency requests. The Project Leader, Field Support Team, is responsible for determining travel advance needs for the study and designating those individuals who will receive travel advances. When appropriate, the Project Leader will arrange to use purchase orders in the field. For example, ice is often required in large quantities during a survey; thus, a purchase requisition is often appropriate.

2.3.3.2 TIME KEEPING

The Project Leader, Field Support Team, is expected to certify as correct the Time Reports used by field personnel to report regular time, overtime, and compensatory hours. It is expected that Project Leaders and Branch Chiefs be familiar with the Fair Labor Standards Act, the EPA Pay Administration Manual and Region V Orders as they pertain to overtime, holiday and hazardous-duty pay, and compensatory hours. As appropriate, the Project Leader will be provided a packet containing the necessary pay manuals, policy statements, and forms. Instructions for the completion and submission of time records will be provided by the respective Branch Chiefs.

2.3.4 FIELD ACTIVITIES

The Project Leader, Field Support Team, shall have the overall responsibility for determining that all field activities are performed expeditiously and that the project objectives are met. Branch Chiefs are expected to assign personnel capable of performing the Branch responsibility associated with a particular study; these personnel are expected to understand and follow the procedures relative to their assignments.

Changes from the project plan not affecting the objectives or overall scope of the study---such as addition or deletion of sampling points; modifications to schedules or frequencies; or changes in analytical load---will be coordinated through and approved by the Project Leader. This includes any support work being conducted by individuals and S&A organizations participating in the study.

Transportation needs in the field will be determined during the planning stage. GSA vehicles will be used whenever available. The Project Leader, Field Support Team, will be responsible for assuring that vehicles and mobile laboratories transported from the appropriate duty location will generally travel in convoy. It is imperative that the Project Leader be notified immediately of any delays that occur enroute. It is also expected that the rolling stock (mobile laboratories, vehicles, boats, monitoring equipment) are kept in a state of readiness. If equipment is returned from the field needing repair, maintenance or overhaul, it shall be accomplished expeditiously by the appropriate Branch.

During the field study, the Project Leader, Field Support Team, is responsible for seeing that all Chain-of-Custody and quality control procedures for sampling, flow monitoring, analyses, record keeping, etc. are followed. The field personnel are,

however, expected to understand and follow the custody procedures relative to their assignments. Following completion of the field activities and before returning to the duty station, the Project Leader or designee shall account for all field documentation---such as field logbooks, sample tags, Chain-of-Custody records---and verify that it is complete.

The Project Leader is responsible and has the authority for assuring that all field work is conducted safely, and that required safety equipment is used. All participants are required to read and adhere to the Region V SAFETY MANUAL.

2.3.5 REPORT WRITING

The Project Leader, in cooperation with other personnel, will develop an outline and determine the writing assignments for a project report. The Project Leader is responsible for assembling the report and as appropriate circulating review copies which will be numbered and stamped DRAFT REPORT FOR AGENCY REVIEW ONLY, DO NOT DUPLICATE. The Project Leader, shall make every attempt to ensure that all draft copies are returned, and that all appropriate comments are incorporated. These draft reports are disposed of upon completion of the final report. In preparing reports, the quality of and the ability to substantiate and defend the contents are foremost. The Project Leader, S&A management and supervisory personnel are responsible for assuring that all S&A reports achieve this goal.

2.4 S&AD TRACKING OF RESOURCES & COMMITMENTS

2.4.1 DISCUSSION

The S&AD will utilize a computer program to track resources usage and commitment status. The program involved will basically generate a program format based on allocated resources and attendant S&A commitments on a decision unit and sub-decision unit work item basis. This form will be distributed during the planning process for each Branch to enter its commitments based on allocated resources (distribution of resources by S&AD Director) as a part of the S&AD commitments for the respective programs, shown for each decision unit. In this fashion, all S&AD offices will be tracking uniformly identified work items. The program will be able to generate summary S&AD Director reports summarizing the usage of total resources and commitment status for all respective decision units across all offices in the S&AD; generate reports for each individual office providing summarized resources usage and commitment status for each decision unit; and provide for a comments section to add comments regarding entry items, etc.

2.4.2 S&AD TRACKING PROGRAM ENTRY REQUIREMENTS

The operation of the S&AD tracking report will require each branch office, reporting on a weekly or less frequent basis to enter work items completed by the sub-decision units of planned work and the resources required to complete each unit of attendant work. (This entry will be accomplished by filling out standard work sheet documents. The information will be entered by the district offices, EDO and CDO by remote terminal. The program's design allows for standard work load factor (time factor) to be loaded for each decision unit sub-unit work item on a T, +T, or -T basis, i.e., if work item is within the loaded T'factor, the computer will make all further calculation transactions; if it took more time to do the survey, merely enter the extra time (+T) and the computer will add the two times [(standard time) + (the addition time)] to get the total time involved. Surveys requiring less time than T' will only require the -T entry and the computer will complete the transaction.

2.4.3 OUTPUTS

The S&AD resources and tracking report will provide a summary of decision units individually or across all offices at the division director level on demand. The program will provide each S&AD office with a sumamrized decision unit report for each sub-decision unit item of planned work. These summaries will itemize both commitment and resource status. Figures 4 and 5 are examples (using hypothetical information) of the formated report for sub-decision unit items of work for all offices...Figure 2 represents initially loading the programs for the units of work displayed. The first entry of completed work is described in Figure 3.

A decision unit is a budgetary tool used to discribe mutually exclusive discreet types of work. The S&A Division performs work under numberous decision units. A complete listing of the Agency's decision units are listed below:

DECISION UNIT	PROGRAM ELEMENT	TITLE
A230	A20A2D	Air Quality Management Implementation
A235	A23A2F	Ambient Air Quality Monitoring
A305	A25A3A	Stationary Source Enforcement
B203	A41B2A	Water Quality--State Program Regs. and Guidelines
B209	A52B2D	Dredge and Fill

DECISION UNIT	PROGRAM ELEMENT	TITLE
	A7XB2A	Standards and Regs.
B212	A51B2D	Environmental Emergency Response and Prevention
B224	A53B2F	Ambient Water Quality Monitoring
B230	A54B2G	Municipal Waste Treatment Fac. Construction
	A56B2G	Waste Treatment Facility Operation and Maintenance
	A7VB2G	NEPA Compliance--EIS Prep. Mun. Fac. Construction
B241	A42B2A	Great Lakes Program
B303	A59B3A	Water Quality Enforcement
B306	A59B3A	Permit Issuance
C215	A70C2D	Water Supply--Public Systems Supervision
C220	A71C2D	Underground Injection Control
C305	A72C3A	Drinking Water Enforcement
D310	A80D2D	Hazardous Waste Reg. Strategy Implementation
E240	A96E2P	Pesticides Use Management
E305	A97E3A	Pesticides Enforcement
F210	A1DF2D	Radiation Program Implementation
H210	A1PH2A	Interdisciplinary EIS Review
L305	A2FL3A	Toxic Substances Enforcement
R348	A2XT5A	Regional Counsel
R503	A3XT5A	Policy Direction
R533	A3YT5A	Planning, Evaluation, and Analysis
R536	A3ZT5A	Financial Management
R572	A4AT5A	Personnel Management
R577	A4BT5A	Administrative Management

SUPERFUND APPROPRIATION

Y510	TENY5A	Hazardous Substances Financial Management
Y520	TETY5A	Hazardous Substances Administrative Management
Y530	TEYY5A	Hazardous Substances Legal Services
Y305	TEZY3A	Hazardous Substances Response and Enforcement
Y905	TFAY9A	Hazardous Substances Spill and Site Response

FIGURE 4 S&A DIVISION'S RESOURCES AND TRACKING REPORT

INITIAL LOADING

COMMITMENTS AND RESOURCES FOR SECOND QUARTER OF FISCAL YEAR 1981 DATE: 16-MAR-81
TIME: 08:32:50

A305 : AIR ENFORCEMENT

A3052 : STATIONARY SOURCE MONITORING

	COMMITMENTS FOR FISCAL YR	COMMITMENTS COMPLETED THIS QUARTER	COMMITMENTS COMPLETED FOR FISCAL YR	COMMITMENTS REMAINING FOR FISCAL YR	WORK YEARS ALLOCATED FOR FISCAL YR	WORK YEARS EXPENDED THIS QUARTER	WORK YEARS EXPENDED FOR FISCAL YR	WORK YEARS REMAINING FOR FISCAL YR
A30521 : DISCRETE SAMPLES								
	40.0	0.0	0.0	40.0	42.0	0.0	0.0	42.0
*A30521-A:CDO	10.0	0.0	0.0	10.0	2.0	0.0	0.0	2.0
A30521-B:CRL	20.0	0.0	0.0	20.0	4.0	0.0	0.0	4.0
*A30521-C:EDO	30.0	0.0	0.0	30.0	6.0	0.0	0.0	6.0
A30521-D:EEIB	40.0	0.0	0.0	40.0	8.0	0.0	0.0	8.0
A30521-E:QAO	50.0	0.0	0.0	50.0	10.0	0.0	0.0	10.0
A30521-F:TSB	60.0	0.0	0.0	60.0	12.0	0.0	0.0	12.0

08:34:04 Size: 19K CPU: 9.06 Status: SUCCESS

FIGURE 5 S&A DIVISION'S RESOURCES AND TRACKING REPORT

AFTER FIRST UPDATE

COMMITMENTS AND RESOURCES FOR SECOND QUARTER OF FISCAL YEAR 1981 DATE: 16-MAR-81
TIME: 08:37:27

A305 : AIR ENFORCEMENT

A3052 : STATIONARY SOURCE MONITORING

	COMMITMENTS FOR FISCAL YR	COMMITMENTS COMPLETED THIS QUARTER	COMMITMENTS COMPLETED FOR FISCAL YR	COMMITMENTS REMAINING FOR FISCAL YR	WORK YEARS ALLOCATED FOR FISCAL YR	WORK YEARS EXPENDED THIS QUARTER	WORK YEARS EXPENDED FOR FISCAL YR	WORK YEARS REMAINING FOR FISCAL YR
A30521 : DISCRETE SAMPLES								
	40.0	4.0	4.0	36.0	42.0	0.8	0.8	41.2
*A30521-A:CDO	10.0	4.0	4.0	6.0	2.0	0.1	0.1	1.9
A30521-B:CRL	20.0	12.0	12.0	8.0	4.0	0.3	0.3	3.7
*A30521-C:EDO	30.0	0.0	0.0	30.0	6.0	0.0	0.0	6.0
A30521-D:EEIB	40.0	0.0	0.0	40.0	8.0	0.0	0.0	8.0
A30521-E:QAO	50.0	12.0	12.0	38.0	10.0	0.3	0.3	9.7
A30521-F:TSB	60.0	0.0	0.0	60.0	12.0	0.0	0.0	12.0

08:38:32 Size: 19K CPU: 9.30 Status: SUCCESS

*Office entry will track the Division commitment and resources usage above the --- line... All other office's entry information will only track that office's line item on the vertical line. For reporting/entry proposes the *offices are called prime offices and the others are called secondary offices. It is obvious that this approach is necessary to allow each office to track his work specifically while designating the offices with the final commitment entry as prime offices to track the Division commitments

2.5 S&A DIVISION SAFETY PROGRAM

2.5.1 SAFETY POLICY STATEMENT

The S&A Division has the responsibility to provide a safety program that will insure the protection and well being of all field, laboratory and office personnel within the Division. It must be understood that safety rules cannot be developed to cover every situation that could arise. Therefore, each employee must use a high degree of common sense, practical judgement, and personal experience in order to maintain a high level of safety consciousness.

An S&A Division Safety Manual which covers overall safety procedures for the Division along with a Central Regional Laboratory Safety Manual and Eastern District Office laboratory safety procedures are available to employees. It is mandatory that each employee involved in field and/or laboratory work read these documents and apply the policies and procedures contained therein. Office personnel should also become familiar with general office safety requirements.

First-line supervisors are responsible for maintaining a strong and highly visible safety program within the unit they supervise. Thus responsibility includes ensuring that proper equipment is available and supplies are maintained, that offices and work areas are kept clean and orderly and that employees are adequately trained. If safety rules are violated, supervisors are responsible to see that appropriate corrective and/or disciplinary action is taken.

Periodic unannounced safety inspections will be conducted to determine if employees are conforming to the requirements of the safety manuals.

2.5.2 EMERGENCIES

There are three kinds of emergency situations each person should be prepared for. These are: (a) fire, (b) accident, (c) sudden illness.

In the event of an accident, or illness, the first person on the scene should:

a. Call the building first aid center (3-0307) if the accident is not obviously very serious. Call the Fire Department (911) if the accident will require immediate emergency treatment.

b. Stay with the victim and provide assistance until the PHS nurse or rescue squad arrives.

c. Advise the supervisor and safety officer of the accident and related circumstances.

The accident victim's supervisor should complete Form 1440-9 and Form CA-1 or CA-2. Copies of the forms should be sent to the offices described on the different colored forms. Both forms are available from Max Anderson (6-6228) S&A Division Safety Officer. The Westlake Fire Department is 871-3322.

a. In the event of fire alarm sounds: All personnel should leave the building immediately and assemble in an area away from the building. Each supervisor should account for all assigned employees.

b. If you observe a small fire, and no alarm has sounded, use a fire extinguisher and extinguish the fire. If the fire is too large to be extinguished quickly, sound the fire alarm and evacuate the building.

2.5.3 OFFICE SAFETY REQUIREMENTS

1. General Housekeeping

   a. Passage ways, exits and elevator lobbies should always be kept clear at all times to allow free passage of personnel and fire-fighting equipment.

   b. Desks and individual work areas including tops of radiators, filing cabinets, book cases and window sills should be kept free of excess paper, publications and all other unnecessary materials. Each employee will be held responsible to keep their respective areas clean and neat looking. If it's not needed, recycle it.

   c. Electrical extension cords should not be used without approval of the supervisor. Cords should not extend across walkways (unless properly covered) or any other areas that would create a potential hazard. No more than one electrical cord should be used per wall socket.

   d. Coffee pots and other small appliances must have a pilot light to indicate usage and should be unplugged at the close of each work day. The Division's Safety Officer will make inspections to ensure this is being done. Only those appliances that are approved by Underwriters' Laboratory and installed in accordance with local fire codes and building manager's approval shall be used.

e. "No Smoking" and all other safety signs should be observed and obeyed.

2.5.4 SELF-PROTECTION PLAN

The Self-Protection Plan for the S&A Division is posted in the 10th floor lunch room. All employees should become familiar with this plan.

Self-Protection Plans for the 536 South Clark Street Building and the Westlake, Ohio Building are available from the Section or Office Safety Committee Members.

The Safety Committee Members are:

Max Anderson - S&A Division Safety Officer
Phyllis Reed/Syl Bernatos - Central District Office
Curtis Ross/Chick Steiner - Central Regional Laboratory
Bud Burge - Eastern District Office

2.5.5 FIELD AND LABORATORY SAFETY

Procedures for S&A Division field and laboratory safety are outlined in three documents: (1) Surveillance and Analysis Division, Region V Safety Manual, (2) Central Regional Laboratory Safety Manual, and (3) Eastern District Office's Safety Policies & Procedures. In order to minimize accidents and injuries it is mandatory that all field and laboratory personnel become familiar with the procedures set forth in these documents.

2.5.6 MEDICAL MONITORING PROGRAM

The medical program is designed basically for laboratory and field workers whose work regularly poses the possibility of exposure to toxic materials. In addition, the program should meet the needs of other diverse groups of employees whose jobs require periodic health assessment. Generally, administrative, fiscal, secretarial, statistical, and other support personnel who are exposed to toxic materials indirectly, infrequently, or inconsequentially should not be included. Representative job categories that should have medical monitoring made available on exposure include chemists, microbiologists, toxicologists, physical scientists, and the technical personnel who support these disciplines. Employees who collect various types of polluted samples should be included if the sampling requires exposure to pollutants significantly in excess of ambient concentrations, as should those who perform custodial services in actual laboratories or in areas where toxic

materials are stored. Part-time and temporary employees should be included if their jobs are similar to the categories previously mentioned. The decision as to which employees are nominated should rest with the program director or supervisor most familiar with the possible hazards involved.

As more Federal regulations and recommendations appear for employees potentially exposed to toxic chemical and physical agents, program updates and modifications are to be expected. When such changes occur, they will be presented by the Agency's Office of Occupational Health and Safety.

More detailed information on the Medical Monitoring program can be obtained from the Division Safety Officer for those employees who are interested.

3. SAMPLE HANDLING AND CUSTODY PROCEDURES

3.1 INTRODUCTION

As in any other litigation, EPA must be able to prove that any analytical data offered into evidence in a court of law accurately represents environmental conditions existing at the time of sample collection. This implies that it can be clearly demonstrated that none of the involved samples could possibly have been tampered with during collection, transfer, storage or analysis. Therefore, an accurate written record must be maintained to trace the possession of each sample from the moment of its collection through its introduction into evidence. Samples for which this accurate documentation is maintained are called custody samples.

Since the S&A performs the same basic sample handling operations on both known litigation and non-litigation samples all samples collected by the S&A will be collected and handled accordingly to the standard custody procedures. All samples, except GLNPO samples - collected by other than S&A staff, will be placed into the standard custody procedure upon sample reception by the first S&A staff receiving the subject samples.

3.2 SAMPLE CONTROL/HOLDING PROCEDURES

A sample is physical evidence collected from a facility and/or from environmental components. An essential part of all enforcement investigations is that evidence collected be controlled. To accomplish this, standard operation procedures for sample handling and chain-of-custody have been developed. Accordingly, these procedures shall be utilized for all sampling situations and sample types (parameters and preservative types) carried out by the S&A staff.

Facility and/or environmental samples may represent several media/matrices or mixed media/matrices types; e.g., water, fish, sediment, air, soil, oil, oil and water, etc. Some of the desired measurement parameters may be completed in the field (e.g., pH, temperature, flow measurement, continuous air monitoring, stack gas analysis, etc.). All field measurements will be recorded (in the field at the time of measurement) directly in serialized Field Logbooks or on field data record forms. (Field Data Record Sheet Form RV 3460.1, and example sheet from the Field Logbook are shown as Figures 6 and 7).

Samples other than the in-sites and in-field measurements will be identified by the National Standard format tags (see Figure 8) with all information filled out as appropriate and indicated.

These samples are removed from the sample location and transported to a laboratory or other location for analysis under proper preservation and shipping procedures. Before removal, however, a sample is often separated into portions depending upon the analyses to be performed. Each portion is preserved in accordance with applicable procedures and the sample container is identified by a sample tag. Sample tags shall be completed for each sample, using waterproof ink unless prohibited by weather conditions. For example, a logbook notation would explain that a pencil was used to fill out the sample tag because a ballpoint pen would not function in freezing weather. The information recorded on the sample tag would include:

Project Code - A number assigned by S&A and also serves as the Document Control number for the survey.

Station Number - A number assigned by the Project Leader - using the CRL Log Number system.

Date - A number indicating the year, month, and day of collection.

Time - A four digit number (XXXX) indicating the military time of collection - for example: 0954.

Station Location - The sampling station description, as specified in the project plan.

Samplers - Each sampler signs.

Tag Number - A unique serial number is stamped on each tag.

Remarks - The samplers record pertinent observations and sample type; i.e., water, sediment, fish, etc.

FIGURE 6 REGION V FIELD DATA RECORD SHEET

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
Surveillance and Analysis Division
536 South Clark St.
Chicago, Illinois 60605
CENTRAL DISTRICT OFFICE

RV 3460.1 (10/30/74) U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
___CENTRAL ___ DISTRICT OFFICE
FIELD RECORD

CUSTODY
NON-CUSTODY

DISCHARGER _____ SAMPLING LOCATION _____

NPDES NUMBER _____

ADDRESS _____ OUTFALL NUMBER: _____

_____ LAT ___ ° ___ ' ___ " LONG ___ ° ___ ' ___ "

CONTACT _____ RECEIVING WATER: _____ M.P. OF DISCHARGE INTO STREAM: _____

FIELD RECORD FOR COMPOSITE AND RELATED GRAB SAMPLES

Sample Source _____ Sample No. _____

Time/Depth	Flow	Aliquot	Temp. °C.	pH	D.O.	Pres. Codes		Remarks / Chest No.
Total/Avg.								

REMARKS: _____

SAMPLER'S SIGNATURE _____ _____ _____

DUTY TIME _____ _____ _____ _____ _____ _____

Initial Time Final Time Initial Time Final Time Initial Time Final Time

FIGURE 7 EXAMPLE SHEET FROM FIELD LOGBOOK

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
Surveillance and Analysis Division
536 South Clark St.
Chicago, Illinois 60605

CENTRAL DISTRICT OFFICE

EV 3460.1 (10/30/74) U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
CENTRAL DISTRICT OFFICE
FIELD RECORD

CUSTODY
NON-CUSTODY

DISCHARGER _____ SAMPLING LOCATION _____

NPDES NUMBER _____

ADDRESS _____ OUTFALL NUMBER: _____

_____ LAT ___ ° ___ ' ___ " LONG ___ ° ___ ' ___ "

CONTACT _____ RECEIVING WATER: _____ R.P. OF DISCHARGE INTO STREAM: _____

SAMPLE INFORMATION:

☐ Municipal ☐ Industrial

Other _____

☐ Influent ☐ Effluent
☐ Grab ☐ Cont. Comp.
___hr. Comp. at ___hr. Intervals
☐ Time Comp. ☐ Comp. by Flow
☐ CST ☐ CDT ☐ EST ☐ EDT

SAMPLER:

☐ MANUAL ☐ AUTOMATIC ☐ EPA ☐ DISCHARGER

TYPE _____

FLOW MEASUREMENT:

Flume/Weir Type & Size _____
Integrator Finish _____
Integrator Start _____
Intg. F ( ) x Diff. ( ) = _____
☐ EPA ☐ DISCHARGER ☐ OTHER _____
☐ TOTALIZER ☐ INSTANTANEOUS ☐ AVERAGE DAILY
☐ PLANT RECORDS ☐ ESTIMATE ☐ OTHER _____

SAMPLE COLLECTION

	Composite	Grab						PRES. CODE [2]	
SAMPLED BY									
CDO Log Numbers								Microbiology	00
STORET Stn. No.								Gen. Chem.	01
DATE	/							Petro. Prod.	02
TIME	/							Pest. Org. PCBs	03
DEPTH								Nutrients	04
FLOW ( ) [1]								Tot. Diss. Phos.	05
TOT.Cl$_2$ RES.mg/l								Oil & Grease	06
TEMP °C.								Tot. Metals	07
pH (field)								Diss. Metals	08
D.O. (mg/l)								Phenolics	09
CONDUCTANCE								Cyanide	10
% FROM RT. BANK UPSTR.									
SAMPLING MILE POINT									
PRESERVATIVE AND/OR PRESERVATIVE CODE									

[1] Use Avg. Flow for Composites and Inst. Flow for Grabs [2] Circle or Indicate Analysis and Enter Preservative Code

REMARKS: _____

SAMPLER'S SIGNATURE _____

DUTY TIME _____

Initial Time Final Time Initial Time Final Time Initial Time Final Time

FIGURE 8 SAMPLE IDENTIFICATION TAGS

Water Tag (White)

Proj. Code	Station No.	Mo./Day/Yr.	Time	Designate: Comp. / Grab
Station Location		Samplers: (Signature)		

Tag # 1234 / Lab Sample #

Remarks:

Analyses: Bacteriology; Mutagenicity; Pesticides; Volatile Organics; Priority Pollutants; Organics GC/MS; Oil and Grease; Cyanide; Metals; Mercury; Phenolics; BOD Anions; Solids (TSS)(TDS)(SS); COD, TOC, Nutrients

Air Tag (Blue)

Proj. Code	Station No.	Mo./Day/Yr.	Time	Sequence No.
Station Location:		Samplers: (Signature)		

Tag # 1234 / Lab Sample #

Remarks:

Sample Type:
- ☐ Source Filter
- ☐ Probe Wash
- ☐ Impinger Catch
- ☐ Ambient Filter
- ☐ Ambient Impinger
- ☐ Solid Adsorbant
- ☐ Liquid Adsorbant ☐

Reverse Side

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
BUILDING 53, BOX 25227, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

EPA

Referencing the example sheet of the Field Logbook, see Figures 6 and 7, the responsible field staff will enter both formated information (required entries) and observational information (judgemental data). The Field Logbook will be serially numbered and unique to each survey/project.

During collection, separation, identification, and preservation, all samples will be maintained under Chain-of-Custody procedures discussed later. If the composite or grab sample is to be split, it is aliquoted into similar sample containers. Identical sample tags are completed and attached to each replicate and marked with a "D" in the sample number. The tag identifies the replicate sample for the appropriate government agency, facility, laboratory, or company. In a similar fashion, all tags on blank or duplicate samples will be marked with an "R" or a "D", respectively. An explanation of the numbering system is detailed below.

The sample type letter is used to identify quality assurance and other sample types. The following letters are fixed and are to be used only as specified:

S = Sample
D = Duplicate Sample (two samples collected)
A = Duplicate Analysis (one sample split)
L = Laboratory Control Standard
R = Reagent Blank (Field)
B = Reagent Blank (Laboratory)

All other letters may be used as the Project Officer wishes, after clearing with the CRL Sample Custodian.

The sample numbers should be assigned in numerical order to all samples collected during the specified survey. If more than 99 samples are collected during a given survey, a new survey number should be used as required to uniquely identify all samples. Quality Assurance samples should receive unique numbers with duplicates being always for the preceeding sample.

Additional examples are given below to further explain the system.

Sample number "AM01S01"

Where: A = Air Surveillance Branch
M = Charles Miller
01 = Miller's first survey in FY-78
S = Sample
01 = First sample collected for Project 01

Sample Number "AM02Z37"

Where: A = Air Surveillance Branch
M = Charles Miller
02 = Miller's second survey in FY'78
Z = Sample from Site "Z"*
37 = The 37th sample from Project 02

*The use of the letter Z to specify a site had been approved by the CRL for the O'Hare Study.

Sample Number "AM02A38"

Where: A = Air Surveillance Branch
M = Charles Miller
02 = Miller's second survey in FY'78
A = A duplicate analysis of Sample Number AM02S37
38 = The 38th sample in Project 02

Sample Number "AM02D39"

Where: A = Air Surveillance Branch
M = Charles Miller
02 = Miller's second survey in FY'78
D = A duplicate sample of Sample Number AM02A38 (or AM02S37)
39 = The 39th sample in Project 02

During the time that the environmental samples are collected, the proper aliquots are prepared and properly preserved, an analysis request sheet is completed, commensurate with the desired parameters for each discrete aliquot. The analysis request forms should have parameters listed that match with the parameters checked off on each sample tag, on each sample aliquot. (In the future, the CRL will generate the analysis request sheet by computer.) Most sample data will be entered onto these analysis request sheets by the CRL and returned to the data user.

All field collected samples requiring shipment from the field to an EPA laboratory or to a centralized location, and/or shipment to a contractor's laboratory will be shipped in compliance with all applicable D.O.T. regulations, preservation requirements, and EPA safety requirements. An overview of these procedures are listed below:

3.2.1 PROCEDURE FOR HAZARDOUS AND NON-HAZARDOUS WATER AND SEDIMENT SAMPLES

These samples generally are collected in one (1) pint, one (1) quart, one (1) gallon, or two and one-half (2 1/2) gallon glass containers.

Forty-eight (48) or 76 quart capacity plastic picnic coolers should be used to ship the samples.

Samples are placed in the picnic cooler in an upright position and separated by styrofoam sheets of 1" X 3" thickness. Alternately, cardboard sections are placed in a manner so as to keep the glass sample bottles from "banging up" against each other, both sideways and from the top and bottom.

After the styrofoam or cardboard is placed in the picnic cooler, additional packaging material consisting of "peanut", "popcorn" absorbents or "bubble" plastic sheets are used to further cushion and compact the cooler so that movement is minimized.

Volatile organic samples (40 ml VOA vials) are wrapped in the "bubble" plastic sheets and placed in one corner of the picnic cooler to prevent breakage and leakage. Paperwork to be shipped with the samples is placed in a plastic ziplock bag and sealed with tape. Liberal portions of ice, crushed or cubed, are added to fill the cooler and a cardboard sheet placed over the ice and the picnic cooler is sealed. The cardboard serves to prevent breakage if the cooler is dropped, either in an upright or upside down position. D.O.T. regulations require packaging to withstand a four foot (4') fall. The above packaging methods achieve this requirement. The picnic cooler is sealed with filament tape completely around all edges and the custody seal is placed on both sides of the cooler and taped once so that when the picnic cooler is received, the receiver can readily check to see if the seal has been tampered with.

On the outside of the chest, a sticker indicating "THIS SIDE UP", "WATER SAMPLES", "FLAMMABLE" or "HAZARDOUS MATERIALS", "GLASS", or "FRAGILE" will be attached to the sides and top of the cooler (to assure that any warning notice can be clearly recognized by the courier).

When shipping hazardous samples, a "HAZARDOUS MATERIALS SHIPPERS CERTIFICATE" and an address label must be attached to the top of the picnic cooler (these latter procedures apply to Federal Express shipments only). All of the former procedures mentioned above apply to Purolator Courier and Federal Express Courier. (The CRL presently does not use United Parcel Service.)

3.2.2 PROCEDURE FOR PACKAGING AND SHIPMENT OF FISH SAMPLES

Samples are packaged in a "freezer-safe" cardboard box equipped with a styrofoam-lined box inside of the big box. The samples are first wrapped twice in aluminum foil, so as to retain all

fluids, and then placed in a teflon bag. "Peanut or popcorn" packaging material (approximately one-to-two inches (1"-2") high is added to the box and the fish samples are placed on top of the packing material. Packaging material is added so as to completely cover the samples, but enough room must be left to allow placement of ten pounds (10 lbs.) of dry ice wrapped in newspaper (or brown packing paper) into the box. A styrofoam top sheet is put over the dry ice and the box is sealed with one inch (1") filament or nylon tape. Custody papers and seals are put in a plastic bag and attached to the top of the box. The shipping label must indicate "SAMPLES PACKED IN DRY ICE", so that the courier handling the box will know.

The samples, properly packaged with all prescribed forms filled out are delivered to the laboratory(s) by field staff or by mail delivery. At the laboratory, the samples will be checked for proper samples and custody, logged in, and dispensed to a custody room (refrigerator-freezer provided). The laboratory file of information is considered complete when all samples are analyzed and the results are recorded on the analysis request forms.

These files of original data are reviewed for completeness by the Office Director(s) or his designee(s) and filed in locked custody files in each of the S&AD offices. A logbook is maintained in each office for the custody files which lists the files stored and the name of all persons having access to any files, the data and item(s) removed at any time from the file, and the name of the person who removed the file. Therefore, all original information, relative to a sample or group of samples should be available shortly, after a request for such information is made and the files should be up-to-date, complete and accurate at all times.

3.2.3 SAMPLING HANDLING - CONTRACT LABORATORIES AND FIELD STAFF

When practicable, all Regional laboratory and field contracts managed by the S&AD will require the Contractor(s) to follow identical sample handling procedures as described above - any justifiable exception to the above shall require the approval of the S&AD Director. However, it should be noted - with particularity - that the Agency has several national contracts for field investigation/sample collection and laboratory analysis and each of these contracts has its own specific handling protocol; accordingly, these specific protocols must be followed attendant to the contractual agreement. In addition, all of Region V's handling requirements must also be met. Prior to establishing analytical or field investigation/sampling contracts, CRL staff person(s) responsible for coordinating contract analytical work should be contacted for specifics. General guidelines are listed below:

1. Both U.S. EPA and Contractors will use the National Standard Sample Tag and the National Standard Custody form - other specific field and tracking forms and as required by the contract.

2. All samples to be shipped will follow the Standard Regional/D.O.T. requirements as defined under Shipping Procedures.

3. All samples shipped to Region V contracted laboratories for analyses will be accompanied by the tracking form, with distribution made as shown on the form.

4. Samples to be collected by the FIT's Contractor or U.S. EPA Region V staff for analysis by the VIAR Contractor will follow specific protocol. All forms and procedures must follow the required order and sequences or the associated samples will be discarded.

3.3 CHAIN OF CUSTODY PROCEDURES

Due to the known or potential evidential nature of samples collected during environmental investigations, possession must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings--it shall be the policy in U.S. EPA's Region V S&AD to collect all samples under the standard custody procedures. In addition, it shall be policy to place all non-custody samples (except GLNPO samples) collected by samplers outside the S&AD under the standard custody procedures upon reception by S&AD staff (any exception to this policy shall require a case-by-case review and concurrence by the S&AD Director before the fact or as soon as reasonably possible after the fact).

Sample custody is initiated at the time of sample collection by fixing a numbered custody seal to each sample taken or by placing the sample in a locked container or into a container which is sealed with a custody seal. The custody form is also, immediately filled out and signed by the person collecting the sample. It is the responsibility of the sampler to ensure that the sample and sample descriptive forms are in custody (locked or properly sealed to prevent tampering) and that all descriptive information is accurate and complete. Each individual who subsequently signs the custody form has a similar responsibility and, in addition, must ensure that all information added to the sample descriptive forms is also complete and accurate. This process is documented by the use of the Standard National Chain of Custody Record form (see Figure 9). The Chain of Custody Record forms are serially numbered (forms are accountable) and provides an original for accompanying the associated samples and a copy for the field records.

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

FIGURE 9

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	NO. OF CON-TAINERS								REMARKS
SAMPLERS: *(Signature)*										
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION					

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

Distribution Original Accompanies Shipment, Copy to Coordinator Field Files

3.3.1 SAMPLE CUSTODY

By definition, a sample is under custody if:

1. It is in your possession or
2. It is in your view, after being in your possession or
3. It was in your possession and then you locked it up to prevent tampering or
4. It is in a designated secure area.

3.3.2 FIELD CUSTODY PROCEDURES

1. In collecting samples for evidence, collect only that number which provides a good representation of the media being sampled. To the extent possible, the quantity and types of samples and sample locations are determined prior to the actual field work. As few people as possible should handle the samples.
2. The field sampler is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.
3. Sample tags shall be completed for each sample using waterproof ink, unless prohibited by weather conditions. For example, a logbook notation would explain that a pencil was used to fill out the sample tag because a ballpoint pen would not function in freezing weather.
4. The Project Leader determines whether proper custody procedures were followed during the field work and decides if additional samples are required.

3.3.3 TRANSFER OF CUSTODY AND SHIPMENT

1. Samples are accompanied by a Chain-of-Custody Record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler, often through other persons, to the analyst and subsequently, sample storage in a custody room (if appropriate).
2. Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate custody record accompanying each shipment (each ice chest).

Shipping containers will be padlocked or sealed for shipment to the laboratory. The method of shipment, courier name(s), and other pertinent information, is entered in the "Remarks" section. (The general and specific procedures for shipping are described under "Shipping Procedures" of the document.)

3. Whenever samples are split (replicated) with a source or government agency, it is noted in the "Remarks" section of the Custody form and in the Field Logbook. The note indicates with whom the samples are being split and signed by both the sampler and the recipient. The person relinquishing the samples to the facility or agency should request the signature of a representative of the appropriate party, acknowledging receipt of the samples. If a representative is unavailable or refuses to sign, this is noted in the "Remarks" section.

4. All shipments will be accompanied by the Chain-of-Custody Record identifying its contents. The original record will accompany the shipment, and a copy will be retained by the Project Coordinator.

5. If sent by mail, the package will be registered with return receipt requested. If sent by common carrier, a Government Bill of Lading will be used. Air Freight shipments are sent collect. Freight bills, post office receipts and Bills of Lading will be retained as part of the permanent documentation (see Shipping Procedures Section).

3.3.4 FIELD CUSTODY - CONTRACTORS

All Regional field contracts managed by the S&AD will follow the above custody procedure when practical and appropriate.

All justifiable cases requiring a variant from the above shall be reviewed by the S&AD for approval. This review shall occur before the fact in normal operational procedures or as soon as possible after the fact for emergencies or other controlled situations. NOTE: The National Standard Tag and Custody Sheets are always used for all sampling protocols.

3.3.5 FIELD LOGBOOK

In addition to the sample tags, field sheets, analysis request sheets, custody sheets, and/or other contractor required forms, a serially numbered bound field logbook must be maintained by the Survey Leader and/or other Field Team members (as needed) to provide a daily record of significant events. In order to accommodate surveys of different magnitudes field logbooks will be ordered in different sizes.

All entries must be signed and dated. (All members of the Survey Team must use either (1) one single assigned field logbook or (2) a series of field logbooks assigned to specific team members.) The logbook(s) are kept as a permanent record - in enforcement cases, the logbook will become a part of the documentation file.

3.3.6 LABORATORY CHAIN-OF-CUSTODY PROCEDURE

Due to the evidentiary nature of enforcement type samples collected and analyzed in the laboratory during enforcement investigations (active and potential), possession must be traceable from the time received by the laboratory until they are introduced as evidence in legal proceedings or ultimately disposed. These samples include all samples collected by S&A staff and all samples received and/or analyzed by the S&A (except GLNPO samples). To maintain and document sample possession in the laboratory, the following Chain-of-Custody Procedure shall be followed:

A sample is under custody if:

1. It is in your possession or

2. It is in your view, after being in your possession or

3. It is in a secure area.

The actual procedure shall be as follows:

1. There shall be designated, a Sample Custodian and Alternate Sample Custodian(s). The Custodian accepts custody of the shipped or brought-in samples and verifies that the seal is intact and has not been tampered with, opens the case, reviews and verifies that the information on the tags are appropriate and that they match the information on the Field Chain-of-Custody Record. Other pertinent information, as to shipment pickup, courier, etc., is entered in the "Remarks" section of the Chain-of-Custody Record. The Chain-of-Custody Record form will remain in the official transfer registry within the laboratory. All appropriate transfers will be entered on that form. The samples will then be placed in a secured area, preferably, a dedicated area whose only access is the Custodian or Alternate Custodian (Custody Sample Storage Room).

2. The Custodian will assign samples from and to his/her custody to the appropriate analysts. The names and signature of individuals who receive samples are recorded on the Chain-of-Custody Record. Laboratory personnel are responsible for the care and

custody of samples from the time they are received until they are returned to the Custodian. The sample is considered in the Custody of the Analyst when it is in their possession, site, or in a secure area. The sample will be returned to the Sample Custodian when the Analyst completes the procedure.

3. When sample analyses and necessary quality assurance checks have been completed for identified enforcement cases, all identifying tags, data sheets, and laboratory records shall be retained as part of the permanent documentation file. Residual (unused) sample quantities will be retained in secure storage after the completion of analytical determinations until formal notice is given from Enforcement that the samples can be disposed of.

   The final date(s) of disposal will be recorded on the Chain-of-Custody Record by memorandum. For all samples not identified as enforcement cases, the file management will be the same as above except that all attendant samples shall be disposed of after three (3) months of storage. Disposal date(s) shall be documented to the documentation file by memorandum from the Sample Custodian.

4. It should be noted - with particularity - that all of the National Standard Tags associated with samples must be filed respectively in the appropriate survey documentation files, at the time the sample is disposed of or at the time of laboratory analysis, if all the sample volume is used during the analytical phases. This requirement means that tags associated with active samples are never discarded by the bench analysts or field staff---tags can only be discarded by procedures governing the documentation Control File.

3.4 PROCEDURES FOR AIR SHIPMENT OF ENVIRONMENTAL SAMPLES

The Air Shipping procedures are applicable to hazardous samples and are pertinent to EPA staff shipping samples for two primary reasons:

1. The U.S. EPA staff has personal responsibility to ensure that all shipped samples are in compliance with Department of Transportation (D.O.T.) regulations in 49 CFR, Parts 170-179.

2. The procedures, inherently, provide shipping procedures which significantly reduces the breakage or losage of sample during shipment.

The above regulations apply to all hazardous samples being air-shipped (contractor and EPA alike). A U.S. EPA Region V manual of shipping procedures is being developed. The manual will provide D.O.T. Regulations, U.S. EPA Order Information and other recommended shipping procedures.

4. DOCUMENTATION CONTROL PROGRAM

4.1 INTRODUCTION

The goal of the Region V Document Control Program is to assure that all project documents issued to and/or generated by S&AD and other Divisions' staff will be accountable (in legal connotation) when the project is completed. The system involves locating all cases affecting information in officially located documented files. These files shall be capable of consolidation into one central file or to stand alone containing a unique single document control number system, per case/survey, a document inventory procedure, and an evidentiary filing system all operated and managed by respective document control managers.

Accountable documents used or generated by S&AD employees include logbooks, field data records, correspondence, sample tags, graph, Chain-of-Custody records, bench sheets and photographic prints, etc. Each document bears a serialized number and document control number and is listed, with both numbers, in a project document inventory assembled by each Branch at the project's completion. Unused accountable documents may be disposed of after they are returned to the document control manager.

4.1.2 REGION V DOCUMENTATION CONTROL PROGRAM DESCRIPTION

Region V shall operate its Documentation Control Program at two levels, as described below.

1. The District Offices will maintain a Document Control Program file with an appointed document control file manager -- will receive all required field office investigation and laboratory data. Active enforcement Document Control files will be forwarded to the appropriate enforcement office for maintenance. Non-enforcement cases will be maintained by the District Offices' Document Control Program files for a period of at least five years . . . this file will be designated as the D.O. Branch Documentation Control File.

2. The Central Regional Laboratory will maintain a Document Control Program file with an appointed document control file manager -- will receive all required laboratory records and analytical data records. Active enforcement Document Control files will be forwarded directly to the District Office(s). . . this file will be designated as the CRL Branch Documentation Control File.

The above two level systems will allow the S&AD to handle all surveys and analytical analyses in the custody mode with little additional resources usage. This procedure will allow all survey data to be used in Court, if needed, without resampling.

4.1.3 DOCUMENT CONTROL NUMBER

The CRL has been assigning a sequential data set number to each survey of samples received at the Laboratory -- this number is preceeded by an identification code which identifies the office collecting the sample. As an example, EDO for Eastern District Office, CDO for Central District Office, etc. This data set numbering system will be used to generate the Document Control Program numbers for each field investigation study. This system of assigning Document Control numbers will apply to both sampling and non sampling surveys alike -- in essence, every field investigation situation and/or any S&AD reception of samples from other Divisions or other sources must result in the assignment of a document control number. The CRL Document Control Program manager will assign the document numbers to the data users' Document Control Program managers in blocks of series. Tracking of this numbering system will be done by use of a computer program.

4.1.4 SERIALIZED DOCUMENTS

The CRL has responsibility for the procurement of all forms and logbooks. Typically, several months supply of these numerically serialized materials will be assigned to each office conducting field surveys or collecting samples. The serialized series of numbers on the documentation materials will be recorded by the CRL Documentation Control Program manager. The field investigation offices' Document Control Program managers will assign the subject serialized materials to each project coordinator, who will in turn assign the subject serialized materials to the appropriate field investigation team or to the participating samplers -- the project coordinator has complete responsibility for insuring and documenting in his or her logbook, the sufficient and proper distribution of documentation control documents. Policy Note: All serialized documentation control documents will have a document control number affixed to it, prior to use on any survey.

4.1.5 PROJECT LOGBOOKS

Policy Note: For all field inspections (sampling and non-sampling inspection surveys) each inspector shall be issued a serialized bound logbook for recording all pertinent information concerning a given field inspection. The logbook of the project coordinator shall document the transfer of logbooks to other participating individuals who have been designated to perform specific tasks on the survey(s). All pertinent information shall be recorded in these logbooks from the time each individual is assigned to the project until the project is completed. These logbooks shall have an affixed document control number, prior to issuance, by the coordinator.

Specifically, entries into the logbook shall conform to the S&AD Field Operation Procedures Manual and the format of the logbooks.

Generally, logbook entries should be dated, legible and contain accurate and inclusive documentation of an individual's project activities. Because the logbook forms the basis for the subsequent written reports, it must contain only facts and observations. Language should be objective, factual and free of personal feelings or other terminology which might prove inappropriate. Entries made by individuals other than the person to whom the logbook was assigned are dated and signed by the individual making the entry.

Laboratory analysts who conduct their assigned project analyses in a mobile laboratory, or in other field facilities, are assigned a logbook by the Project Leader in the same manner as described above. In addition to information documenting the analysis performed, field analysts document in their logbooks or on bench sheets the date and results of any calibration of mobile laboratory equipment. A record is also kept of any incidents related to the survey; for example, the electricity going off in the laboratory, tampering with government vehicles or equipment, etc. Appropriate notations of visitors to the mobile laboratory, such as facility personnel, are entered in the logbook. All laboratory logbook information will be returned to the laboratory for forwarding to the Project Leader with final laboratory input.

All project logbooks are the property of Region V and are to be returned to the Project Leader when a survey assignment has been concluded. (Refer to S&AD Field Procedures Manual for further instructions on the use of the field logbook.)

4.1.6 FIELD DATA RECORDS - REGION V FIELD RECORD FORMS

Where appropriate, serialized Field Data Records (in the form of Region V Field Record Forms or bound logbooks with affixed document control numbers) are maintained for each survey sampling station or location and the project code and station number are usually recorded on each page. The Project Leader also numbers the FDR covers with the appropriate project code and station number. All in-situ measurements and field observations are recorded in the FDR's with all pertinent information necessary to explain and reconstruct sampling operations. Each page of a Field Data Record is dated and signed by all individuals making entries on that page. The Project Leader and the field team on duty are responsible for ensuring that FDRs are present during all monitoring activities and are stored safely to avoid possible tampering. Any lost, damaged or voided FDRs are reported to the Project Leader.

4.1.7 SAMPLE IDENTIFICATION DOCUMENTS

All necessary serialized sample tags (with affixed document control numbers) are distributed to field personnel by the Project Leader (or designated project participant) and the serial numbers are recorded in the Project Leader's logbook and each involved inspector's logbook. Individuals are accountable for each tag assigned to them. A tag is considered in their possession until it has been filled out, attached to a sample, and transferred to another individual with the corresponding Chain-of-Custody Record. At no time are any sample tags to be discarded and if any tags are lost, voided, or damaged, this is noted in the appropriate FDR or logbook immediately upon discovery and the Project Leader is notified. At the completion of the field investigation activities, all unused sample tags are returned to the designated individual who checks them against the list of assigned tag serial numbers. Tags attached to those samples split with the source or another government agency are accounted for.

4.1.8 CHAIN-OF-CUSTODY RECORDS

Serialized Chain-of-Custody Records (with affixed document control numbers) are assigned and accounted for in a manner similar to that used for sample tags. Double copy forms of the Custody Sheets are filled out in the field, according to the Region V Custody Procedures Manual. All field staff having charge (legal custody) of a sample(s) must sign the respective Custody Sheet(s). The Project Leader or a designated field custodian transmits the samples and properly signed Custody Sheets to the respective office custodian locally or may mail samples from the field directly to another U.S. EPA or contractor laboratory(s) -- the various options involving samples exchanges and Custody Sheet management are listed below:

1. Samples transported from the field by field staff and turned into the laboratory or office custodian -- Double copied Custody Sheets are signed by all field staff legally responsible for custody and turned over to the laboratory or office custodian.

2. Samples mailed from the field directly to the CRL --- Samplers and/or inspectors sign the double copied Custody Sheet(s) and forward original (top sheet) with the samples (Note: A copy of the Custody Sheet must be packaged with each package of samples shipped). The second Custody Sheet (copy) is turned over to the shipping office's sample custodian, either by the Project Leader or designated staff -- a record of this transaction is entered into the Project Leader's field logbook.

3. Samples mailed from the field directly to a contractor's laboratory -- Follow the protocol prescribed for the specific contract, such as VIAR and the additional Regional protocol(s), as specified by the Project Officer.

4. For all samples to be tracked by the local field laboratory(s) -- No CRL responsibility -- the original of the Custody Sheet will be turned over to the field office sample custodian and a copy (second page) of the signed Custody Sheet will be mailed to the contract laboratory stamped, "Sign and return to Sample Custodian". Generally, the contract will state that contract laboratory shall make and retain a copy of the subject Custody Sheet, prior to returning it. (Note: It is expected to be rare cases where samples will be sent to contract by S&AD offices and the CRL will not track the analyses.)

4.1.9 OTHER CONTROLLED DOCUMENTS

The analytical laboratory logbooks and data sheets that are used for various purposes, such as chemical, bacteriological and biological analyses, equipment calibration, etc., within the S&A Laboratories will be forwarded with the resulting data to the laboratory's Custody File.

Bench sheets and other similar documents each will show the respective Document Control Number, complete sample identification number, dates, name(s) of analyst(s) and other pertinent identification instrument printouts and other separate documents, except laboratory logbooks, will be labeled in a similar manner. These documents will be sent to the Evidentiary File along with the commensurate data.

All laboratory observations and calculations not recorded on bench sheets instrument graph printouts, etc., are entered in serialized logbooks assigned by a Branch custodian or other designated individual. Each numbered page of the logbook* actually consists of two pages - an original and a copy. The original copy is perforated so that it can be removed from the logbook to be forwarded to the Evidentiary File. When this type of logbook is unavailable, duplicates of individual pages will be identified and forwarded to the Evidentiary File.

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*The original page requires no carbon paper. The logbook is referred to as an NCR logbook.

The logbook needs to contain information sufficient to recall and describe succintly each step of the analysis performed because it may be necessary for the analyst to testify in subsequent enforcement proceedings*. Moreover, sufficient detail is necessary to enable others to reconstruct the procedures followed should the original analyst be unavailable for testimony. Any irregularities observed during the testing process need to be noted. If, in the technical judgment of the analyst, it is necessary to deviate from a particular analytical method, the deviation shall be justified and properly documented.

The serialized logbook assigned to an individual can be used for more than one project. However, only one project is discussed on any given page(s). That page(s) is labeled with the project code, dated, and signed by the individual. The custodian accounts for each completed laboratory logbook and the logbook is filed by the CRL Quality Assurance Coordinator or the Field Office Custodian.

The CRL Custodian or Field Office Custodian will issue serialized analytical laboratory logbooks for the recording of all information relating to the calibration, operation and maintenance of a specific laboratory instrument(s).

Usually, each specific piece of analytical equipment will require an instrument logbook. It is required that instrument information in the instrument logbooks be sufficiently documented (Document Control and Sample I.D. numbers, dates, and analyst(s) signature(s), so as to relate to specific sample runs.

4.1.10 PHOTOGRAPHS

When movies, slides or photographs are taken which visually show the effluent or emission source and/or any monitoring locations, they are numbered to correspond to logbook entries. The name of the photographer, date, time, site location, and site description are entered sequentially in the logbook as photos are taken. Chain-of-Custody procedures depend upon the type of film and the processing it requires. Once developed, the slides or photogrpahic prints shall be serially numbered corresponding to the logbook descriptions labeled and forwarded with the logbook in the logbook photo page format.

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*If sample merely requires routine documented analytical approaches, then notate same with "Samples analyzed using routine CRL Method #_____". These entries should only describe in a synoptic fashion what the chain of events were, it should not be a lengthy report in itself.

4.1.11 CORRECTIONS TO DOCUMENTATION

As previously noted, unless prohibited by weather conditions, all original data recorded in logbooks, sample tags, and other data sheet entries are written with waterproof ink. None of the accountable serialized documents listed above are to be destroyed or thrown away, even if they are illegible or contain inaccuracies which required a replacement document.

If an error is made on an accountable document assigned to one individual, that individual may make contemporaneous corrections simply by crossing a line through the error and entering the correct information. Any subsequent error discovered on an accountable document should be corrected by the person who made the entry. All subsequent corrections must be initialed and dated.

If a sample tag is lost in shipment, or a tag was never prepared for a sample(s), or a properly tagged sample was not transferred with a formal Chain-of-Custody tag, the following procedure applies. A written statement is prepared detailing how the sample was collected, air-dispatched or hand-transferred to the field or S&A laboratory. The statement should include all pertinent information, such as entries in field logbooks regarding the sample, whether the sample was in the sample collector's physical possession or in a locked compartment until hand-transferred to the laboratory, etc. Copies of the statement are distributed to the Project Leader and the appropriate office Custody Files.

4.1.12 CONSISTENCY OF DOCUMENTATION

Before release of a final project report from the CRL, the Chemistry and/or Biology Sections assemble and cross-check information on corresponding sample tags, custody records, bench sheets, analyst logbooks and sample entry logbooks to ensure that data pertaining to each particular sample is consistent throughout the record. The CRL Data Coordinator provides the final cross-check, prior to transmitting the data to the Project Coordinator and filing the laboratory's documentation information, such as logbooks, calibration information graphs, etc., in the Custody File. The Project Coordinator subsequently performs a cross-check of evidentiary data in his possession (FDRs, logbooks, custody records, etc.) to ensure that information recorded corresponds with that of the S&A contract laboratories' data reports and is consistent throughout the project record. A statement that all project evidentiary data has been accounted for accompanies the transfer of the data from the CRL to the Field Office or data user and the transfer of the data from the Field Offices to the Regulatory Divisions.

4.1.13 DOCUMENT NUMBERING SYSTEM AND INVENTORY PROCEDURE

To provide document accountability to the appropriate individuals, each of the document categories discussed above features a unique serialized number for each item within the category.

All other documents (such as recorder graph paper, data calculations sheets, memoranda, correspondence, photos, etc.,) which are generated during a project are sequentially numbered and affixed with the documentation number and sample number(s).

4.1.14 BRANCH FILES

After a Branch has completed its work for a particular investigation, all documents generated from that project should be assembled by the Project Coordinator and turned over to the Documentation Control Coordinator who will enter the materials into the Branch file. Individuals may retain clean (no handwritten comments) copies of documents for their personal files but shall insure that the original or similar copy is in the Branch file. The Project Coordinator is responsible for assuring the collection, assembly, and inventory of all documents relative to a particular project at the time the project objectives are completed and the Branch Documentation Control Coordinator is responsible for maintaining the integrity of the accountable file. All records leaving the file must be signed out and signed in. The file itself will be kept locked.

4.2 EVIDENTIARY FILE

The S&AD Branch Documentation Control Coordinator associated with the responsible Project Coordinator for specific field projects will automatically forward the entire S&AD documentation control file for all custody surveys/samples to the appropriate enforcement office. This means that for all custody surveys, the S&AD Branch Project Coordinator and the associated Documentation Control Coordinator shall receive the files from all participating S&AD Branches and in turn forward the S&AD collated file to the designated Enforcement Evidentiary File Coordinator. In the other case, when routine surveys (those designated as noncustody enforcement) which will be handled by S&AD in the same fashion as enforcement designated surveys, the individual S&AD Branch level Documentation Control Coordinators will maintain their parts of the file under standard operating custody procedures. If the routine survey reverts to enforcement designated custody, the Branch Documentation Control Coordinators will forward their parts of the file to the Branch Project Coordinator for collation and review and then forward to the Evidentiary File by the attendant Branch Documentation Control Coordinator.

The format of the Evidentiary File is to arrange each project by Branch documents and includes the following document classes:

A. Project Plan

B. Project Logbooks

C. Field Data Records

D. Sample Identification Documents

E. Sample/Chain-of-Custody tag

F. Analytical logbooks, Lab Data, Calculations, Bench Cards, Graphs, etc.

G. Correspondence

1. Intra-office
2. EPA
3. Industry
4. Record of Confidential Material

H. Report Notes, Calculations, etc.

I. References, Literature

J. Sample (on-hand) Inventory

K. Check-out Logs

L. Litigation Documents

M. Miscellaneous - photos, maps, drawings, etc.

N. Final Report

Once deposited in the Branch Documentation File, documents may only be checked out through the Documentation Control Coordinator or designated representative. The file will be kept locked at all times.

5. QUALITY ASSURANCE

5.1 INTRODUCTION

Environmental Protection Agency (EPA) Policy, enunciated in memoranda of May 30 and June 14, 1979, requires participation in a centrally managed Quality Assurance (QA) program by all EPA Regional Offices, Program Offices, EPA Laboratories and the States.

This includes those monitoring and measurement efforts mandated or supported by EPA through regulations, grants, contracts, or other formalized agreements. The QA programs for the States in Region V will be cooperatively developed with them and implemented through the Regional Office.

The Office of Research and Development (ORD) has been given responsibility for developing, coordinating, and directing the implementation of the Agency QA program. In addition, an Agency QA Advisory Committee, chaired by ORD and with representatives from the Program Offices, Regional Offices, Staff Offices, and the States, has been established to coordinate this effort.

As an initial step in implementing this policy, QA Plans (Programs) must be prepared by all EPA-supported or-required environmental monitoring and measurement activities per the specifications of EPA's guidance document QAMS-004/80.

Such a program has been documented by the Quality Assurance Office (QAO) in Report No. EPA - 905/4-80-001, title "QA program, Guidelines and Specifications, Criteria, and Procedures, Region V". The purpose of this report (manual) is to describe the QA program for Region V, U.S. EPA that will produce a numerical estimate of the reliability of all data values reported or used by the Region.

5.2 POLICY AND OBJECTIVES

QA is necessary at each organizational level to insure high quality data. Each organization should have a written QA policy.

This policy statement provides the framework within which a Region develops and implements its QA program. The policy statement must describe the Region's goals and specify those requirements and activities needed to realize these goals. Paralleling the Administrator's directive of May 30, 1979, the Region's policy statement must emphasize those requirements and activities needed to ensure that all data obtained are of known quality. Policy is to be directed towards a formal commitment of time and resources necessary to ensure that data are as precise and accurate and as complete and representative as required.

A policy statement meeting the above specifications was approved by the Regional Administrator for Region V, on January 20, 1980. Region V's policy statement is listed in Section 2 of Report No. EPA - 905/4-80-001. This policy has been distributed to all Regional and State organizational monitoring activities so Regional policy and scope of coverage are known. This policy statement indicates managements commitments to QA throughout the data generating and processing operations.

The primary goal of the Region V, QA program is to define and improve the reliability (accuracy and precision) of data generated and used by the Region, per Headquarters' mandate and Agency regulations. There must be a mechanism for so doing. In order to measure or estimate changes in data quality, the quality must be expressed in measurable (numerical) terms. Therefore, the first priority in the Region V QA program is to establish and implement a method to define and quantitate the program product - data quality. This includes data from Regional program, State and local Agencies, grants and contracts. Each evaluation and review process such that all of the activities that influence the quality of data are performed by appropriated trained staff, by methods acceptable to EPA on instruments that are approved and maintained and each data collection activity has a documented quality controlled program.

Other QA program objectives are listed in Section 3 of Report No. EPA - 905/4-80-001.

5.3 QUALITY ASSURANCE MANAGEMENT

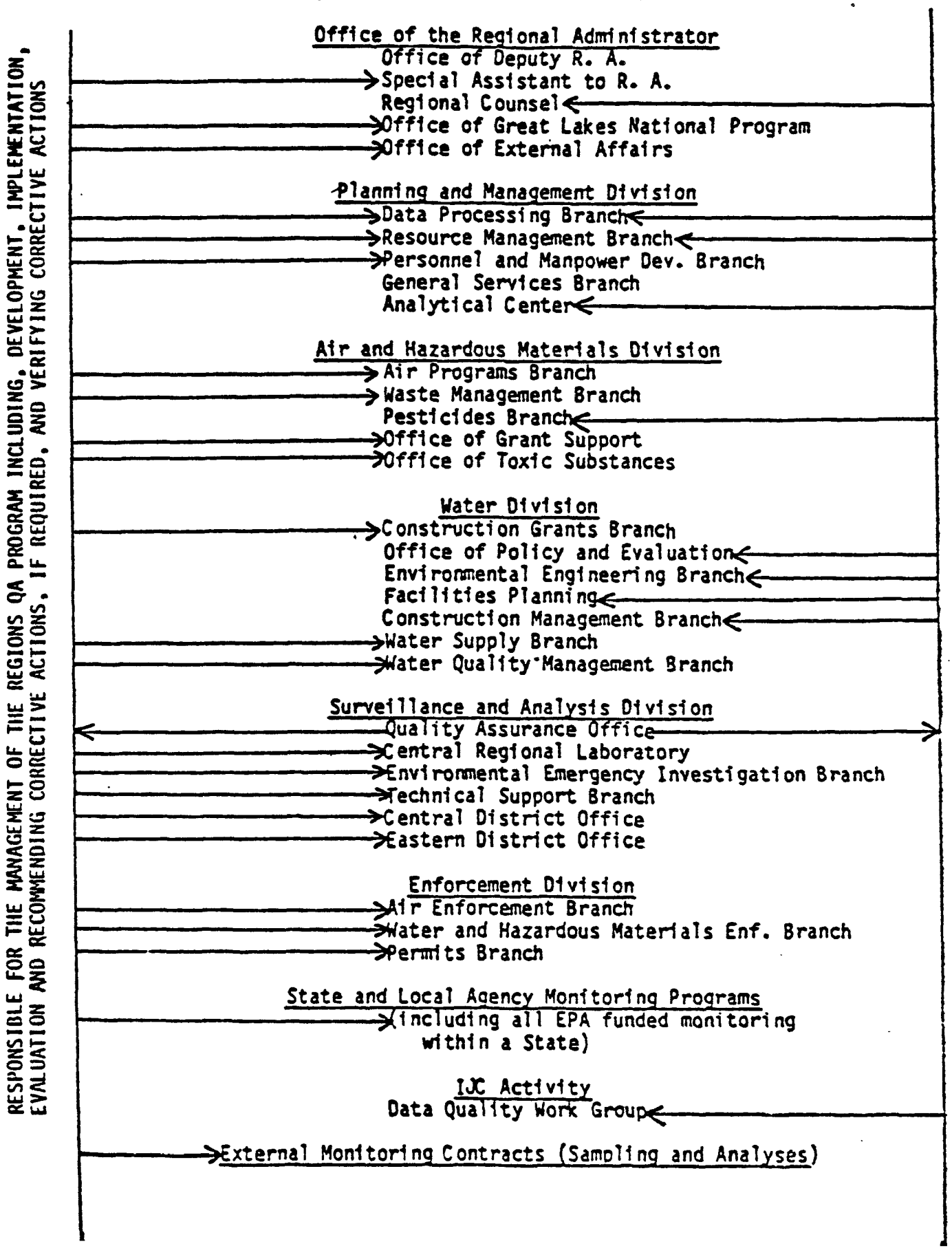
The Agency's QA policy statement specifies that the Regional Administrator is responsible for the implementation and coordination of the mandatory QA activities within Region V. This responsibility also includes external monitoring and measurement activities of States, local agencies, contractors, grantees, and others covered by the Agency QA plan. The Director of the Surveillance and Analysis Division (S&AD), through the Chief of the QAO, assures that QA objectives are met for each monitoring project conducted within Region V. The QAO is responsible for developing and implementing procedures to insure the reliability of data supporting the air, pesticides, solid waste, and toxic substances programs in the Air and Hazardous Material Division (AHMD), the public drinking water, ambient surface and groundwater, and industrial and domestic wastewater programs in the Water Division, all enforcement monitoring data, the International Joint Commission and harbor dredging progenerating environmental data. The QAO has responsibility for evaluating the QA and quality control (QC) programs for State Program Grants in Ambient Air Quality Monitoring, Water Quality Monitoring and for all monitoring contracts initiated by Region V.

Specific details of this responsibility are delineated in Section 4 of Report No. EPA - 905/4-80-001. The organizational structure into which the QA management interacts, as established by the Region's QA policy is shown in Figure 10.

5.4 ELEMENTS OF A QUALITY ASSURANCE PLAN

Elements to be addressed for the preparation of QA programs are contained in Section 8 of Report No. EPA - 905/4-80-001.

FIGURE 10 RELATIONSHIP OF THE QUALITY ASSURANCE FUNCTION TO OTHER REGIONAL PROGRAM FUNCTIONS -



5.5 DATA COLLECTION

Data quality changes occurring during data collection can come from six major activities: a) formulating sound objectives for the sampling program, b) collecting representative samples, c) maintaining sample integrity through proper sample handling and preservation, d) adhering to appropriate sample identification and, where needed, chain-of-custody procedures, e) practicing QA procedures in the sample transportation, storage, and preparation processes, and f) using proper analytical techniques complete with appropriate QC activities to generate the actual data.

5.5.1 SAMPLING METHODOLOGY

The objective of sampling is to obtain a representative portion of the total environment under investigation.

Sampling plan objectives are determined by the following activities: a) planning (areawide or basin), b) permits, c) compliance, d) enforcement, e) design, f) process control, and g) research and development. The types of sampling programs to be employed, depending on suitability to program objectives, include reconnaissance surveys, point-source characterization, intensive surveys; fixed-station network monitoring, groundwater monitoring, ambient air and stationary source emission monitoring and special surveys involving chemical, biological, microbiological and radiological monitoring.

As a minimum a sampling plan (QA Project Plan) shall be prepared and contain, as a minimum the factors listed below. The plan must be approved by the QAO prior to the start of the task.

5.5.2 QUALITY ASSURANCE PROJECT PLANS

QA Project Plans for monitoring and measurement projects should contain the following, as applicable:

1. Title Page, with provision for approval signatures
2. Table of Contents
3. Project Description
4. Project Organization and Responsibilities
5. QA objectives for measurement data in terms of precision, accuracy, completeness, and representativeness
6. Sampling Procedures

7. Calibration Procedures and References

8. Analytical Procedures (manual and automated)

9. Data Analysis, Validation, and Reporting (manual and automated)

10. Internal Quality Control Checks

11. Performance and System Audits

12. Preventive Maintenance Procedures and Schedules

13. Sample Custody

14. Specific procedures to be used to routinely assess and document data precision, accuracy, and completeness of specific measurement parameters involved

15. Corrective Action

16. Quality Assurance Reports to Management

The QA Project Plans will be prepared in document control format, with provision for revision, as needed, and with a record of the official distribution.

Note: See the "Guidelines and Specifications for Preparing QA Project Plans, QAMS-005/80" for more detail.

5.5.3 ANALYTICAL METHODOLOGY

The analytical laboratory provides qualitative and quantitative data for use in decision making. To be valuable, the data must accurately describe the characteristics and concentrations of constituents in the samples submitted to the laboratory. In many cases, because they lead to faulty interpretation, approximate or incorrect results are worse than no results at all.

Uniformity of methodology within a single laboratory as well as among a group of cooperating laboratories is required to remove methodology as a variable when there are many data users. Uniformity of methodology is particularly important when several laboratories provide data to a common data bank (such as STORET) or cooperate in joint field surveys. A lack of uniformity of methodology may raise doubts as to the validity of the reported results. If the same constituents are measured by different

analytical procedures within a single laboratory, or by a different procedure in different laboratories, it may be asked which procedure is superior, why the superior method is not used throughout, and what effects the various methods and procedures have on the data values and their interpretations.

Physical and chemical measurement methods used in environmental laboratories should be selected by the following criteria:

1. The selected methods should measure desired constituents or environmental samples in the presence of normal interferences with sufficient precision and accuracy to meet the environmental data needs.

2. The selected procedures should use equipment and skills ordinarily available in the average environmental laboratory.

3. The selected methods should be sufficiently tested to have established their validity.

4. The selected methods should be sufficiently rapid to permit repetitive routine use in the examination of large numbers of environmental samples.

The restriction to the use of EPA methods in all laboratories providing data to EPA permits the combination of data from different EPA programs and supports the validity of decisions made by EPA.

As a minimum analytical methodology (laboratory and field) is to be documented per the specifications listed in Sections 8.3, 8.4, 8.5, 8.6 and 8.7 of Report No. EPA - 905/4-80-001.

The QAO requires that the methodology be carefully documented. In some reports it is stated that a standard method from an authoritative reference was used throughout an investigation, when close examination has indicated, however, that this was not strictly true. Standard methods may be modified or entirely replaced because of recent advances in the state-of-the-art or personal preferences of the laboratory staff. Documentation of measurement procedures used in arriving at laboratory data should be clear, honest and adequately referenced, and the procedures should be applied exactly as documented.

Reviewers can apply the associated precision and accuracy of each specific method when interpreting the laboratory results. If the accuracy and precision of the analytical methodology are unknown or uncertain, the data user may have to establish the reliability of the result he or she is interpreting before proceeding with the interpretation.

5.6 DATA PROCESSING

Data processing includes collection, validation, storage, transfers and reduction. Precautions shall be taken each time the data are reduced, recorded, calculated and transcribed to prevent errors and the loss of information.

All QC Plans (Project Plans) must document the mechanisms to deal with the requirements listed below. Those mechanisms shall be as stringent as those specified in Sections 9.1, 9.2 and 9.3 of Report No. EPA - 905/4-80-001.

5.6.1 COLLECTION

Each QC Plan (Project Plan) shall address the checks which must be used to avoid errors in the data collection process.

5.6.2 VALIDATION

Data validation is defined as "the process whereby data are filtered and accepted or rejected based on a set of criteria." Since this aspect of QC may include various forms of manual or computerized checks, criteria for data validation shall be specified in each QC Plan (Project Plan).

5.6.3 STORAGE

Each QC Plan (Project Plan) shall indicate how specific types of data will be stored, and the duration of storage. For every stage of data processing at which data are stored, procedures shall be established to ensure data integrity and security.

5.6.4 TRANSFERS

Each QC Plan (Project Plan) shall describe procedures which shall be used to ensure that data transfer is error-free, and that no information is lost in the transfer. Examples of data transfers are: copying raw data from a notebook onto a data form for key-punching, converting a written data set to punched cards, copying from computer tape to disk and telemetering. Data transfer steps contained in each QC Plan shall be kept to a minimum.

5.6.5 REDUCTION

Each QC Plan (Project Plan) shall contain procedures for ensuring and verifying the correctness of data reduction processes. Data reduction includes all processes which change either the form of

expression or quantity of data items. It is distinct from data transfer in that it entails a reduction in the size (or dimensionality) of the data set. The QC Plan must identify the processes used to obtain the reduced data.

5.7 DATA QUALITY ASSESSMENT

The quality of all environmental data generated and processed shall be assessed for completeness, accuracy, precision, representativeness, and comparability based upon the QC Project Plans. All reported data shall include the associated precision and accuracy. Protocol for minimum documentation shall be per specifications listed in Section 11 of Report No. EPA - 905/4-80-001.

The results of each data quality assessment shall be provided in the semiannual QC reports and in project progress and final reports.

5.7.1 COMPLETENESS

Each QC Plan (Project Plan) shall identify the quantity of data needed to support a planning or enforcement action. Completeness shall take into consideration the potential for environmental change with respect to time or timing.

5.7.2 ACCURACY

Each QC Plan (Project Plan) contain a mechanism which will demonstrate that the reported data are favorably comparable to the true value(s). Examples of activities to assess accuracy are:

1. Traceability of Instrumentation - Each measurement device shall be assigned a unique identification number. Documentation shall identify the specific measurement device, where and when used, maintenance performed, and the equipment and standards used for calibration.

2. Traceability of Standards - Each standard and each measurement device shall be calibrated against a standard of known and higher accuracy. All calibration standards shall be traceable to available National Bureau of Standards (NBS) standards. If NBS standards are not available, other primary standards shall be used.

3. Traceability of Samples - Each sample shall be assigned a unique identification number. Documentation shall identify sampling time, place and action taken on each sample.

4. Traceability of Data - Data shall be documented to allow complete reconstruction, from initial field records through data storage system retrieval.

5. Methodology - If available, only Federal reference, equivalent, or approved alternate test methods shall be used.

6. Reference or Spiked Samples - Recoveries shall be within predetermined acceptance limits.

7. Performance Audits - Each environmental monitoring program shall continually participate in the EPA National and Regional Performance Audit Programs. Each program shall develop a system of intraprogram performance audits to demonstrate that all measurements are within acceptable, predefined control limits.

5.7.3 PRECISION

Each QC Plan (Project Plan) shall contain a mechanism which will demonstrate the reproducibility of the measurement process. Examples of activities to assess precision are:

1. Replicate Samples - Replicate sample data shall be within predetermined acceptance limits.

2. Collocated Monitors - Sample data from collocated monitors shall be within predetermined acceptance limits.

3. Interprogram Testing - Sample data from independent organizations shall be within predetermined acceptance limits.

4. Instrumental Checks - Each measurement device shall have routine checks performed to demonstrate that variables are within predetermined acceptance limits. Examples of checks include:

    1. Zero and span

    2. Noise levels

    3. Drift

    4. Flow rate

    5. Linearity

5.7.4 REPRESENTATIVENESS

Each QC Plan (Project Shall) contain procedures to ensure that each sample collected, as accurately and precisely as possible, represents the media sampled. Examples of activities to assess this representativeness are:

1. Site Purpose - Each sampling site shall have a preidentified, documented purpose.

2. Site Description - Each sampling site shall be specifically identified by location and by suitability to meet the preidentified purpose.

3. Site Photodocumentation - The conditions under which each sample was collected shall be described. Conditions include such items as:

    1. Stream flow

    2. Wind speed and direction

    3. Temperature

    4. Barometric pressure

5.7.5 COMPARABILITY

Each QC Plan (Project Plan) shall contain procedures to assure the comparability of data. Examples are:

1. Consistency of reporting units

2. Standardized siting, sampling, and analysis

3. Standardized data format

5.8 CORRECTIVE ACTION

Each QC Plan (Project Plan) shall include provisions for written requirements establishing and maintaining reporting or feedback channels to the appropriate QA management authority to ensure that early and effective corrective action can be taken when data quality falls below required limits. Each QC Plan (Project Plan) shall also include provisions to keep responsible management informed of the performance of all data collection systems. Each QC Plan (Project Plan) shall describe the mechanism(s) to be used when corrective actions are necessary. Corrective action shall relate to the overall QA management scheme: Who is responsible for taking corrective actions, when corrective actions are to be taken and who ensures corrective actions were taken and produced the desired results.

Corrective action shall be minimized through the development and implementation of routine internal program controls prior to an adverse program impact. Examples of controls include:

1. Each measurement system shall have predetermined limits to identify when corrective action is required, before data become unacceptable.

2. A procedure shall be established for each measurement system to identify the corrective action which will be taken when the warning or control limits are exceeded.

3. For each measurement system, the level within the organization responsible for taking corrective action, and also the level within the organization responsible for approving corrective action.

Results of the following QC activities may also initiate corrective actions:

1. Performance audits

2. System audits

3. Interprogram comparison studies

4. Failure to adhere to the approved QA Program Plan, QA Project Plan or Standard Operating Procedures

5. Loss of litigation

6. Justified public peer criticism