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**QUALITY ASSURANCE PROJECT PLAN (QAPP)
REVIEW AND MODIFICATION**

09/13/90

**DOE-1897-90
DOE-FSO/EPA
2
LETTER**



Department of Energy

FMPC Site Office
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1736

SEP 13 1990
DOE-1897-90

Ms. Catherine A. McCord
U. S. Environmental Protection Agency
Region V - 5HR-12
230 South Dearborn Street
Chicago, IL 60604

Mr. Graham E. Mitchell
Ohio Environmental Protection Agency
40 S. Main Street
Dayton, OH 45402

Dear Ms. McCord & Mr. Mitchell:

QUALITY ASSURANCE PROJECT PLAN (QAPP) REVIEW AND MODIFICATION

1547 As stated in our July 9, 1990 letter, the QAPP has been reviewed and the proposed change pages are enclosed. Work is continuing on broader changes to this document including an additional appendix on data validation.

If you have any comments on these change pages, please provide them to Oba Vincent of my staff within thirty days of receipt of this letter. After this time period, if there has been no response, we will forward actual change pages to all personnel and Organizations on distribution for the QAPP document. If you have any questions, please contact Oba Vincent at (513) 738-6937 or FTS 774-6937.

Sincerely,

Andrew P. Avel
FMPC Remedial Action
Project Director

DP-84:Vincent

Enclosure: As stated

cc w/encl.:

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J. Wood, ASI

2.0 PROJECT DESCRIPTION

The tasks that comprise the site characterization for the remedial investigation are as follows: description of current situation, work plan requirements, site investigation, site investigation analysis, laboratory and bench-scale studies, reports, community relations support, and assistance with the Federal Facility Compliance Agreement (FFCA).

Laboratory analytical support levels are to comply with Section 4.3 of EPA/540/G-87/003 for the analysis of FMPC samples. The support levels are as follows:

Level I--field screening or analysis using portable instruments. Results are often not compound-specific and not quantitative, but results are available in real-time.

Level II--field analyses using more sophisticated portable analytical instruments; in some cases, the instruments may be set up in a mobile laboratory on site. There is a wide range in the quality of data that can be generated. The quality depends on the use of suitable calibration standards, reference materials, sample preparation equipment, and the training of the operator. Results are available in real-time or several hours.

Level III--all analyses performed in an off-site analytical laboratory. Level III analyses may or may not use Contract Laboratory Program (CLP) procedures, but do not usually utilize the validation or documentation procedures required

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of CLP Level IV analysis. The laboratory may or may not be a CLP laboratory.

Level IV--CLP routine analytical services. All analyses are performed in an off-site CLP analytical laboratory using CLP protocols. Level IV is characterized by rigorous QA/QC protocols and documentation.

Level V--analysis by non-standard methods. All analyses are performed in an off-site analytical laboratory which may or may not be a CLP laboratory. Method development or method modification may be required by specific constituents or detection limits. CLP special analytical services are Level V.

The following is a list of laboratories and the Analysis Support Levels currently used:

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<u>Laboratory and the Analysis Support Level</u>	<u>Type of Analysis</u>
Radiological Sciences Laboratory (RSL) (V) Oak Ridge, Tennessee	Radiological
Mixed Waste Laboratory (MWL) (IV) Oak Ridge, Tennessee	Chemical
Middlebrook Pike Laboratory (IV) (1, Organics only;) Knoxville, Tennessee	Chemical
Export Laboratory (III and IV) (1, Organics only;) Pittsburgh, Pennsylvania	Chemical, Geotechnical
Special Analysis Laboratory (V) Knoxville, Tennessee	Dioxins
Santa Clara Valley Laboratory (III) (1, pesticides only) San Jose California	Organo- phosphorus pesticides
Cerritos Laboratory (II) (1, Organics only;) Cerritos, California	Chemical
Austin Laboratory (IV) Austin, Texas	Chemical
PEI Laboratory (IV) (1, Organics only) Cincinnati, Ohio	Chemical
Edison Laboratory (IV) Edison, New Jersey	Acute & Chronic
Westinghouse Laboratory (V) Cincinnati, Ohio	Radiological
Chem-Nuclear Laboratory (III) Greenville, South Carolina	Chemical
Net Laboratory (III) Dayton, Ohio	Chemical

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Laboratory-specific attachments of the laboratories are supporting procedures to the QAPP and are controlled documents that are considered proprietary information. Copies of applicable documents can be supplied to DOE or others as directed by DOE for this project, if requested.

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3.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

3.1 ORGANIZATION

As prime contractor, ASI is the project director and is directly responsible to DOE for the success of this project. ASI has organized a project team with extensive experience in the technical and administrative disciplines required for this project. A major subcontractor to ASI is IT Corporation (IT), with analytical laboratory capabilities and certifications conforming to U.S. EPA specifications, mixed waste capabilities, health physics technology, and RI/FS experience in hydrogeology and feasibility studies.

The Fernald FMPC RI/FS Project, though basically divided into RI and FS phases, involves diverse technical disciplines, common to both phases. The project organization has been structured to include experienced professional specialists in these various disciplines. The project organization chart is shown in Figure 3-1.

3.2 AUTHORITY AND RESPONSIBILITY

3.2.1 PROJECT DIRECTOR

The Project Director has total responsibility for the completion and technical adequacy of the RI/FS, and is responsible for the accomplishment of the RI/FS on schedule and within allocated cost. The Project Director will have responsibility for technical, financial, and scheduling matters. Other duties, as necessary, include:

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PROJECT ORGANIZATIONAL CHART

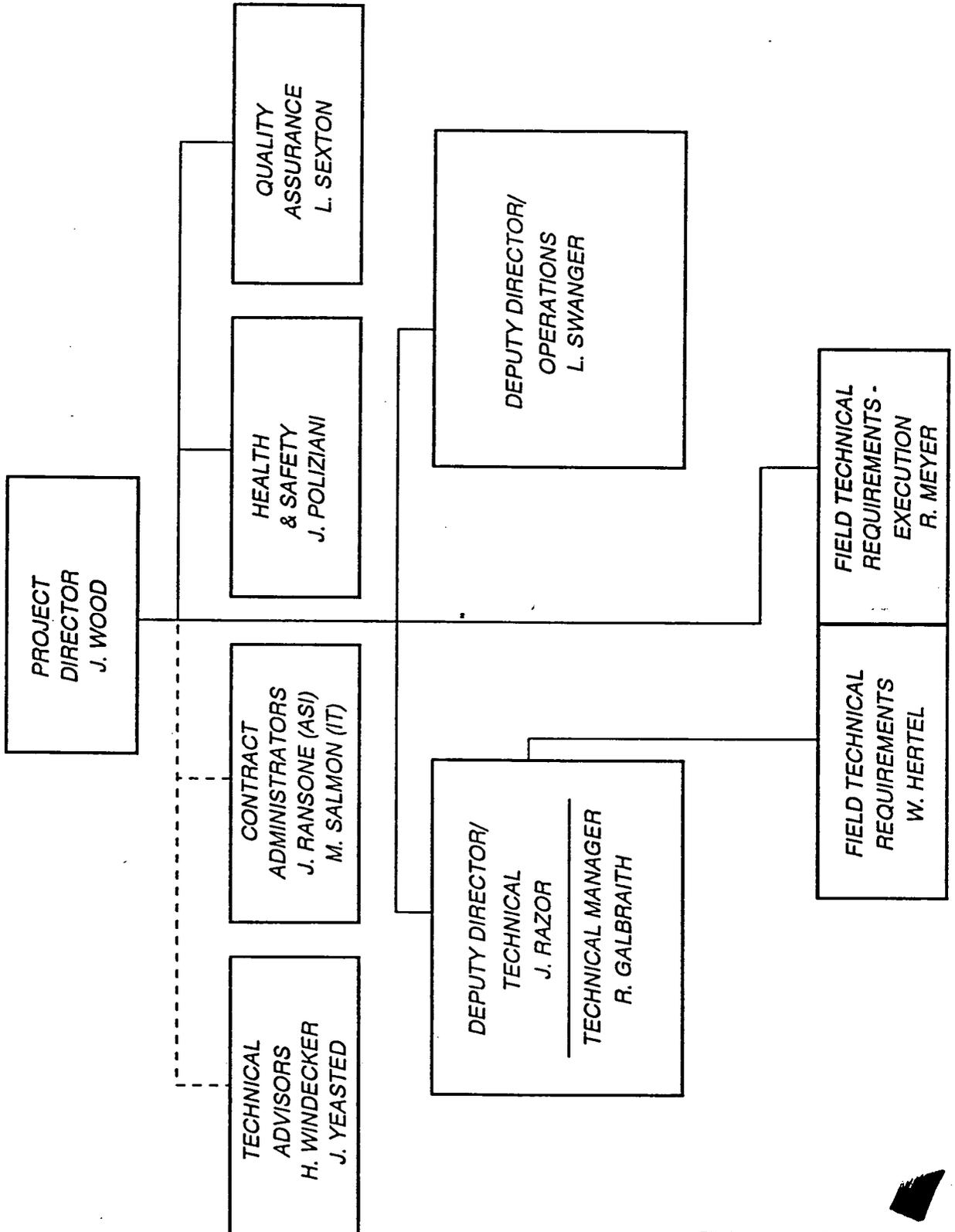


FIGURE 3-1

PROJECT ORGANIZATIONAL CHART

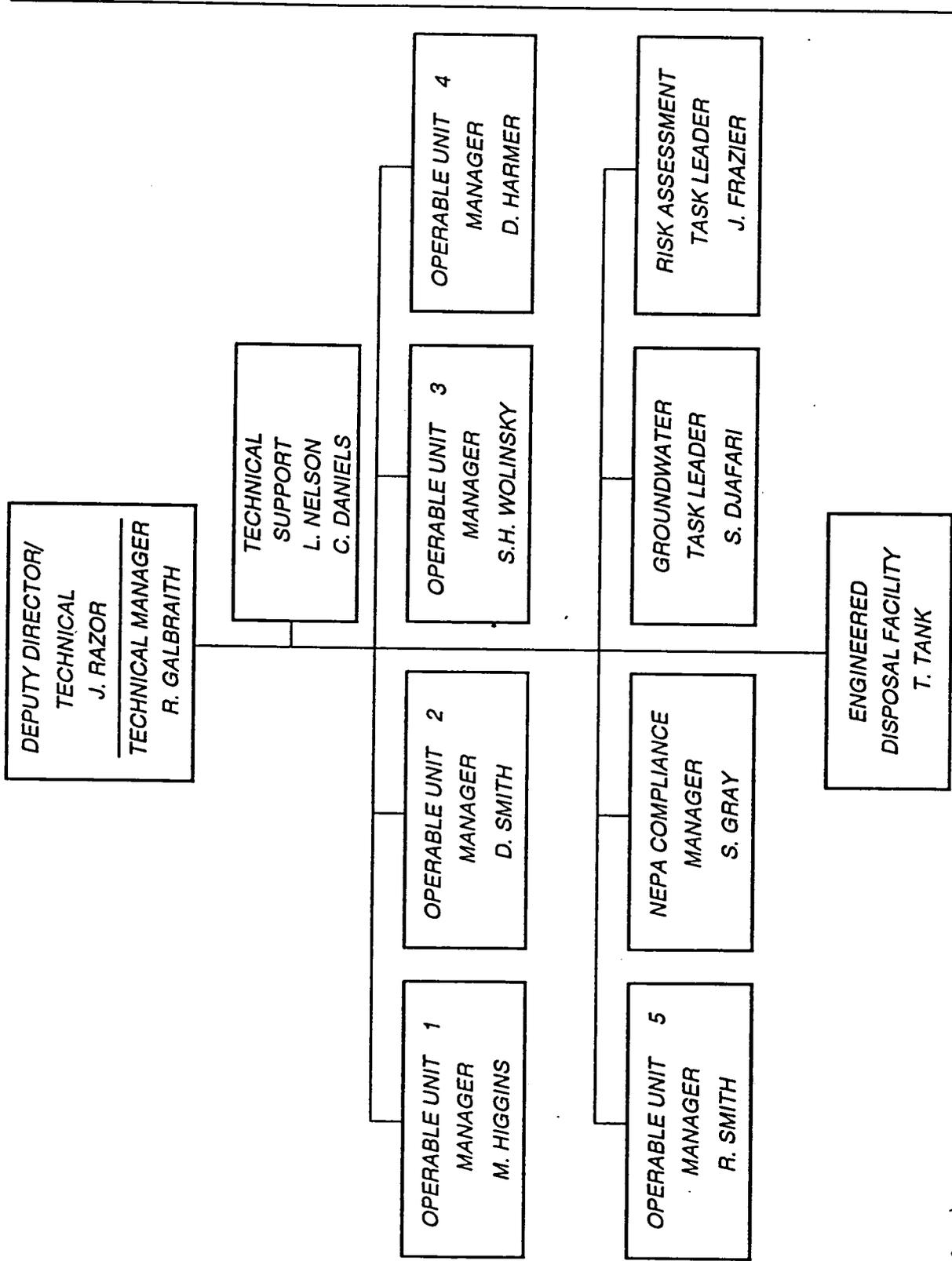


FIGURE 3-1 (cont)

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PROJECT ORGANIZATIONAL CHART

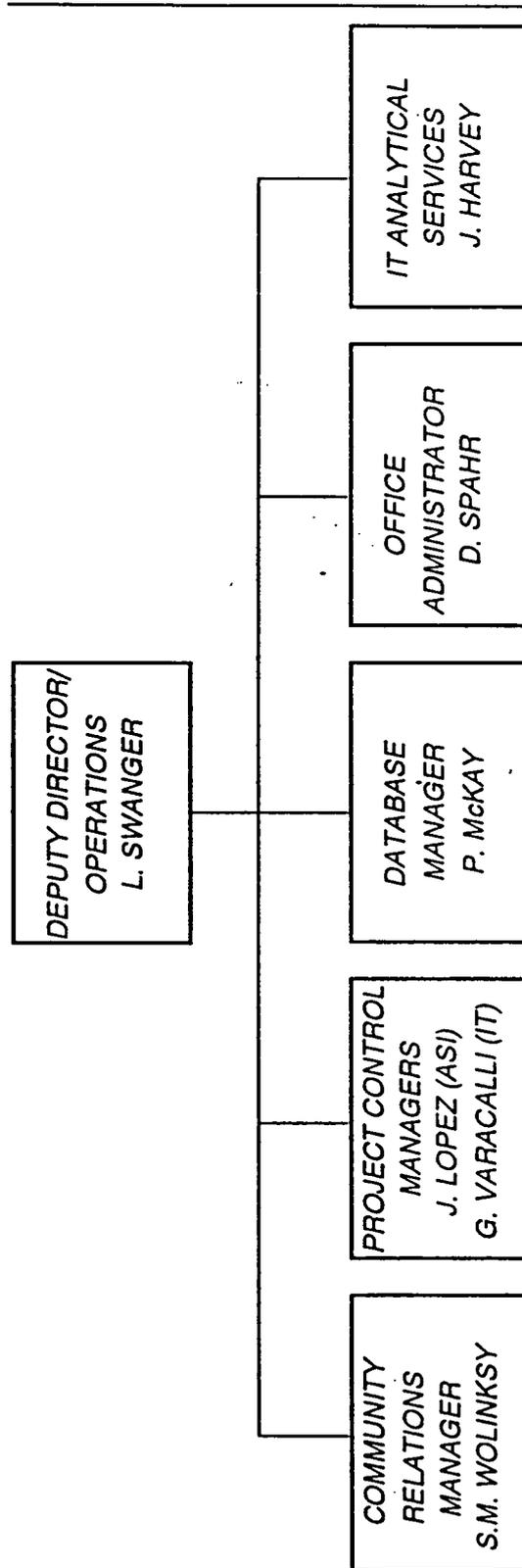


FIGURE 3-1 (cont)

PROJECT ORGANIZATIONAL CHART

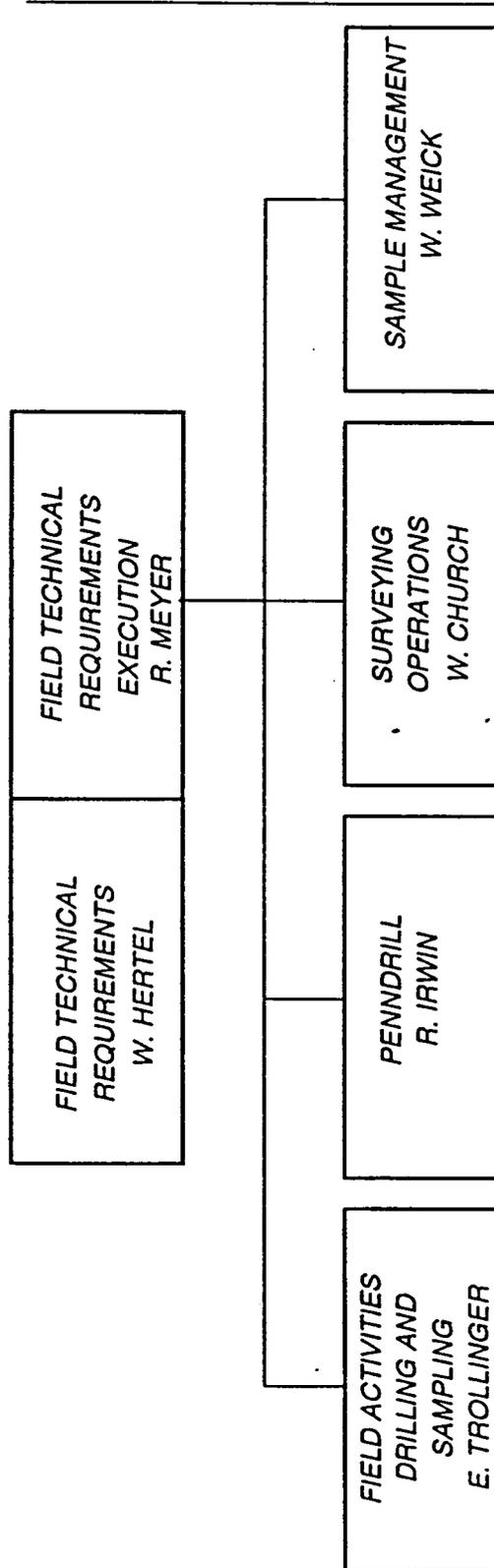


FIGURE 3-1 (cont)

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- Procurement, along with administrative personnel, and supervision of subcontractor services;
- Assignment of duties to the project staff and orientation of the staff to the needs and requirements of the project;
- Review of project-specific procedures and internally prepared plans, drawings, and reports;
- Dissemination of project-related information to U.S. EPA and the public as requested by WMCO/DOE;
- Serving as liaison between the project staff and other internal groups, such as the laboratories, Quality Assurance (QA), and Health and Safety.

3.2.2 DEPUTY DIRECTOR/TECHNICAL

The Deputy Director/Technical reports directly to the Project Director, and is responsible for the technical quality of RI/FS tasks. Responsibilities include:

- Technical review of procedures, plans, drawings, and reports;
- Supervision and coordination of technical RI/FS tasks and activities; and
- Reporting the project technical status and progress to the Project Director.

3.2.3 DEPUTY DIRECTOR/OPERATIONS

The Deputy Director/Operations reports directly to the Project Director and is responsible for coordination of all activities related to Community Relations, Project Control Managers, Database Managers, Office Administrator, and IT analytical services. Additional responsibilities include issuing technical cost, schedule, and progress reports as directed by the Project Director.

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3.2.4 FIELD TECHNICAL REQUIREMENTS EXECUTION MANAGER

The Field Technical Requirements Execution Manager reports to the Project Director, supervises the Penn Drill Contractors and is responsible for negotiations with off-site landowners. Additional responsibilities include:

- Schedules and details of the field work
- Supervises the Sample Management crew
- Supervises the survey crew

3.2.5 QUALITY ASSURANCE OFFICER

The QA Officer reports to the Project Director and is responsible for guidance in the development of the QAPP and control of project QA/QC activities. The QA Officer will provide the necessary guidance to the project and laboratory staffs on quality-related matters and perform project audits and surveillance. The QA Officer has the authority and responsibility to identify quality problems and initiate, recommend, or provide corrective actions. The QA Officer verifies the implementation of the corrective actions. Other duties include:

- Notification of personnel of nonconformances and changes in QA procedures and verifying the implementation of corrective action;
- Determination of audit and surveillance schedules and conducting the audit and surveillance;
- Review and approval of quality-related project documents;
- Serving as the official contact for all QA matters for the project;

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- Identification of QA needs, resolving QA problems, answering requests for guidance or assistance, and verifying administration of nonconformances; and
- Verification that data meets the intended work objectives.

The QA Officer may take actions independent of the project group to stop the project, if required for compliance with the QAPP.

3.2.6 HEALTH AND SAFETY OFFICER

The Health and Safety Officer is responsible for preparing and implementing a Health and Safety Plan which satisfies state and federal regulations and is consistent with site conditions. The Health and Safety Officer may take actions independent of the project group to stop the project, if required, for compliance with the Health and Safety Plan.

The Health and Safety Officer is responsible for the day-to-day implementation of the Health and Safety Plan during site activities. Specifically, the officer's responsibilities include:

- Issuing personnel protective equipment and proper dosimetry;
- Approval of personnel protective equipment and safety procedures specified in task plans or work procedures;
- Maintaining and using field monitoring equipment necessary to define on-site hazards associated with conducting RI activities;
- Designating personnel protection levels and deciding protection level upgrades; and
- Providing necessary guidance to the project and laboratory staffs so they can safely perform their functions in accordance with federal and state regulations.

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- Implementing the requirements of 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.

Personnel staffing these key positions are identified in Table 3-1. Thirty days notice is provided to DOE prior to any changes in this listing.

3.3 PROJECT COMMUNICATIONS

Incoming project-related materials in the form of correspondence, sketches, logs, authorizations, or other information will be routed to the Project Director, or designee, after the original is marked with the date received. The Project Director, or designee, will then determine which personnel will review the materials and route the materials accordingly.

As soon as practical, incoming correspondence originals will be placed in the project central file at the ASI/Fernald office. If the correspondence is required by the project personnel for reference, a copy should be made rather than holding the original. Correspondence which is identified in Section 15 of the QAPP or effects the QAPP will be routed to the QA officer.

Project-related materials transmitted externally including correspondence, reports, drawings, and sketches will be appropriately reviewed, approved, and, if necessary, signed prior to transmittal. Project outgoing correspondence will, as a minimum, be signed by the Project Director, or a key level individual assigned this responsibility by the Project Director. If joint signatures are desirable, the originator of the correspondence, when different from management, may also sign.

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QA correspondence will be signed by the QA officer. Outgoing project correspondence and reports should be read by the Project Director, or designee, prior to issue. The office copy of project correspondence should bear routing information and be routed to the QA officer, if judged appropriate by the Project Director.

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TABLE 3-1

RI/FS KEY PERSONNEL LIST

ADVANCED SCIENCES, INC. (ASI)

Project Director.....	John Wood
Health & Safety.....	Joe Poliziani
Quality Assurance.....	Larry Sexton
Deputy Director/Technical.....	John Razor
Technical Manager.....	Bob Galbraith
Deputy Director/Operations.....	Lee Swanger
Field Technical Requirements/Execution.....	Ray Meyer

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9.0 LABORATORY ANALYTICAL PROCEDURES

Laboratory analytical procedures required for the FMPC Work Plan are described in the following sections. Analytical procedures for specific sampling plans are to be provided for approval to project management by each laboratory for the sampling requested.

9.1 LABORATORY PROGRAM FLOW CHART

The generation of project chemical data and results will follow standard laboratory analytical program management scheme as follows or as described in approved manuals. The laboratory analysis flow chart (Figure 9-1) outlines the management scheme which consists of five major areas:

- Project initiation;
- Handling of collected samples;
- Laboratory testing program initiation;
- Data verification; and
- Report preparation.

These areas are described in this Section and Section 10.0.

9.1.1 PROJECT INITIATION

Prior to initiation of laboratory testing, a planning session with the appropriate laboratory and project staffs will be conducted to discuss the specific aspects of the following project tasks which must be completed at this time:

- Define project requirements, including equipment, parameters, sampling procedures (Section 6.0), QC samples, and analytical methods selection (Section 9.3).
- Request sample bottles from laboratory's sample custodians.

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- Prepare sample bottles with appropriate labels and preservatives (Sections 6.6 and 7.1.1).
- Provide blank chain-of-custody and request for analysis forms with sample bottles; these will be shipped to the site.

9.1.2 SAMPLE PROCESSING PROCEDURES

The following procedures are implemented by field and laboratory personnel for handling of collected samples:

- Summarize field data collection on field sheets (Section 7.1) and initiate chain-of-custody records.
- Transport collected samples to the laboratory under suitable environmental conditions (Section 6.5).
- Follow U.S. DOT regulations for sample transport.
- At the laboratory, review received samples and process chain-of-custody records. If necessary, code samples with a unique number upon receipt in the laboratory (Section 9.2.1).
- Place samples in proper storage.
- Log samples in laboratory log. Open the chemistry project file and indicate parameters on sample control board (Section 9.2.2).

9.2 LABORATORY TESTING PROGRAM INITIATION

9.2.1 RADIOLOGICAL SCREENING

Samples from the Fernald RI/FS will undergo a radiological screening at a qualified laboratory to classify the samples into one of two hazard categories. All samples are counted for gross alpha and gross beta activity. In addition, samples that contain or are suspected of containing low energy beta emitters are analyzed by liquid scintillation counting. The purpose of the screening is threefold: (1) to determine if the samples can be shipped to other radiological nonlicensed laboratories; (2) to verify that the radioactivity content is below the license limit;

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and (3) to evaluate the radiological hazard associated with the sample preparation and analysis procedure. A description of the two hazard categories is given below:

- Category I - A gross alpha less than .01 microcuries/g
A gross beta less than 0.1 microcuries/g

- Category II - A gross alpha more than .01 microcuries/g
A gross beta more than 0.1 microcuries/g

9.2.2 RECEIPT OF SAMPLES

Upon receipt of the samples, the laboratory QC coordinator shall:

- Examine all samples and determine if proper temperature has been maintained during shipment. If samples have been damaged during shipment, the remaining samples shall be carefully visually examined to determine whether they were affected. Any samples affected shall be also considered damaged. It will be noted on the chain-of-custody record that specific samples were damaged and that the samples were removed from the sampling program. Field personnel will be notified as soon as possible that samples were damaged and that they must be resampled or the testing program changed to avoid such damage in the future.

- Compare samples received against those listed on the chain-of-custody record.

- Verify that sample holding times have not been exceeded.

- Sign and date the chain-of-custody record and attach any waybill to the chain of custody.

- Place the samples in appropriate laboratory storage.

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- Enter the samples in the laboratory sample log-in book which contains the following information:
 - Project identification number;
 - Sample numbers;
 - Type of samples; and
 - Date received in laboratory.
- Notify the laboratory manager of sample arrival.
- Place the chain-of-custody records in the laboratory project file.

9.3 LABORATORY TESTING PROCEDURES

Samples from the FMPC site will be analyzed using the chemical and radiological methods listed in Tables 4-1, 4-2, and 4-3. Geotechnical samples will be analyzed using methods listed in Table 9-4 (Section 9.4.5). The actual references are maintained in the laboratory for use by laboratory personnel.

9.4 ANALYTICAL METHODS

The analytical testing program for the samples collected from the FMPC site can be broadly divided into five analytical categories:

- Sample preparation;
- Inorganic analysis;
- Organic analysis;
- Radiological analysis; and
- Geotechnical analysis.

9.4.1 SAMPLE PREPARATION

If required by the project work plan, selected samples will be extracted according to Method 1311, Toxicity Characteristics Leaching Procedures (TCLP) and described in the Federal Register

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29 March 1990, pages 11798-11877. A method blank will be processed with each set of samples or with every 20 samples, whichever is more frequent.

9.4.2 INORGANIC ANALYSIS

The inorganic analytical procedures which will be used to perform the laboratory program are specified below for:

- Metals (ICP);
- Arsenic and selenium;
- Mercury;
- Hexavalent chromium;
- Cyanide;
- Fluoride; and
- Nitrate.

9.4.2.1 INDUCTIVELY COUPLES ARGON PLASMA SPECTROMETRY - U.S.

EPA METHOD 200.7 CLP-M

Metals analyses will be performed by inductively coupled argon plasma emission spectrometry (ICP). However, ICP is not suitable for all metals, and graphite furnace atomic absorption spectrophotometry will be used to analyze for arsenic, selenium, and lead. Mercury will be analyzed by cold vapor atomic absorption spectrophotometry. A summary of the referenced analytical procedures (Table 4-1) is presented below.

Method Summary

The method describes a technique for the simultaneous or sequential multi-element determination of trace elements in solution. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. Samples are nebulized and the aerosol that is produced is transported to the.

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15.0 DOCUMENT CONTROL

Project specific documents and drawings must be reviewed, approved, revised, and distributed as necessary.

15.1 REVIEW AND APPROVAL OF DOCUMENTS AND DRAWINGS

Prior to implementation or use, the following documents and drawings must be revised and approved by the personnel identified:

- Quality Assurance Project Plans
 - Project Director
 - Project QA Officer
 - Deputy Director/Technical
 - WMCO QA Officer
 - DOE Contracting Officer's Technical Representative

- Work Plans, Sampling Plans, Health and Safety Plan, Community Relations Plan, and Data Management Plan
 - Project Director
 - Project QA Officer
 - Deputy Director/Technical
 - WMCO QA Officer
 - DOE Contracting Officer's Technical Representative

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- Drawings, including computer graphics and maps
 - Draftsperson/Preparer
 - Checker
 - Project Director
 - Deputy Director/Technical

- Other Project Specific Documents (such as the Project Management Plan)
 - Project Director
 - Deputy Director/Technical
 - DOE Contracting Officer's Technical Representative
 - WMCO QA Officer

Approval of these documents and drawings will be denoted by a signature and date. All documents and drawings will be revised and approved by the designated personnel before they are submitted to DOE for their review and/or approval. Requests for a copy of a document or a design drawing before it has gone through the complete review and approval process will merit the document to be marked "DRAFT" and a drawing to be marked "PRELIMINARY".

15.2 DISTRIBUTION

Documents and drawings will be distributed as requested to ASI/IT, WMCO, and DOE personnel. The Project QA

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Officer will control distribution of all quality-related documents, including the QAPP, Work Plan, Sampling Plan, Health and Safety Plan, Community Relations Plan, and Data Management Plan. The Project Director or designee will control distribution of all other documents and drawings. When a document or drawing is no longer needed, it will be destroyed or returned to the issuing group. Each copy of the QAPP, Work Plan, Sampling Plan, Health and Safety Plan, Community Relations Plan, and Data Management Plan will be identified with a document control number. The Project QA Officer will maintain a status log showing the name, control number, and mailing address of each controlled copyholder. The Project Director or designee will also maintain a log for all other documents and drawings.

15.3 REVISION OF DOCUMENTS AND DRAWINGS

Whenever a document or drawing cited in Section 15.1 is revised, review and approval of the revision will be in accordance with the requirements of the original document or drawing.

Revisions will be issued to all holders of the original document or drawing. For the QAPP, Work Plan, Sampling Plan, Health and Safety Plan, Community Relations Plan, and Data Management Plan, each copyholder will sign a revision

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receipt verifying that the revision has been received and properly placed in the document. The receipt will be returned to the QA officer. The Project Director or designee, will control revisions of all the other documents or drawings. Revision receipts will be returned to the Project Director.

Revisions to documents will be denoted by adding the revision number (QAPP only) and revision date on the document title page, (if reissued), revised signature page (if reissued), and each page that has been revised. Revisions to design drawings shall, as a minimum, be denoted by including the consecutive revision number and revision date in the appropriate block on the drawing and revised signature block.

Revisions to the QAPP, Work Plan, Sampling Plan, Health and Safety Plan, Community Relations Plan, and Data Management Plan will be accomplished by either a complete revision in which all pages are replaced, or a limited revision in which only certain pages are replaced.

For a complete revision to the QAPP, all pages will be identified with the complete revision number (e.g., 4, 5, 6, etc.) and the revision date. For a limited revision to the QAPP, each revised page will be pink in color and identified with the current complete revision number and sequential

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suffix (e.g., Rev. 3.1, 3.2, etc.) and the revision date. When necessitated by the change, additional pages will retain the original page number with a sequential suffix (e.g., page 4.1 of 6). Each limited revision will be transmitted by a revision log sheet that lists all revised pages for that revision. The log sheet is to be filed in the front of the revised document section. Each revised page in both complete and limited revision will have a vertical line in the right hand margin adjacent to the revised material. Document title pages and signature pages are not required for limited revisions.

Revisions to the Work Plan, Sampling Plan, Health and Safety Plan, Community Relations Plan, and Data Management Plan will be accomplished by either a complete revision in which all pages are replaced, or a limited revision in which only certain pages are replaced. For a complete revision, all pages will be identified with the complete revision date. For a limited revision, each revised page will be pink in color and identified with the revision date. When necessitated by the change, additional pages will retain the original page number with a sequential suffix (e.g., page 4.1 of 6). Each limited revision will be transmitted by a revision log sheet that lists all revised pages for that revision. The log sheet is to be filed in the front of the revised document section. Each revised page in both complete

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and limited revisions will have a vertical line in the right hand margin adjacent to the revised material. Document title pages and signature pages are not required for limited revisions.

15.4 INITIATING CHANGES TO DOCUMENTS

Changes to approved plans and procedures are likely to be necessary during the course of project performance as a result of new information or events that occur during performance. Changes to previously approved plans and procedures must be approved before the change is implemented.

15.4.1 VARIANCES

A variance is an approved variation from a previously approved project specific procedure, such as the QAPP, Work Plan, Sampling Plan, etc, and does not impact the quality of the work. Variances are recorded on the Variance Request Form (VR) form shown in Figure 15-1 and must be approved by the Project Director and the Project QA Officer before they are implemented. The approval can be oral, when necessary, provided that written approval is obtained within 5 working days.

Variances do not normally result in revisions to project-specific documents. They are a means of accomplishing on-the-spot changes to project specific procedures when the

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change is necessary for work to proceed. The change is a one-time change that is valid only for the specific activity described in the VR.

Variance Request forms are initiated as follows:

- The person identifying the need for the variance (the requestor) completes the VR form shown in Figure 15-1 through the REQUESTED BY entry, except for the variance number, which is supplied by the Project QA Officer.
- The person identifying the need for the variance (the requestor) completes the VR form shown in Figure 15-1 through the REQUESTED BY entry, except for the variance number, which is supplied by the Project QA Officer.
- When approvals have been obtained, the change described on the VR can be implemented.
- The original of the VR is provided to the Project QA Officer for appropriate distribution and forwarding to the project files. The Project QA Officer also evaluates the VR to determine whether or not a revision to the project-specific document is required, and, if appropriate, issues a DCR within 10 working days.

The Project QA Officer is responsible for maintaining a log that shows for each issued VR, the number, date is issue, requestor, effected document and section, and subject matter.

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FMPC RI/FS	VR No. _____
VARIANCE REQUEST	Page ____ of ____
Date: _____	
VARIANCE (INCLUDE JUSTIFICATION)	
APPLICABLE DOCUMENT(S) AND SECTION NO. (S)	

CC:

REQUESTED BY: _____ Date: _____

Approved By: _____ Date: _____

Project Director

Project Quality Assurance Officer Date: _____

FORM 4003

Figure 15-1

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15.4.2 DOCUMENT CHANGE REQUESTS

A DCR is a means of initiating a revision to a previously approved project-specific procedure, such as the QAPP, Work Plan, Sampling Plan, etc. DCRs are recorded on the DCR form shown in Figure 15.2. Review and approval of the DCRs shall be in accordance with the requirements of the original document before they are implemented. For DCRs that involve changes to analytical laboratory activities, review by the responsible laboratory director is also required. The Project Director or the Project QA Officer may request oral approval from the other signatories when necessitated by circumstances. If the other signatories orally approve and consent for the DCR to be signed for them, the Project Director or Project QA Officer may sign their own name in the other person's signature space and write "for" before the person's title below the signature space.

DCRs always result in revisions to project-specific documents, as opposed to VRs, which normally do not result in revisions.

DCRs are initiated as follows:

- The requestor (normally the person who identifies the need for change) completes the DCR form up to the EFFECTIVE DATE OF CHANGE.
- The requestor forwards the DCR to the Project QA Officer for evaluation.
- The Project QA Officer upon concurrence with the DCR enters a number in the REQUEST NO. space and also signs

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and dates the DCR in the appropriate space. If Project QA Officer does not concur, he/she resolves the disagreement with the requestor.

- The Project QA Officer enters the pertinent information in a DCR status and tracking log that shows the DCR number, requestor, request date, subject matter, affected document and section number(s), transmittal and return date from each signatory, distribution date to each document holder, and issue date of revised pages to the document.
- The Project QA Officer makes a copy of the DCR and forwards the original to the Project Director with a request to review, approve and return to the Project QA Officer. The date is recorded in the DCR status and tracking log.
- When the signed DCR is returned from the Project Director, the Project QA Officer makes the appropriate entry in the DCR status and tracing log, and repeats the forwarding process until all required signatures have been obtained. If any signatory refuses to sign the DCR, that signatory is responsible for communicating to the Project QA Officer the reasons for not signing. The Project QA Officer coordinates the resolution of the disagreement of the DCR, consulting with the Project Director as necessary. In the event that a decision is made to not proceed with the issue of the DCR, the Project QA Officer notifies the requestor and all signatories who have previously signed the DCR of this decision. An appropriate entry to this effect is made in the DCR status and tracking log.
- When all required signatures have been obtained, the Project QA Officer issues the DCR to all holders of controlled copies of the affected document(s). The change described by the DCR is to be implemented on the date specified in the EFFECTIVE DATE OF CHANGE space on the DCR.

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- The effective date of change and issuance of the DCR is dependent on DOE addressing the section at the bottom of the DCR for EPA notification, EPA approval, or immediate implementation.

Each controlled document copyholder who receives an approved DCR is responsible for inserting a copy of the DCR in the front (or other appropriate location) of the affected document(s). Until revised document pages are issued, the DCR serves as the controlled document copy holder's official notification that the document has been changed as described in the DCR.

Subsequent to issuing a DCR, the Project QA Officer will, as soon as feasible, issue revised document pages incorporating the change described in the DCR. Upon receipt of the revised pages, at the controlled document copyholder's option, the DCR may be discarded or retained. If retained, a notation will be made on the DCR that the change has been incorporated in a revision.

15.5 COMPUTER GRAPHICS DEVELOPMENT

The following apply to all computer generated graphics produced from the Fernald database for use in the Remedial Investigation/Feasibility Study.

File Transfer - All data obtained from the database for display in graphic form is to be downloaded to a local microcomputer. If a location identification is to be

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DOCUMENT CHANGE REQUEST		REQUEST NO. _____
This form is used to initiate permanent changes to controlled distribution project-specific procedures, such as the QAPP, Work Plan, and Sampling Plan.		Issue Date: _____
		Page _____ of _____
		Do Not Write in This Block
REQUESTOR: _____ PHONE NO.: _____ DATE: _____		
DOCUMENT TITLE: _____		
SECTION/PARAGRAPH/PAGE NO.: _____ DOCUMENT NUMBER: _____		
ISSUE DATE: _____ LATEST REVISION DATE: _____		
JUSTIFICATION:		
CONTENT OF CHANGE:		
EFFECTIVE DATE OF CHANGE:		
<input type="checkbox"/> When all approvals have been obtained: _____ Effective Date		
<input type="checkbox"/> Other (Specify): _____		
REQUIRED APPROVALS:		
Project Director _____	Date _____	
Project QA Officer _____	Date _____	WACO QA Officer _____
		Date _____
Technical Manager _____	Date _____	DOE COTR _____
		Date _____
TO BE COMPLETED BY DOE		
A. Prior EPA notification required?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
B. Prior EPA approval required?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
C. Immediate implementation?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Figure 15-2

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used, the coordinates must be transferred simultaneously with the other data and in accordance with 15.5.2.

Local Files- Neither the data read to a local computer from the database or the date of data file creation may be altered in any way. Each individual graphics producer is responsible for maintaining a record of the data filename and the graphic filename used for computer generated graphics and maps.

15.5.2 LOCATION COORDINATES/ELEVATIONS

Location identification in all graphics will be by State Planar Coordinates. This applies to all sample collection locations and all well locations. Elevation data will be reported relative to Mean Sea Level.

All elevation or coordinates data will be derived from the survey data maintained as part of the Project record.

15.5.3 LABELING

15.5.3.1 GENERAL

Graphics shall be titled so as to clearly identify the parameter or parameters displayed. Reporting units must be included on each. Standard two-dimensional (X-Y) or three-dimensional plots must have a scale showing the range of values being displayed.

All graphics which contain data that has not been completely

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verified shall include the label, "Preliminary Data: Not for Distribution or Publication" also labels for, "Validation Level I" and "Validation Level II"

Validation Level I All data transferred electronically will be manually verified against signed, hard copy reports.

Validation Level II Results of technical analysis of all data to date.

Graphics produced during the development of software programs to be used for demonstration purposes should be labeled according to Section 15.5.3.1 above and should also include the label "developmental".

15.5.3.2 THREE-DIMENSIONAL PLOTS

Maps must also show the following:

- a. File name;
- b. Last date of generation and dates of preceding versions;
- c. Preparer and checker initials by each generation/revision date;
- d. North arrow and scaler bar.

Maps approved in accordance with 15.1 will be read into plot files with the file extension ".plt". These maps can be made available for use in the on-site map production center.

The map production center display case will contain a hard copy version of each computer generated map.

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Example Format:

- a. File name;
- b. Paper size;
- c. File size;
- d. Layers included;
- e. Description, including any parameters overlaid;
- f. All revisions and reasons for change, initialed by preparer and checker;
- g. Sign-off by the Deputy Director/Technical and Project Director for all versions/revisions.

The map production center will also contain a hard copy record for all revisions to the basic map file used with overlays. All revisions or updates to the basic file will be documented, giving date of revision, nature of revision, reason for revision, and person incorporating the revision. An example of a "revision" in this case would be the extension of the area shown in the basic map incorporating the addition of digitized data. The movement of an object relative to the original digitized data file is an example of a change which would not qualify as a revision.

Maps employing data not obtained directly from the database will be labeled with the source of the data.

15.5.4 TRIAL RUNS TO DETERMINE DATA PLACEMENT

Draft graphics initially produced to ascertain data placement, such as where the software employed might cause values to be printed illegibly and placement adjustment may 38

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be required to allow readability are exempted from the requirements of 15.5.1, 15.5.2, and 15.5.3. Under no circumstances are such materials to leave the site of generation. In addition, they must be marked "Data Placement Trial Run."

