

US Army Corps of Engineers

**Toxic and Hazardous
Materials Agency**

**COOSA RIVER STORAGE ANNEX
TALLADEGA, ALABAMA
ENVIRONMENTAL INVESTIGATION**

**FINAL
MANAGEMENT AND RESOURCES UTILIZATION PLAN
CONTRACT NUMBER DAAA15-90-D-0013
TASK ORDER NUMBER 4**

**PREPARED BY:
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Project No. 10-G304-00**

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Attachment 2	Work Breakdown Structure
Attachment 3	Monthly Projection of Resources by WBS Code

1.0 INTRODUCTION

The Department of the Army, United States Army Toxic and Hazardous Materials Agency (USATHAMA), has issued Task Order No. 4 under contract DAAA15-90-D-0013 to Jacobs Engineering Group Inc., entitled "Coosa River Storage Annex Environmental Investigation." The environmental investigation will be conducted at this facility under the provisions of the Base Realignment and Closure Act.

1.1 Management and Resources Utilization Plan Objectives

This Management and Resources Utilization Plan (MRUP) describes the project, the organization of the Jacobs project team in terms of key personnel, the project schedule, and resource utilization. The format of the Working versus Baseline Schedule Report is presented as Attachment 1. The Work Breakdown Structure is summarized in Attachment 2. A projection of monthly resource utilization by WBS code is presented in Attachment 3.

1.2 Summary of Task Order

In general, Task Order No. 4 includes the development of planning documents for and the initial activities of an Environmental Investigation (EI) of the site. Briefly, this work includes: 1) evaluation of the potential for current and previous activities at the Annex to have caused environmental contamination; 2) development of sufficient information to adequately assess the health and environmental risks associated with the closure and transfer of the Annex for other use; and 3) identification of a preliminary array of alternatives to the level necessary for the Army to make a decision regarding preparation of the property for release. The documents and activities required by the task order are listed below, along with corresponding Exhibit Line Item Number (ELIN) and Work Breakdown Structure (WBS) number.

<u>Task Order</u>			
<u>Reference</u>	<u>Description</u>	<u>ELIN</u>	<u>WBS No.</u>
3.2.1.1	Management and Resource Utilization Plan	A003	1004000
3.2.1.2	Quality Control Plan (QCP)	A005	1009000
3.3	Field Investigation		1001100
3.3.1	Field Mobilization		
3.3.2	Soils Sampling Program		
3.3.3	Wipe Sampling Program		
3.3.4	Radon Sampling Program		
3.3.5	Water Sampling Program		
3.3.6	Sample Analysis		
3.3.6	Data Evaluation		
3.3.6.1	Data Management		1001200
3.3.6.2	Data Management Section		
3.4	Risk Assessment		1001400
3.4.1	Baseline Risk Assessment		
3.4.2	Regulatory Compliance		
3.5	Preliminary Remedial Action Assessment		1001500
3.6	Environmental Investigation Report	A009	1001600
3.7	Monthly Performance and Cost Report	A001	1007000
3.8	Meetings / Briefings		1006000
3.8.1	Records Review		1001300
3.8.1	Initial Site Visit		1006000
3.8.2	EI Meetings		1006000

3.8.3	EI Briefings	1006000
3.9	Public Involvement	1005000
	Supplemental Tasks	1001700
	Contract Support Activities	1008000

1.3 Site Description

Coosa River Storage Annex is a sub-installation of Anniston Army Depot and is located in Talladega County near the northern edge of the City of Talladega, Alabama. The 2,834 acre site contains 136 ammunition storage igloos and four small utility buildings.

The Annex was constructed in 1940 and during World War II was part of the Brecon Loading Company. The Brecon Loading Company received powder from the Alabama Army Ammunition Plant and loaded it into propelling charge containers. After the war, the Brecon Loading Company, with the exception of the Annex, was sold. The Annex was assigned to the Anniston Army Depot in 1946. Little is known about the history of the site from World War II to the mid 1960s. From the mid 1960s until the early 1980s, the facility was used to store ammunition. Afterwards, it was used to store inert material. No live ammunition is known to be stored on-site as of the initiation of this task order.

A more detailed site description is contained in the Quality Control Plan and is not repeated herein.

2.0 BASIS FOR ESTIMATES

2.1 Site Wide Assumptions

2.1.1 Sources used are:

Contract DAAA15-90-D-0013;

Task Order No. 4 (revised 24 July 1990 and 28 September 1990);

Draft Final Technical Plan, Draft Final Sampling Design Plan and Draft Final Health and Safety Plan, USATHAMA, June 1990.

2.1.2 Draft Final Technical Plan and Draft Final Sampling Design Plan estimates of work to be done are considered complete and accurate for the purpose of this plan. Though not specified in the tables in the Draft Final Sampling Design Plan or in Table I attached to the Task Order, quality control (QC) samples at 10% frequency are recommended by Jacobs based on Jacobs professional experience with regulatory agencies. Per discussion with USATHAMA, however, they are not included for the purposes of this plan. Quality Assurance (QA) and QC for the project will be addressed in the QCP.

2.1.3 The Draft Final Technical Plan and Draft Final Sampling Design Plan do not indicate that the following are needed:

- o geophysical survey of 21 identified ground depressions;
- o soil gas survey of septic tank tile field or in the area of the gasoline storage tank;
- o sampling of buildings for asbestos containing materials;
- o sampling of building surfaces for paint containing lead or mercury;
- o radon sampling of the four utility buildings;

- o air sampling other than radon at igloos;
- o groundwater evaluation and sampling;
- o biota sampling;
- o stream flow measurements;
- o identification, sampling and inventory of PCB containing capacitors and transformers;
- o characterization of debris pile.

The need for these or other potential areas will be reviewed during the kickoff / scoping meeting, during preparation of the QCP, or during the initial site visit.

- 2.1.4 Access to the site and all sampling locations, including background locations, will be obtained with USATHAMA's assistance.
- 2.1.5 The task order does not call for treatability studies; none are included in this plan.
- 2.1.6 The proposed delivery schedule (Section 4.0) is based on Table II of the Task Order, and USATHAMA's review comments on the Draft MRUP. Where possible, USATHAMA will provide review comments to Jacobs in one document, preferably a "marked up" copy of each document.
- 2.1.7 Cost estimates are based on information and documents (Draft Final Technical Plan, Sampling Design Plan and Health and Safety Plan) supplied by USATHAMA. The estimate may be revised, with USATHAMA approval, as new information is obtained from the initial site visit or other sources.

2.2 Task Descriptions and Assumptions

Task 1 Records Review (WBS No. 1001300)

The documents listed in the task order and noted below, which have not yet been made available to the contractor, will be furnished to the contractor prior to the initial site visit, so that the contractor can review the previous studies of the area and become familiar with the site prior to conducting a literature survey of the area geology. This records review will be conducted prior to the initial site visit.

- o Environmental Assessment.
- o Anniston Army Depot, Coosa River Storage Annex, Report of Excess, 24 April 1989.
- o An Archaeological Overview and Management Plan for the Coosa River Storage Annex, Talladega County, Alabama, for the National Park Service, U.S. Department of Interior, David H. Dye, 8 October 1984.
- o Historic Aerial Photography.
- o Radon Protocol for Base Closure.
- o Enhanced Preliminary Assessment for Coosa River Storage Annex.

Task 2 Management and Resources Utilization Plan (ELIN A003, WBS No. 1004000)

This document will include a monthly projection of resources (man-hours and costs) for the duration of this task order in accordance with the Work Breakdown Structure.

Task 3 Quality Control Plan (QCP, ELIN A005, WBS No. 1009000)

The QCP will describe the policy, organization, functional activities and quality control and quality assurance protocols necessary to achieve the data quality objectives dictated by the intended use of the data as outlined in the Draft Final Technical Plan and the Draft Final Sampling Design Plan. The QCP shall also include a data management section which adheres to USATHAMA protocol.

It is assumed that USATHAMA QA Program requirements are generally consistent with EPA and DOE requirements, and that existing Jacobs Quality Assurance Project Plan structure and text developed for EPA environmental projects can be adapted to meet USATHAMA requirements.

The QCP will be written as a site wide plan, with modifications for each specific sampling event or sub-site as needed. Discussion of the following items in the QCP will supersede those presented in the Draft Final Technical Plan and Sampling Design Plan, so that this document can function in the field as a stand-alone document:

- o project organization;
- o field equipment calibration procedures and frequency;
- o sampling equipment decontamination;
- o sample handling and chain-of-custody;
- o sample containers, preservation, and holding times;
- o analytical methodologies, detection limits, accuracy, precision, and completeness;
- o number of samples by media / matrix; and
- o number / frequency of QC samples by media / matrix (N.B., these are not fully delineated in the Draft Technical Plan and Sampling Design Plan, but are recommended at a 10% frequency based on Jacobs' professional experience).

It is assumed that a kickoff / scoping meeting or initial site visit will precede the development of the QCP so that the need for revisions to the sampling program outlined in the Draft Final Technical Plan and Sampling Design Plan can be assessed.

Task 4 Field Investigation (WBS No. 1001100)

The field effort outlined in the Draft Final Technical Plan and Draft Final Sampling Design Plan is the basis for the field investigation portion of this plan. Based on Jacobs professional experience, QC samples at 10% frequency are recommended but have not been assumed. The field effort may be revised, with USATHAMA approval, as new information is obtained from the kickoff / scoping meeting, initial site visit or other sources.

Decontamination water source samples will be analyzed by the Contractor Laboratory Analytical Support Services (CLASS) laboratory designated by USATHAMA under this task, with submittal of results to USATHAMA prior to field mobilization.

Office facilities at the Annex are not assumed to be available for Jacobs use during this task for desk space and telephone, but potable water, sanitary facilities, and secure equipment storage are assumed to be available for Jacobs use.

No phased field work is planned; most of the field data will be gathered in one field effort. Alpha track radon detectors (ATDs) will be placed during the initial site visit. No allowances have been made for weather delays. In order to accommodate the CLASS Laboratory capacity as requested by USATHAMA, one sampling team of three individuals will be in the field for six weeks of sampling plus one week of mobilization, rather than the two sampling teams of three individuals each for three weeks as originally planned.

It is assumed that soil samples can be collected from beneath the debris pile without the need for heavy equipment to penetrate or move the debris pile. The need for heavy equipment will be assessed during the initial site visit, and if necessary, the options for sampling the debris pile area soil (e.g., perimeter sampling) will be reevaluated.

Per the direction of USATHAMA, it is assumed that entry to the storage igloos will not require confined space entry procedures (i.e., Level B), and that all sampling can be performed in modified Level D with Level C contingency. The need for confined space entry procedures will be evaluated during the initial site visit and during Task 12 review of the Draft Final Health and Safety Plan prepared for USATHAMA by Dames and Moore. It is assumed that Jacobs will collect samples from all 136 storage igloos, including the three whose contents are unknown per the Draft Final Technical Plan, and that Jacobs will verify the contents of these three igloos. According to USATHAMA, access to two of these igloos are controlled by the Alabama National Guard, while the third is controlled by the Federal Bureau of Investigation. Arrangements for access to all igloos, especially those not controlled by ANAD, are the responsibility of USATHAMA.

It is assumed that all surface water and sediment samples from the streams can be collected without use of a boat by wading. It is assumed that use of a boat is necessary for collection of surface water and sediment samples from the three ponds.

It is assumed that all sampling locations coordinates can be established from USATHAMA-provided reference points by tape or chain measurement and compass bearings, and that elevations can be established by hand levels, without the need for use of a registered surveyor.

Per the Draft Final Technical Plan and the Draft Final Sampling Design Plan, it is assumed that USATHAMA will be responsible for management and disposal of all investigation derived wastes (e.g., decontamination and rinse waters, disposable personal protective equipment, samples after analyses, etc.).

It is assumed that USATHAMA or its laboratories will provide the needed sample containers, coolers, and gross alpha track radon detectors. It is further assumed that USATHAMA will also provide for analysis of all soil, sediment, surface water and wipe samples through the CLASS contract, and alpha track radon detectors through another laboratory contract mechanism. Provisions for shipment of all samples, whether to the USATHAMA-designated CLASS laboratory or to the USATHAMA-designated radon analysis laboratory, is included in the cost estimates incorporated into this Management and Resources Utilization Plan.

Task 5 Data Management (WBS No. 1001200)

It is assumed that USATHAMA will coordinate with their laboratories for scheduling of sample analyses, and that Jacobs will coordinate with the laboratories and USATHAMA for receipt of analytical results. It is assumed that USATHAMA's CLASS laboratory and radon laboratory will input chemical analytical results into USATHAMA's IRDMIS.

It is assumed that Jacobs will input sample location coordinate information and radon sample analytical results into USATHAMA's IRDMIS. It is assumed that Jacobs will be able to retrieve analytical data from USATHAMA's IRDMIS for use in data evaluation, risk assessment, and report writing. It is assumed that Jacobs will be responsible for developing a sample program capable of identifying chemical data by a particular sampling event, keying to a three-digit event code.

It is assumed that USATHAMA's CLASS laboratory and radon laboratory will perform the majority of data validation. It is assumed that Jacobs will expend minimal efforts in performing data validation on all analytical data generated during the course of the field investigation activities of Task 4. Jacobs efforts in this regards are anticipated to include verification of sample holding times, checking chain-of-custody, checking accuracy, precision and completeness against the standards established in the QCP, and comparing analytes detected in QC samples (e.g., duplicates, matrix spike / matrix spike duplicate, equipment blanks, method blanks, etc.) with sample results.

Task 6 Risk Assessment (WBS No. 1001400)

In the Baseline Risk Assessment, to the extent allowed by the data, the potential threats to public health and the environment posed by the Annex in the absence of remedial action will be evaluated assuming that existing facilities will not be utilized in any manner which will potentially expose children to the facilities (e.g., no paint chip ingestion by children, no pica children).

This assessment will address the following four components:

- o contaminant identification;
- o exposure assessment;
- o toxicity assessment; and
- o risk characterization.

Task 7 Preliminary Remedial Action Assessment (WBS No. 1001500)

It is assumed that potential remedial action objectives and alternatives can be developed on the basis of individually affected media or by potential operable units. For the purpose of this cost estimate, per discussions with USATHAMA, it is assumed that: 1) no contamination will be found; 2) no more than two preliminary remedial action alternatives will be screened -- "No Action" and "Limited Action"; and 3) no more than two alternatives will undergo detailed evaluation and costing.

Task 8 Environmental Investigation Report (ELIN A009, WBS No. 1001600)

It is assumed that this report will present the findings of the efforts performed under Tasks 4, 5, 6 and 7, and that this report, to the extent allowed by the data, will be the equivalent of a Screening Site Investigation (SSI) or Listing Site Investigation (LSI) report in accordance with the revised Hazard Ranking System (HRS2), or combined Remedial Investigation (RI) Report and Feasibility Study (FS) Report as defined by EPA's RI / FS Guidance. The scope and format of the report will be determined through discussions with USATHAMA and the regulatory agencies prior to initiation of this task.

Prior to undertaking extensive efforts in drafting this report, the data gathered will be assessed for adequacy in determining the extent and degree of contamination. If found to be inadequate for that purpose, Jacobs will recommend additional sampling be conducted, and obtain USATHAMA concurrence before proceeding further with this task.

The following assumptions apply to the Decision Document which will be prepared by Jacobs under this task:

- 1) The Decision Document will be functionally equivalent to an EPA Superfund Record of Decision, and will be prepared in accordance with EPA's Guidance on Preparing Superfund Decision Documents (OSWER Directive 9355.3-02, EPA/540/G-89/007, July 1989).
- 2) USATHAMA will be responsible for distributing the Pre-Final EI Report to the interested parties (e.g., Alabama Department of Environmental Management, EPA, and the general public) and for assembling their comments and transmitting them to Jacobs.
- 3) Following the close of the public comment period on the Pre-Final EI Report, and after receiving the comments transmitted from USATHAMA, Jacobs will address the comments received, summarize the comments and responses to them in a responsiveness summary which will be included as an attachment or appendix, and submit a Draft Decision Document to USATHAMA for review and comment.
- 4) USATHAMA will be responsible for distributing the Draft Decision Document to the interested parties (e.g., Alabama Department of Environmental Management and EPA), and for assembling their comments and transmitting them to Jacobs.
- 5) After receipt of review comments from USATHAMA, Jacobs will revise the Draft Decision Document to address the comments received, revise the responsiveness summary and Draft Decision Document as necessary, and submit to USATHAMA a Draft Final Decision Document.
- 6) USATHAMA, in conjunction with the appropriate regulatory agencies, is responsible for selecting the remedial alternative(s) to be implemented at the Annex, by finalizing and signing the Decision Document.
- 7) The Draft Final Decision Document will become the Final Decision Document by affixing signatures of the appropriate regulatory agencies officials; Jacobs will not submit a Final Decision Document as a separate deliverable.

Task 9 Monthly Performance and Cost Report (ELIN A001, WBS No. 1007000)

A summary of each month's accrued costs (labor, subcontract expenses, travel, ODCs) will be presented, supported by a technical progress report, for the duration of Task Order No. 4 (assumed to be 21 months per the schedule shown as Table 4-1). The subject report will be submitted not later than ten working days after each calendar month. As directed by USATHAMA, a monthly cost and performance report will not be required for the first month of performance.

Task 10 Meetings / Briefings (WBS No. 1006000)

Kickoff / Scoping Meeting - The Program Manager, Task Order Manager and senior geologist will travel to Aberdeen or to Anniston and the Annex for a one-day kickoff / scoping meeting with USATHAMA in order to discuss the planned activities and the sampling program outlined in the Draft Final Technical Plan and the Draft Final Sampling Design Plan, prior to initiating work under any of the tasks above.

Initial Site Visit - An initial site visit is planned prior to mobilization for the field investigation; four individuals, the Task Order Manager, a senior geologist, a field safety officer, and a member of the risk assessment team, will travel to the Annex for two days for this visit. Level D personal protection is assumed for the site visit. Gross alpha track radon detectors (ATDs) will be placed in the appropriate storage igloos during this visit, for later retrieval during the field investigation task (Task 4).

EI Meetings - Attendance at each of four one-day meetings in Aberdeen (or other location as directed by USATHAMA) is planned by the Task Order Manager and Program Manager to discuss task order progress, the EI Field Investigation, the Baseline Risk Assessment and Preliminary Remedial Action Assessment, and the EI Report. As shown in the project schedule, EI Meeting 1, suggested for Atlanta or Montgomery, is scheduled to allow for discussion of regulatory review comments by EPA and / or ADEM on the Draft Final QCP; EI Meeting 2, for a progress summary at the completion of the field work; EI Meeting 3, for discussion of USATHAMA review comments on the Draft EI Report; and EI Meeting 4, also suggested for Atlanta or Montgomery, for discussion of regulatory review comments on the Draft Final EI Report. No meeting notes will be provided.

EI Briefing - Three individuals, the Task Order Manager, senior geologist and toxicologist, will attend a one-day "dry run" EI Briefing at Aberdeen; these three individuals will then proceed to Montgomery, Alabama to attend the two-day joint EI Briefing to the State of Alabama and the EPA.

Task 11 Public Involvement (WBS No. 1005000)

Jacobs is prepared to prepare fact sheets, news releases, and / or briefing packets in support of public involvement in this project, and to attend a public presentation of the EI results. It is assumed that development by Jacobs of a formal Public Involvement and Response Plan for public involvement or community relations is not required. Public involvement activities will be done as needed and requested by USATHAMA. The following activities are assumed, based on Jacobs professional experience in performing similar activities for EPA Superfund projects:

- o development and printing of 100 copies of one 14 page Proposed Plan fact sheet for support of a public meeting;
- o development and placement of a display advertisement of the public meeting in a general circulation newspaper;
- o development of graphics for a public meeting; and
- o development of a meeting transcript, needed to prepare a responsiveness summary, via provision of a court reporter during the public meeting.

The Proposed Plan fact sheet will be prepared in accordance with guidance on proposed plans contained in EPA's Guidance on Preparing Superfund Decision Documents (OSWER Directive 9355.3-02, EPA/540/G-89/007, July 1989). Printing of the Proposed Plan fact sheet assumes no rush charges. Per the direction of USATHAMA, it is assumed that the Task Order Manager and the senior geologist will travel to Talladega to attend and participate in a public meeting for the site.

Task 12 Supplemental Tasks (WBS No. 1001700)

Health and Safety Plan - Jacobs will review the Draft Final Health and Safety Plan for assurance that the scope of site hazards have been identified and adequately addressed. Field procedures identified in the Draft Final Technical Plan, Draft Final Sampling Design Plan and Draft Final Health and Safety Plan will be reviewed for consistency with Jacobs' health and safety standard operating procedures. Revisions will be made to the Health and Safety Plan as needed to identify hazards associated with each field investigation task prior to mobilization of the field effort, and as needed thereafter as conditions warrant during field activities.

Data Review - Jacobs will expend efforts in this area as called for in Section A.5.5 of the Draft Final Technical Plan in order to conduct Task 6.

3.0 PROJECT ORGANIZATION

The project organizational structure as depicted in Figure 3-1 shows the working relationship between USATHAMA and the Environmental Investigation (EI) Contractor personnel. The main point of contact will be between the USATHAMA Project Engineer / Contracting Officer's Representative and the EI Contractor Task Order Manager. Task groups addressing the major aspects of the project will support the Task Order Manager. Lead personnel have been assigned to each task group to provide consistency in addressing the goals and objectives of the project.

3.1 Contractor Project Team Goals

The goals of the EI Contractor Project Team will be to provide responsive technical management, effective cost and schedule control, technical expertise, quality assurance for all technical work performed under the task order, and effective communication with USATHAMA. The following features of project organization will facilitate effective project management.

- o Clearly defined lines of authority and well-defined technical responsibilities.
- o Technically qualified and experienced personnel assigned to all project tasks.
- o Direct lines of communication among key project personnel, direct interaction with USATHAMA via the Task Order Manager, and project review meetings coincident with key project milestones.
- o Close coordination of all task groups in definition of field investigation tasks and responsibilities, development of the Quality Control Plan and deliverables, and in providing community relations activities through the Task Order Manager and task group leaders.
- o Quality Assurance and Health and Safety Coordinators interacting directly with the Task Order Manager and monitoring the activities and outputs of all task groups

3.2 Contractor Personnel, Roles and Responsibilities

The working relationships among all EI Contractor key personnel are depicted in Figure 3-1. The roles and responsibilities are outlined in the project organization chart (Figure 3-1), and are presented below.

Program Manager, Mr. Sheldon Meyers, will be responsible for overall direction, administration, technical review, and monitoring of the entire contractor effort. His responsibilities will include:

- o Formal communications with the USATHAMA Project Officer and the EI Contractor Task Order Manager;
- o Final review and approval of work plans, all project deliverables, schedules, contract changes, and labor allocations for each task; and
- o Guidance regarding task problems.

In order to fulfill these responsibilities, Mr. Meyers is vested with the authority to select personnel assigned to the project team.

Task Order Manager, Mr. Michael Strimbu, P.E., will be responsible for ensuring coordination among project technical support personnel. His responsibilities will include:

- o Technical and project management interactions with USATHAMA via the USATHAMA Project Officer;
- o Effective day-to-day management of all task operations;
- o Preparation of cost and performance reports in coordination with key support personnel;
- o Management of all funds for labor and materials procurement; and
- o Technical review of all task deliverables and integration of all work elements.

As Task Order Manager, Mr. Strimbu will have the authority through the Program Manager to allocate budgets among the work elements, and to establish and enforce project milestones in accordance with this Management and Resources Utilization Plan. He must approve any labor, material, or task changes internal to the Contractor.

Quality Assurance Coordinator, Ms. Stephanie Doolan, will be responsible for the development of the Quality Control Plan (QCP) and for all quality assurance (QA) and data collection activities for the project. Her responsibilities will include:

- o Assuring that proper field procedures are utilized in order to comply with the data quality objectives outlined in the QCP, by conducting a field audit of QA/QC field procedures during the field investigation;
- o Assuring that all final project deliverables are based on defensible, documented data for which uncertainties can be quantified;
- o Assuring that adequate quality control documentation is provided for all project deliverables; and
- o Assuring that all quality control problems are resolved in an expeditious manner and brought to the attention of the Task Order Manager and technical managers.

PROJECT ORGANIZATIONAL CHART

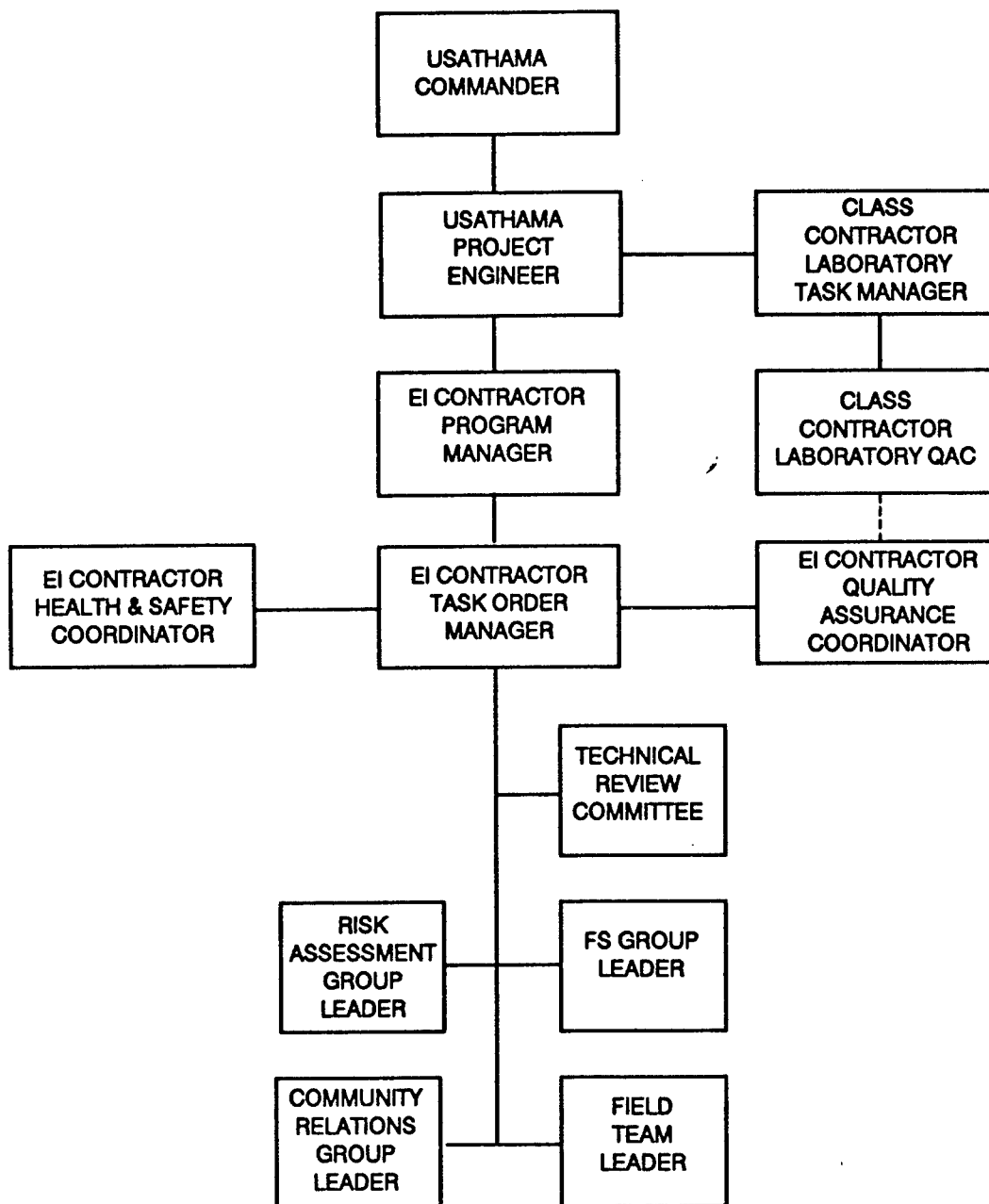


FIGURE DESCRIPTION: Organizational Chart		JACOBS PROJECT NO. 10-G304-00
SITE NAME: Coosa River Storage Annex Talladega, Alabama		
JE JACOBS ENGINEERING GROUP INC.	USATHAMA	
DRAWN BY: LML	DATE: 11/26/90	FIGURE NO. 3-1
CHECKED BY: MJS	DATE: 11/26/90	

As QA Coordinator, Ms. Doolan will have the authority through the Task Order Manager to require quality compliance from all members of the contractor project team, and will serve as QA advisor to the Task Order Manager.

Health and Safety Coordinator, Ms. Laurie Hagen, will be responsible for:

- o Reviewing the Draft Final Health and Safety Plan prepared for USATHAMA by Dames and Moore, and preparing the Health and Safety Plan for use by the Jacobs project team. She will assure that all elements addressed in the Plan are consistent with the field sampling requirements presented in the Draft Final Sampling Design Plan prepared for USATHAMA by Dames and Moore.
- o Identifying the required level of protection for personnel for any field procedures;
- o Ensuring that adequate emergency procedures and response capabilities are planned for;
- o Assuring that proper field procedures are utilized in order to comply with the health and safety procedures outlined in the Health and Safety Plan, by conducting a field audit of the field investigation; and
- o Assuring that all health and safety problems are resolved in an expeditious manner and brought to the attention of the Task Order Manager.

As Health and Safety Coordinator, Ms. Hagen will have the authority to recommend and require compliance with safety procedures, and to require identified personnel to be trained in necessary safety procedures.

Other key project personnel positions and lines of authority are outlined in Figure 3-1.

4.0 PROJECT SCHEDULE

The period of performance for this task order as issued by USATHAMA is 17 months. In EPA's review comments on the Draft Final Technical Plan and Draft Final Sampling Design Plan, as transmitted by USATHAMA to Jacobs, EPA requested a 60-day regulatory review of the Draft Final QCP. However, as directed by USATHAMA in their review comments on the Draft Management and Resources Utilization Plan, a 30-day period is allowed in the project schedule for EPA review of the Draft Final QCP. In order to accommodate 1) EPA's 30-day review of the Draft Final QCP, 2) to allow the EI Contractor 15 days to revise the QCP, 3) to allow 15 days for USATHAMA review and EPA regulatory concurrence on the Final QCP, and 4) to address USATHAMA's request to use one field team of three individuals for six weeks to accommodate CLASS Laboratory capacity rather than the two field teams for three weeks each as originally planned, the project schedule indicates a 21 month period of performance is required. Per discussions with the USATHAMA Project Engineer, a project schedule which presents milestones and deliverables for the project which reflects this 21 month period of performance is presented as Table 4-1.

Several items outside of the EI Contractor's control may effect completion of work per the schedule. The schedule may need to be adjusted, for example, based upon receipt of review comments from USATHAMA and the regulatory agencies, weather during sampling, or receipt of analytical results from USATHAMA's laboratories.

TABLE 4-1
PROJECT SCHEDULE
COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION

	WBS NO.	EVENT DESCRIPTION		START DATE	COMPLETION DATE		DURATION	DAYS FROM KICKOFF MTG
1	1001300	RECORDS REVIEW	M	19-Nov-90	10-Jan-91	U	52	52
	1004000	MGMT & RES UTIL PLAN						
2	1004000	Draft (5 copies)	D	19-Nov-90	19-Dec-90		30	30
3	1004000	USATHAMA review	M	18-Dec-90	02-Jan-91	U	15	44
4	1004000	Final (5 copies)	D	23-Jan-91	07-Feb-91		15	80
	1009000	QUALITY CONTROL PLAN						
5	1009000	Draft (5 copies)	D	19-Nov-90	19-Dec-90		30	30
6	1009000	USATHAMA review	M	21-Dec-90	05-Jan-91	U	15	47
7	1009000	Draft Final (5 + 1 unbound)	D	23-Jan-91	07-Feb-91		15	80
8	1009000	Regulatory review	M	07-Feb-91	09-Mar-91	U	30	110
9	1009000	Final (5 + 1 unbound)	D	09-Mar-91	24-Mar-91		15	125
10	1009000	Reg. concurrence	M	24-Mar-91	08-Apr-91	U	15	140
11	1001700	SUPPLEMENTAL TASKS		19-Nov-90	22-Apr-92		520	520
	1001100	FIELD INVESTIGATION						
12	1001100	Field mobilization	M	12-Apr-91	19-Apr-91	U	7	151
13	1001100	Alpha detector rtrvl	M	19-Apr-91	21-Apr-91	U	2	153
14	1001100	Field work	M	19-Apr-91	03-Jun-91	U	45	196
15	1001200	DATA MGMT ACTIVITIES		28-Sep-90	14-Jul-92		655	603
16	1001400	RISK ASSESSMENT		04-May-91	16-Sep-91		135	301
17	1001500	PRELIM REM AXN ASSMT		04-May-91	16-Sep-91		135	301
	1001600	ENV INVEST REPORT						
18	1001600	Draft (20 copies)	D	13-Jul-91	26-Sep-91		75	311
19	1001600	USATHAMA review	M	26-Sep-91	26-Oct-91	U	30	341
20	1001600	Draft Final (20 copies)	D	26-Oct-91	10-Nov-91		15	356
21	1001600	Regulatory review	M	10-Nov-91	20-Dec-91	U	40	396
22	1001600	Pre-Final (20 copies)	D	20-Dec-91	04-Jan-92		15	411
23	1001600	Reg. concurrence	M	04-Jan-92	19-Jan-92	U	15	426
24	1001600	Final (20 + 1 unbound)	D	04-Mar-92	25-Mar-92		21	492
	1006000	MEETINGS & BRIEFINGS						
25	1006000	Kickoff/Scoping Mtg	M	19-Nov-90	20-Nov-90	U	1	1
26	1006000	Initial Site Visit	M	19-Jan-91	21-Jan-91	U	2	63
27	1006000	EI Meeting 1	M	14-Mar-91	15-Mar-91	U	1	116
28	1006000	EI Meeting 2	M	18-Jun-91	19-Jun-91	U	1	212
29	1006000	EI Meeting 3	M	31-Oct-91	01-Nov-91	U	1	347
30	1006000	EI Meeting 4	M	03-Jan-92	04-Jan-92	U	1	411
31	1006000	EI Briefing Dry Run	M	29-Jan-92	30-Jan-92	U	1	437
32	1006000	EI Briefing	M	30-Jan-92	31-Jan-92	U	1	438
	1005000	PUBLIC INVOLVEMENT						
33	1005000	Meeting advertisement	D	19-Jan-92	02-Feb-92	U	14	440
34	1005000	Proposed Plan fact sheet	D	26-Jan-92	09-Feb-92	U	14	447
35	1005000	Meetings graphics	D	26-Jan-92	09-Feb-92	U	14	447
36	1005000	Meeting attendance	D	16-Feb-92	17-Feb-92	U	1	455
37	1005000	Meeting transcript	D	17-Feb-92	02-Mar-92		14	469
38	1005000	Public comment period	M	19-Jan-92	04-Mar-92	U	45	471

TABLE 4-1
PROJECT SCHEDULE
COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION

	WBS NO.	EVENT DESCRIPTION		START DATE	COMPLETION DATE	DURATION	DAYS FROM KICKOFF MTG
	1001600	DECISION DOCUMENT					
39	1001600	Draft	D	04-Mar-92	25-Mar-92	21	492
40	1001600	Regulatory review	M	25-Mar-92	04-May-92 U	40	532
41	1001600	Draft Final	D	04-May-92	19-May-92	15	547
42	1001600	Reg. concurrence	M	19-May-92	03-Jun-92 U	15	562
	1007000	PERF & COST REPORTS					
43	1007000	Month 1: Oct 1990	D	28-Sep-90	14-Nov-90	47	-5
44	1007000	Month 2: Nov 1990	D	01-Nov-90	14-Dec-90	43	25
45	1007000	Month 3: Dec 1990	D	01-Dec-90	14-Jan-91	44	56
46	1007000	Month 4: Jan 1991	D	01-Jan-91	14-Feb-91	44	87
47	1007000	Month 5: Feb 1991	D	01-Feb-91	14-Mar-91	41	115
48	1007000	Month 6: Mar 1991	D	01-Mar-91	12-Apr-91	42	144
49	1007000	Month 7: Apr 1991	D	01-Apr-91	14-May-91	43	176
50	1007000	Month 8: May 1991	D	01-May-91	14-Jun-91	44	207
51	1007000	Month 9: Jun 1991	D	01-Jun-91	15-Jul-91	44	238
52	1007000	Month 10: Jul 1991	D	01-Jul-91	14-Aug-91	44	268
53	1007000	Month 11: Aug 1991	D	01-Aug-91	13-Sep-91	43	298
54	1007000	Month 12: Sep 1991	D	01-Sep-91	14-Oct-91	43	329
55	1007000	Month 13: Oct 1991	D	01-Oct-91	14-Nov-91	44	360
56	1007000	Month 14: Nov 1991	D	01-Nov-91	13-Dec-91	42	389
57	1007000	Month 15: Dec 1991	D	01-Dec-91	15-Jan-92	45	422
58	1007000	Month 16: Jan 1992	D	01-Jan-92	14-Feb-92	44	452
59	1007000	Month 17: Feb 1992	D	01-Feb-92	13-Mar-92	41	480
60	1007000	Month 18: Mar 1992	D	01-Mar-92	14-Apr-92	44	512
61	1007000	Month 19: Apr 1992	D	01-Apr-92	14-May-92	43	542
62	1007000	Month 20: May 1992	D	01-May-92	14-Jun-92	43	573
63	1007000	Month 21: June 1992	D	01-Jun-92	14-Jul-92	43	603

M= Milestone

D= Deliverable

U= USATHAMA/Regulatory agency action required

ATTACHMENT 1

Working vs. Baseline Schedule Report

WORKING vs. BASELINE SCHEDULE REPORT

SUBMITTED TO DEPARTMENT OF THE ARMY (USATHAMA)
 BY JACOBS ENGINEERING GROUP INC.
 COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION
 CONTRACT NO. DAAA15-90-D-0013
 TASK ORDER NO. 0004
 JACOBS PROJECT NO. 10-G304-00

07-Feb-91

G304SKDF.WK1

WBS NO.	EVENT DESCRIPTION	BASELINE START DATE	BASELINE COMPLETION DATE	DURATION	BASELINE DAYS FROM KICKOFF MTG	WORKING START DATE	WORKING COMPLETION DATE	VARIANCE DAYS	STATUS/COMMENT
1	1001300 RECORDS REVIEW	M 19-Nov-90	10-Jan-91	U 52	52 A	19-Nov-90			
2	1004000 MGMT & RES UTIL PLAN								
3	1004000 Draft (5 copies)	D 19-Nov-90	19-Dec-90	30	30 A	19-Nov-90	18-Dec-90	A -1	Completed early.
4	1004000 USATHAMA review	M 18-Dec-90	02-Jan-91	U 15	44 A	19-Dec-90	23-Jan-91	A 21	Completed late.
5	1004000 Final (5 copies)	D 23-Jan-91	07-Feb-91	15	80 A	23-Jan-91	07-Feb-91	A 0	Completed.
6	1009000 QUALITY CONTROL PLAN								
7	1009000 Draft (5 copies)	D 19-Nov-90	19-Dec-90	30	30 A	19-Nov-90	21-Dec-90	A 2	Completed late.
8	1009000 USATHAMA review	M 21-Dec-90	05-Jan-91	U 15	47 A	24-Dec-90	23-Jan-91	A 18	Completed late.
9	1009000 Draft Final (5 + 1 unbound)	D 23-Jan-91	07-Feb-91	15	80 A	23-Jan-91	08-Feb-91	A -1	Completed early.
10	1009000 Regulatory review	M 07-Feb-91	09-Mar-91	U 30	110 A	07-Feb-91	09-Mar-91	A 0	EPA Rgn 4 says needs 60 days
11	1009000 Final (5 + 1 unbound)	D 09-Mar-91	24-Mar-91	15	125	09-Mar-91	24-Mar-91	A 0	
12	1009000 Reg. concurrence	M 24-Mar-91	08-Apr-91	U 15	140	24-Mar-91	08-Apr-91	A 0	
13	1001700 SUPPLEMENTAL TASKS	19-Nov-90	22-Apr-92	520	520	19-Nov-90	22-Apr-92	A 0	
14	1001100 FIELD INVESTIGATION								
15	1001100 Field mobilization	M 12-Apr-91	19-Apr-91	U 7	151	12-Apr-91	19-Apr-91	A 0	THAMA: start line 14 @ 15 Apr
16	1001100 Radon ATD rtrvl	M 19-Apr-91	21-Apr-91	U 2	153	19-Apr-91	21-Apr-91	A 0	Target for line 26 + 90 days.
17	1001100 Field work	M 19-Apr-91	03-Jun-91	U 45	186	19-Apr-91	03-Jun-91	A 0	THAMA: 1 team/3 pers./6 wks.
18	1001200 DATA MGMT ACTIVITIES	28-Sep-90	14-Jul-92	855	803	28-Sep-90	14-Jul-92	A 0	For project duration.
19	1001400 RISK ASSESSMENT	04-May-91	18-Sep-91	135	301	04-May-91	18-Sep-91	A 0	Assumes 40 days for data rpt.
20	1001500 PRELIM REM AXN ASSMT	04-May-91	18-Sep-91	135	301	04-May-91	18-Sep-91	A 0	Assumes 40 days for data rpt.
21	1001600 ENV INVEST REPORT								Scope yet to be determined.
22	1001600 Draft (20 copies)	D 13-Jul-91	28-Sep-91	75	311	13-Jul-91	28-Sep-91	A 0	Assumes 40 days for data rpt.
23	1001600 USATHAMA review	M 26-Sep-91	28-Oct-91	U 30	341	26-Sep-91	28-Oct-91	A 0	
24	1001600 Draft Final (20 copies)	D 26-Oct-91	10-Nov-91	15	358	26-Oct-91	10-Nov-91	A 0	
25	1001600 Regulatory review	M 10-Nov-91	20-Dec-91	U 40	398	10-Nov-91	20-Dec-91	A 0	
26	1001600 Pre-Final (20 copies)	D 20-Dec-91	04-Jan-92	15	411	20-Dec-91	04-Jan-92	A 0	
27	1001600 Reg. concurrence	M 04-Jan-92	19-Jan-92	U 15	426	04-Jan-92	19-Jan-92	A 0	
28	1001600 Final (20 + 1 unbound)	D 04-Mar-92	25-Mar-92	21	492	04-Mar-92	25-Mar-92	A 0	Corresponds to line 39.
29	1006000 MEETINGS & BRIEFINGS								
30	1006000 Kickoff/Scoping Mtg	M 19-Nov-90	20-Nov-90	U 1	1 A	19-Nov-90	20-Nov-90	A 0	Also met w/EPA Rgn 4.
31	1006000 Initial Site Visit	M 19-Jan-91	21-Jan-91	U 2	63 A	28-Jan-91	29-Jan-91	A 8	Completed; placed ATDs.
32	1006000 EI Meeting 1	M 14-Mar-91	15-Mar-91	U 1	116	14-Mar-91	15-Mar-91	A 0	Start @ end of line 8 + 5 days.
33	1006000 EI Meeting 2	M 18-Jun-91	19-Jun-91	U 1	212	18-Jun-91	19-Jun-91	A 0	Start @ end of line 14 + 15 days.
34	1006000 EI Meeting 3	M 31-Oct-91	01-Nov-91	U 1	347	31-Oct-91	01-Nov-91	A 0	Start @ end of line 19 + 5 days.
35	1006000 EI Meeting 4	M 03-Jan-92	04-Jan-92	U 1	411	03-Jan-92	04-Jan-92	A 0	Start @ end of line 21 + 14 days.
36	1006000 EI Briefing Dry Run	M 29-Jan-92	30-Jan-92	U 1	437	29-Jan-92	30-Jan-92	A 0	
37	1006000 EI Briefing	M 30-Jan-92	31-Jan-92	U 1	438	30-Jan-92	31-Jan-92	A 0	

WORKING vs. BASELINE SCHEDULE REPORT

page 2 of 2

SUBMITTED TO DEPARTMENT OF THE ARMY (USATHAMA)
 BY JACOBS ENGINEERING GROUP INC.
 COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION
 CONTRACT NO. DAAA15-90-D-0013
 TASK ORDER NO. 0004
 JACOBS PROJECT NO. 10-G304-00

07-Feb-91

G304SKDF.WK1

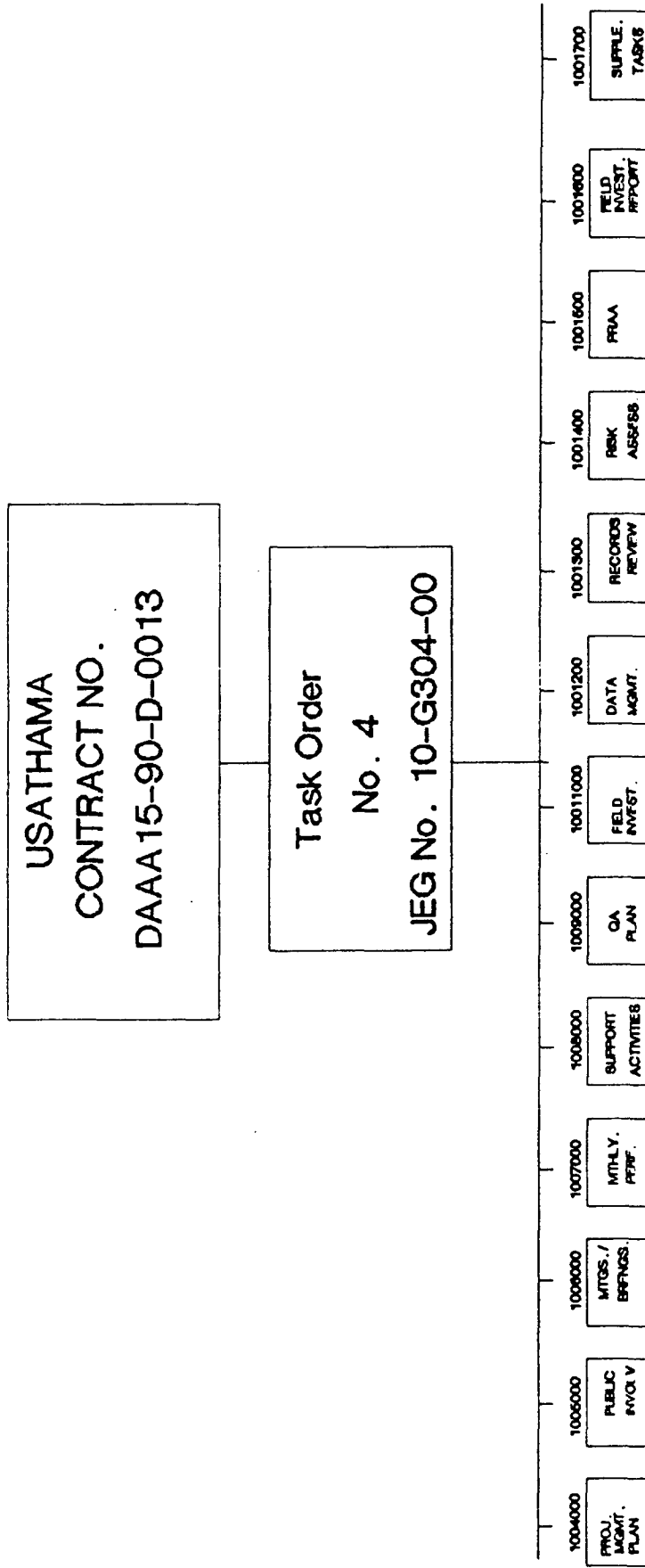
WBS NO.	EVENT DESCRIPTION	BASELINE START DATE	BASELINE COMPLETION DATE	DURATION	BASELINE DAYS FROM KICKOFF MTG	WORKING START DATE	WORKING COMPLETION DATE	VARIANCE DAYS	STATUS/COMMENT
1005000	PUBLIC INVOLVEMENT								
33	1005000 Meeting advertisement	D 19-Jan-92	02-Feb-92 U	14	440	19-Jan-92	02-Feb-92	0	Start @ end of line 23.
34	1005000 Proposed Plan fact sheet	D 26-Jan-92	09-Feb-92 U	14	447	26-Jan-92	09-Feb-92	0	Start @ end of line 23 + 7 days.
35	1005000 Meetings graphics	D 26-Jan-92	09-Feb-92 U	14	447	26-Jan-92	09-Feb-92	0	Start @ end of line 23 + 7 days.
36	1005000 Meeting attendance	D 16-Feb-92	17-Feb-92 U	1	455	16-Feb-92	17-Feb-92	0	
37	1005000 Meeting transcript	D 17-Feb-92	02-Mar-92	14	469	17-Feb-92	02-Mar-92	0	
38	1005000 Public comment period	M 19-Jan-92	04-Mar-92 U	45	471	19-Jan-92	04-Mar-92	0	
1001600	DECISION DOCUMENT								
39	1001600 Draft	D 04-Mar-92	25-Mar-92	21	492	04-Mar-92	25-Mar-92	0	Start @ end of line 38.
40	1001600 Regulatory review	M 25-Mar-92	04-May-92 U	40	532	25-Mar-92	04-May-92	0	
41	1001600 Draft Final	D 04-May-92	19-May-92	15	547	04-May-92	19-May-92	0	
42	1001600 Reg. concurrence	M 19-May-92	03-Jun-92 U	15	562	19-May-92	03-Jun-92	0	
1007000	PERF & COST REPORTS								
43	1007000 Month 1: Oct 1990	D 28-Sep-90	14-Nov-90	47	-5 A	28-Sep-90	12-Nov-90 A	-2	Completed.
44	1007000 Month 2: Nov 1990	D 01-Nov-90	14-Dec-90	43	25 A	01-Nov-90	13-Dec-90 A	-1	Completed.
45	1007000 Month 3: Dec 1990	D 01-Dec-90	14-Jan-91	44	58 A	01-Dec-90	10-Jan-91 A	-4	Completed.
46	1007000 Month 4: Jan 1991	D 01-Jan-91	14-Feb-91	44	87 A	02-Jan-91	12-Feb-91	-2	
47	1007000 Month 5: Feb 1991	D 01-Feb-91	14-Mar-91	41	115	01-Feb-91	14-Mar-91	0	
48	1007000 Month 6: Mar 1991	D 01-Mar-91	12-Apr-91	42	144	01-Mar-91	12-Apr-91	0	
49	1007000 Month 7: Apr 1991	D 01-Apr-91	14-May-91	43	176	01-Apr-91	14-May-91	0	
50	1007000 Month 8: May 1991	D 01-May-91	14-Jun-91	44	207	01-May-91	14-Jun-91	0	
51	1007000 Month 9: Jun 1991	D 01-Jun-91	15-Jul-91	44	238	01-Jun-91	15-Jul-91	0	
52	1007000 Month 10: Jul 1991	D 01-Jul-91	14-Aug-91	44	268	01-Jul-91	14-Aug-91	0	
53	1007000 Month 11: Aug 1991	D 01-Aug-91	13-Sep-91	43	298	01-Aug-91	13-Sep-91	0	
54	1007000 Month 12: Sep 1991	D 01-Sep-91	14-Oct-91	43	329	01-Sep-91	14-Oct-91	0	
55	1007000 Month 13: Oct 1991	D 01-Oct-91	14-Nov-91	44	360	01-Oct-91	14-Nov-91	0	
56	1007000 Month 14: Nov 1991	D 01-Nov-91	13-Dec-91	42	389	01-Nov-91	13-Dec-91	0	
57	1007000 Month 15: Dec 1991	D 01-Dec-91	15-Jan-92	45	422	01-Dec-91	15-Jan-92	0	
58	1007000 Month 16: Jan 1992	D 01-Jan-92	14-Feb-92	44	452	01-Jan-92	14-Feb-92	0	
59	1007000 Month 17: Feb 1992	D 01-Feb-92	13-Mar-92	41	480	01-Feb-92	13-Mar-92	0	
60	1007000 Month 18: Mar 1992	D 01-Mar-92	14-Apr-92	44	512	01-Mar-92	14-Apr-92	0	
61	1007000 Month 19: Apr 1992	D 01-Apr-92	14-May-92	43	542	01-Apr-92	14-May-92	0	
62	1007000 Month 20: May 1992	D 01-May-92	14-Jun-92	43	573	01-May-92	14-Jun-92	0	Need due to lines 3 & 6.
63	1007000 Month 21: June 1992	D 01-Jun-92	14-Jul-92	43	603	01-Jun-92	14-Jul-92	0	Need due to line 14.

M = MILESTONE; D = DELIVERABLE; A = ACTUAL; U = USATHAMA/AGENCY ACTION REQUIRED.

ATTACHMENT 2

Work Breakdown Structure

WORK BREAKDOWN STRUCTURE



JEG Project No.	WBS No.	WBS Description
10-G304-00	1004000	Project Management Plan
10-G304-00	1005000	Public Involvement
10-G304-00	1006000	Scoping Meeting and Site Visits
10-G304-00	1007000	Monthly Performance and Cost Reports
10-G304-00	1008000	Contract Support Activities
10-G304-00	1009000	Quality Control Plan
10-G304-00	1001100	Field Work/Investigation
10-G304-00	1001200	Data Management Activities
10-G304-00	1001300	Records Review
10-G304-00	1001400	Risk Assessment
10-G304-00	1001500	Preliminary Remedial Action Assessment (PRAA)
10-G304-00	1001600	Environmental Investigation
10-G304-00	1001700	Supplemental Tasks

ATTACHMENT 3

Monthly Projection of Resources by WBS Code

SUBMITTED BY JACOBS ENGINEERING GROUP INC.
SUBMITTED TO DEPARTMENT OF THE ARMY (USATHAMA)

MONTH: OCT 1991

06-Feb-91
04:08 PM

CONTRACT NO. DAAH13-90-D-0013
TASK ORDER NO. 0004
COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION
JACOBS PROJECT NO. 10-G304-00

[illegible]

SUBMITTED BY JACOBS ENGINEERING GROUP INC.

SUBMITTED TO DEPARTMENT OF THE ARMY (USATHAMA)

CONTRACT NO. DAAA15-90-D-0013

TASK ORDER NO. 0004

COOSA RIVER STORAGE ANNEX ENVIRONMENTAL INVESTIGATION

JACOBS PROJECT NO. 10-G304-00

MONTH: TOTAL

06-Feb-91
01:45 PM

DESCRIPTION	PERF. UNIT	WBS NO. 1004000	WBS NO. 1005000	WBS NO. 1006000	WBS NO. 1007000	WBS NO. 1008000	WBS NO. 1009000	WBS NO. 1001100	WBS NO. 1001200	WBS NO. 1001300	WBS NO. 1001400	WBS NO. 1001500	WBS NO. 1001600	WBS NO. 1001700	GRAND TOTAL
		HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS
PROGRAM MANAGER	35	0	0	20	0	0	93	0	0	0	0	0	0	0	113
TASK MANAGER	10	174	36	190	68	0	0	40	16	21	24	40	232	0	986
SR. ENV. ENGR.	10	0	0	0	0	0	0	0	0	0	0	60	320	0	380
SR. GEOLOGIST T1	10	8	16	139	62	20	20	242	54	27	40	80	472	12	1,172
SR. GEOLOGIST T2	10	0	0	0	0	0	0	196	0	0	0	0	0	0	196
SR. CHEMIST	5	0	0	0	0	0	0	0	32	0	0	0	0	0	32
CHEMIST	10	0	0	1	0	0	63	0	76	0	0	0	0	0	140
SR. SAFETY ENGR.	10	0	0	0	0	0	0	0	0	8	0	0	0	16	24
PUBLIC RELATIONS	10	0	100	0	0	0	0	0	0	0	0	0	60	0	160
ENV. ENGR.	10	8	0	0	0	40	0	0	0	0	0	120	490	20	678
GEOLOGIST TEAM1	10	0	0	0	0	0	8	196	0	16	0	0	212	20	452
GEOLOGIST TEAM 2	10	0	0	0	0	0	0	196	0	0	0	0	0	0	196
TOXICOLOGIST	5	0	0	104	0	0	0	0	0	0	100	0	120	0	324
DRAFTING	10	0	40	0	0	0	35	0	0	0	0	0	229	0	304
SR. GEOTECH. ENGR.	5	2	0	0	0	0	0	0	0	0	0	78	164	0	244
QA - ENVIRON.	5	4	0	0	0	0	8	0	0	0	0	0	84	0	96
QA - ENGINEERING	5	4	0	0	0	0	8	0	0	0	0	0	84	0	96
RISK ASSESSOR	10	0	0	0	0	0	0	0	0	16	60	0	43	9	128
QA - COORD./MGT.	10	0	0	0	0	0	100	40	0	0	0	0	0	0	140
DATA SYS. MGR.	10	0	0	0	0	0	0	0	80	0	0	0	0	0	80
FIELD SAFETY 1	10	0	0	32	0	0	0	242	0	0	0	0	0	0	274
FIELD SAFETY 2	10	0	0	0	0	0	0	196	0	0	0	0	0	0	196
WORD PROCESSING	10	0	0	0	0	0	0	0	190	0	0	0	0	0	190
PROJECT CONTROLS	35	122	0	0	272	0	0	0	0	0	0	0	0	0	394
SECRETARY	10	2	0	0	0	723	0	0	0	2	0	0	0	0	727
ACCOUNTING	10	0	0	0	0	300	0	0	0	0	0	0	0	0	300
CONTRACTS	10	0	0	0	0	260	0	0	0	0	0	0	0	0	260
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL LABOR HOURS		324	192	486	402	1,376	421	1,348	448	90	224	378	2,510	83	8,282
UNBURDENED LABOR COST		\$8,065	\$3,383	\$13,393	\$8,804	\$23,937	\$8,534	\$26,140	\$6,725	\$2,011	\$5,932	\$9,204	\$56,843	\$1,958	\$174,930
FRINGE		\$2,336	\$980	\$3,879	\$2,550	\$6,932	\$2,472	\$7,570	\$1,947	\$582	\$1,718	\$2,666	\$16,462	\$567	\$50,659
OVERHEAD		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
GENERAL AND ADMINISTRATIVE		\$9,790	\$4,107	\$16,258	\$10,687	\$29,059	\$10,360	\$31,733	\$8,163	\$2,441	\$7,201	\$11,174	\$69,006	\$2,377	\$212,360
SUBTOTAL		\$20,191	\$8,469	\$33,530	\$22,041	\$59,929	\$21,366	\$65,443	\$16,835	\$5,035	\$14,851	\$23,044	\$142,311	\$4,902	\$437,950
OTHER DIRECT COSTS		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TRAVEL		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL		\$20,191	\$8,469	\$33,530	\$22,041	\$167,972	\$21,366	\$65,443	\$16,835	\$5,035	\$14,851	\$23,044	\$142,311	\$4,902	\$545,993
SUBCONTRACTORS		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL		\$20,191	\$8,469	\$33,530	\$22,041	\$167,972	\$21,366	\$65,443	\$16,835	\$5,035	\$14,851	\$23,044	\$142,311	\$4,902	\$545,993
FEE		\$1,603	\$672	\$2,662	\$1,750	\$13,334	\$1,696	\$5,195	\$1,336	\$400	\$1,179	\$1,829	\$11,297	\$389	\$43,341
TOTAL ESTIMATED COST AND FEE		\$21,794	\$9,142	\$36,191	\$23,790	\$181,305	\$23,062	\$70,638	\$18,172	\$5,434	\$16,029	\$24,873	\$153,608	\$5,292	\$589,334

