**MOBILIZATION PLAN FOR THE Y-12 9409-5
TANK STORAGE FACILITY
RCRA CLOSURE PLAN**

FINAL

**Bob Fehling, Project Manager
Y-12 Environmental Restoration Division**

Revision 1

November 1993

**Prepared by
Science Applications International Corporation
301 Laboratory Road
Oak Ridge, TN 37831**

**Prepared for
Environmental Restoration Division
Oak Ridge Y-12 Plant**

**Operated by
Martin Marietta Energy Systems, Inc.**

**for the
U.S. DEPARTMENT OF ENERGY**

under contract DE-AC05-84OR21400

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APPROVALS

**MOBILIZATION PLAN
FOR THE SITE INVESTIGATION OF THE
9409-5 TANK STORAGE FACILITY
AT THE Y-12 PLANT
OAK RIDGE, TENNESSEE
OCTOBER 1993**

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Energy Systems ER Site Health & Safety Officer Date

Hugh C. Newkirk 11/9/93
Energy Systems ER Site QA Specialist Date

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ACRONYMS

BGS	Below ground surface
CFR	Code of Federal Regulations
CRF	Central Records Facility
DTSF	Diked Tank Storage Facility
Energy Systems	Martin Marietta Energy Systems, Inc.
ERD	Environmental Restoration Division
GET	General Employee Training
G-M	Geiger-Mueller
OJT	on-the-job training
OSHA	Occupational Safety and Health Administration
PM	Project Manager
QA	quality assurance
RCRA	Resource Conservation and Recovery Act
SAIC	Science Applications International Corporation
SOW	statement of work
TLD	thermoluminescent dosimeter

1. INTRODUCTION

This Mobilization Plan identifies the activities and equipment necessary to begin the field sampling for the Oak Ridge Y-12 9409-5 Diked Tank Storage Facility (DTSF) Resource Conservation and Recovery Act (RCRA) closure. The elements of the plan outline the necessary components of each mobilization task and identify whether Science Applications International Corporation (SAIC) or the Martin Marietta Energy Systems, Inc. (Energy Systems) Y-12 Environmental Restoration Division (ERD) will be responsible for task coordination. A list of SAIC and ERD contacts and their position on the project is given in Table 1. A field readiness review will be conducted by SAIC at least 1 week prior to mobilization.

Table 1. Project personnel

Contact	Position	Telephone
Energy Systems		
Bob Fehling	Project Manager	574-0705
Mitch Guinn	Field Coordinator	576-5789
Health Physicist	To be determined	
SAIC		
Greg Schank	Project Manager	481-8760
Michael Klidzejs	Field Team Leader	481-8739
Dan Thompson	Field Sampling Manager	481-4750
Greg Arias	Sampling Team Member	481-8720
Jim Brennan	QA Manager	481-4621
Fred Fournier	Health & Safety Manager	481-2342
Subcontractors		
To be determined		

The field work for the closure of the 9409-5 Storage Tank Facility will be conducted in two phases: Mobilization Phase and Soil Sampling Phase.

Prior to mobilization, any rainwater accumulated within the TSF will be sampled for characterization and removed to allow for soil sampling. Sampling, characterization, and removal of accumulated rainwater will be conducted by Energy Systems' Environmental Management Division. Approval to discharge or direction to treat the rainwater will be provided by the Clean Water Program. The Environmental Restoration Division (as facility owner) will be responsible for the ultimate disposal.

During the Mobilization Phase the site will be inspected (1) to determine the accessibility of the storage facility and the surrounding area, (2) to identify the existence of obvious contamination for suspect area investigations, and (3) to locate and mark the boring locations. This initial reconnaissance will be conducted by the SAIC Project Manager (PM), the Field Team Leader, and the ERD Y-12 PM and Field Coordinator.

After mobilization, soil boring installations inside and outside of the diked area will be performed to determine whether soil contamination exists at the storage facility and to provide baseline data for remediation. A hollow-stem auger drilling rig will be used to drill boreholes at 14 sampling locations. Six-in. subsurface soil samples will be collected with a hand auger continuously from the ground surface

to a depth of 18 in. below the ground surface (BGS). Two-ft split spoons will be used to collect samples at 5-ft intervals, below 18 in., until the water table or auger refusal is encountered.

2. TRAINING AND MEDICAL MONITORING

All project personnel will receive training which (1) is required for entry to the Y-12 Plant, (2) is required by the Occupational Safety and Health Administration (OSHA) to work on a hazardous waste site, and (3) is specified in any of the site-specific work plans developed for this project as site-specific training. Individual training requirements for personnel will vary depending upon project involvement. The SAIC PM will be responsible for insuring that all SAIC and subcontractor personnel have received required training prior to mobilization. Table 2 provides a matrix of Y-12 Plant training courses and the personnel required to complete each. Table 3 presents a matrix of required OSHA training. Table 4 presents a matrix of project personnel and all the training requirements for each. Copies of all training records will be delivered to the Energy Systems PM, maintained in the SAIC Central Records Facility (CRF), and kept on site during field activities.

2.1 Y-12 PLANT TRAINING REQUIREMENTS

All appropriate training required for entrance to the Y-12 Plant will be completed prior to mobilization. The SAIC and Energy Systems Project Managers will identify training requirements for this project and will coordinate with the ERD PM or Training Coordinator to schedule Energy Systems courses. Table 2 provides a matrix of Y-12 Plant training courses and the personnel required to complete each. The following is a list and description of courses that will be required for this project:

- **General Employee Training (GET)-Basic** - A 4-h training session conducted by Energy Systems that covers general topics, radiation protection, and hazard communication.
- **Waste Generator Training** - A course taught by ERD to teach contractors how to deal with wastes generated during field investigations.
- **Whole Body Count** - Medical monitoring performed by Energy Systems for field staff who may be exposed to radiological contamination.
- **Urinalysis** - Medical monitoring performed by Energy Systems for field staff who may be exposed to radiological contamination.
- **Security Briefing/Safety Training** - Briefings performed by Energy Systems required to obtain pink-badges for plant access.
- **External Dosimeters** - All personnel will participate in external dosimetry monitoring and each staff member will be issued a thermoluminescent dosimeter (TLD).

Table 2. General Y-12 training matrix

General Employee Training (GET)							
Subject	Security Briefing	General Topics	Radiation Protection	Hazard Communication	Criticality Safety	Urinalysis/ Whole Body Count	Ingress/ Egress
Course Number		TTG004745	RAD09298 ^a	HEA894744	SAN093123 ^a	RAD0403119	RAD094116
Escorted visitor							
Unescorted visitor/contractor outside exclusion or protected area	X	X	X	X			
Unescorted visitor/contractor entering exclusion or protection area	X	X	X	X			
Unescorted visitor/contractor ^b entering controlled radiological area	X	X	X	X		X	X
Unescorted visitor/contractor ^b entering fissile area	X	X	X	X	X	X	X
Escorted visitor/contractor ^b entering fissile or radiological area						X	

^aRequires subject-matter-certified instructors.^bVisitors/contractors in area for more than 10 days.

NOTE: Listed above are the minimum requirements for entry as specified. Additional area-specific training will be required for entry into specialty areas such as carcinogen storage, remedial action sites, etc.

Table 3. Summary of OSHA hazardous waste operations training

29 CFR 1910.120 Minimum Training Requirements								Remarks
Employee category	40-h training	24-h training	8-h managers training	8-h annual refresher	3-d field experience	1-d field experience	Annual medical monitoring	
General site worker Involved in any activity with potential for exposure to a hazardous substance	X			X	X		X	
Occasional on-site worker Not likely to be exposed to a hazardous substance		X		X		X		
Site support workers Not on site but in support zones where potential exposures are below published levels		X		X		X		
Supervisors/managers At all hazardous waste sites	X		X	X	X	X	X	

Table 4. Project training matrix

	G. Schank	M. Klidzejs	D. Thompson	G. Arias	F. Fournier	Drilling subcontractor	Surveyor ^a
GET-Basic	X	X	X	X	X		
Waste generator training		X	X				
Whole body count		X	X	X	X	X	
Urinalysis external dosimetry	X	X	X	X	X	X	
OSHA 40-h hazardous waste training	X	X	X	X	X	X	
OSHA 8-h supervisor training	X	X					
3-d field experience	X	X	X	X	X		
Medical evaluation	X	X	X	X	X	X	
Respirator fit test	X	X	X	X	X	X	

^aThe subcontracted surveyor will be required to have all training necessary to enter the Y-12 Plant and complete work specified in the surveying statement of work (SOW). This will be a contract requirement.

2.2 OSHA TRAINING REQUIREMENTS

The OSHA training requirements for personnel performing work on hazardous waste sites are summarized in Table 3. Documentation of applicable training completed for all personnel will be kept in the SAIC CRF, delivered to the Energy Systems PM, and kept in a file on site. Training and monitoring required by OSHA for this project includes:

- **OSHA 40-h Hazardous Waste Training (OSHA 1919.120)** - This includes an 8-h yearly refresher course, medical monitoring, and respirator fit test provided by the SAIC Health and Safety Service Center.
- **OSHA 8-h Manger/Supervisor Training (OSHA 1910.120)** - This course is required for the SAIC PM and is provided by SAIC.
- **Field Experience** - General site workers will receive 3 d of field experience under a trained supervisor. Occasional on-site workers and support workers will receive 1 d of field experience training.

2.3 SITE-SPECIFIC TRAINING

Additional site-specific training identified by the SAIC PM will be required for project personnel. This site-specific training will include reading assignments, field training, and on-the-job training (OJT) and will focus on operating procedures, waste management procedures, quality assurance (QA) requirements, sample management and shipping practices, and health and safety issues. The SAIC Project Manager will be responsible for coordinating all site-specific training and will ensure that all training is completed and documented.

3. ACCESS TO THE Y-12 PLANT

Prior to mobilization, the SAIC PM will identify all project personnel who will require access to the Y-12 Plant. The drilling subcontractor will provide the SAIC PM with a list of personnel who will need access to the Y-12 Plant. The SAIC and ERD PMs will determine what type of badge or pass will be needed by each person requiring access. This determination will be based on project involvement and the length of time to be spent on-site. As the 9409-5 DTSF is located within an unsecured area, only pink badges or visitor passes will be required.

Visitor badges and pink badges allow access to unsecured areas of the Y-12 Plant. A visitor badge is obtained through a request by ERD personnel to Y-12 Security. The visitor's name, date of birth, and social security number must be provided to ERD. Positive photo identification is required at the entry portal for a visitor to get a badge.

A pink badge is a picture identification for non-Q-cleared people that allows access through the Y-12 portals. This badge can be obtained through a request by ERD personnel to Y-12 Security. The person's name, date of birth, and social security number are required. Attendance at a 1-h security training session and a 1-h safety training session and positive picture identification are required. Scheduling to

obtain a pink badge can take up to 2 weeks. SAIC and subcontractor personnel working on-site for a week or longer should obtain a pink badge.

4. PERMITS AND PASSES

4.1 VEHICLE PASSES

The SAIC PM will be responsible for providing to the ERD PM or Field Coordinator the required information to obtain vehicle passes. This information includes: driver name, employer, date of birth, social security number, and badge number. It is anticipated that vehicle passes will be needed for the drilling subcontractor's drilling rig and two support vehicles for approximately 3 weeks. All private vehicles entering the Y-12 Plant must have a magnetic or permanent sign identification on the side of the vehicle.

4.2 WORK PERMITS AND INSPECTIONS

All subsurface borings will require penetration permits. The SAIC PM will provide to the ERD PM a map showing exact locations of all 14 boreholes. A penetration permit will also be obtained if construction of a decontamination water holding pit requires ground penetration in excess of 2 ft. In addition, the anticipated depth of each borehole will be provided. Penetration permits will be obtained by the ERD PM. They will be on site and available throughout the field investigation. Prior to starting any subsurface penetration, a check will be made by Energy Systems utility personnel to ensure that no utility lines are present. In addition, a shovel or hand auger will be used to carefully penetrate the first 2 ft BGS to avoid hitting any utility line that was not identified.

Other permits and inspections that will be required include hoisting and rigging inspections and radiological contamination surveys. Industrial Safety will inspect the drill rig and the drill rig maintenance records to ensure that hoisting and rigging safety requirements are met. Health Physics will survey the drill rig and sampling tools for radiological contamination both before mobilization and prior to demobilization. A green-tag will be issued by Health Physics before the drill rig or equipment is removed from the Plant. The SAIC Project Manager will coordinate with the Energy Systems Project Manager in scheduling the above activities.

4.3 PORTABLE TELEPHONE PASS

A portable telephone will be required by SAIC while field work is being conducted. Having the telephone will preclude the need to enter any building to make phone calls and will provide the field team with constant communication capabilities. This will also allow for contact with field team members in case of an emergency.

The SAIC PM will fill out the necessary forms for the portable telephone pass and submit them to the ERD PM. The ERD PM will send the completed forms through the proper channels to receive this pass. The telephone pass will be kept with the telephone at all times while on site. The portable telephone will not be brought onto the Y-12 Plant without the proper pass.

4.4 PROPERTY REMOVAL PASS

A property removal pass is required for any Energy Systems property that will be removed from the Y-12 Plant. Energy Systems property can be identified by the "Government Property" sticker. The ERD PM or Field Coordinator will obtain any necessary property removal passes. It is presently not anticipated that any Energy Systems property will be needed. No passes are required for SAIC or driller equipment.

5. DECONTAMINATION/STAGING AREA

A decontamination and equipment staging area will be established inside the Y-12 Plant. The ERD PM or Field Coordinator will designate where this area will be set up. Water for the decontamination area will be obtained from a fire hydrant equipped with a backflow preventer. The nearest usable hydrant will be identified by the ERD Field Coordinator. Electricity for the decontamination area will be provided using portable generators supplied by the drilling subcontractor.

A temporary lined decontamination pit to contain the water used during decontamination will be constructed by the drilling subcontractor. The design of the decontamination pit will be submitted by the drilling subcontractor and approved by the SAIC PM prior to mobilization. The minimum requirements for this design will ensure that all decontamination water will be contained in the pit and that the pit will be large enough to allow for the drilling rig to be decontaminated. All decontamination water will be put into 55-gal drums with bung type openings supplied by Energy Systems. Drill cuttings and used protective clothing will be handled as specified in the Waste Management Plan.

SAIC equipment will be decontaminated using galvanized wash tubs to contain decontamination water. SAIC equipment consists mainly of small items such as hand augers and bowls. Energy Systems will provide 55-gal drums with bung type openings for storage of decontamination water. The project Waste Management Plan details the disposal of all waste material.

6. EQUIPMENT

Various types of equipment and supplies will be required to complete the field sampling activities (Table 5). This list does not include the tools and equipment supplied by the drilling subcontractor. The list of drilling subcontractor equipment will be submitted to the SAIC PM by the drilling subcontractor prior to mobilization and will be included in the Mobilization Plan as an attachment.

All necessary equipment will be obtained in sufficient quantity to complete the field work without work stoppage. The equipment will be mobilized and on site at the start of work and will be staged in the same area as the decontamination pit. It will be kept separate and far enough away from the decontamination pit to ensure that no cross-contamination will occur.

Table 5. Equipment list

Air monitoring equipment	Hand tools
HNu w/Probes	Shovel
OVA	Posthole digger
Explosive/O ₂ Meter	Measuring tape (100-ft)
Jerome Mercury Vapor Meter	Hand auger bucket
	Hand auger extensions
	Hand auger handles
	Sampling spoons
	Stainless steel or glass bowls
	Water level indicator
Basic equipment	Miscellaneous
Kimwipes	Bentonite
Surgeon's disposable gloves	Garbage cans
Duct tape	Chairs
Nylon strapping tape	Cellular telephone
Plastic roll	Traffic cones
Trash bags	Flagging or caution tape
Aluminum foil	Munsell color chart
Poly bags (for samples)	Cement
	Fire extinguisher
Protective clothing/equipment	Sample containers
Tyvek coveralls	Sample bottles
Safety glasses	Ice chests
Cooler (for drinks)	Custody seals
PVC or equivalent (Butyl-n) gloves	
Steel toe boots	
Hard hats	
Decontamination equipment	Reagents/liquids
Bath tub	Organic-free water
Round wash tub	Propanol
Square wash tub	
Plastic buckets	
Stainless steel bucket	
Tables	
Tap water and sprayer	Radiation detectors
Organic-free (Type II) water and sprayer	Ludlum model 3 survey meter or equivalent
Isopropanol and sprayer	with G-M pancake probe
Liqui-nox soap	Ludlum model 12 count rate meter or equivalent with air probe
Brushes	(scintillation counter)
Steam cleaner	
Kerosene and can	

7. MANAGEMENT

A project organization chart is presented in Fig. 1. The SAIC PM or Assistant PM will be on site during field sampling and will be responsible for the overall management of the project. This will be done in close coordination with the ERD Field Coordinator. The SAIC Field Sampling Manager will be responsible for the field sampling team and the actual collection of samples.

7.1 FIELD WORK

A field readiness review will be conducted by the SAIC QA Officer one week prior to mobilization to the field. All field team members, the SAIC PM and Assistant PM, the SAIC contracts manager, and the Health and Safety Officer will participate in the readiness review. Energy Systems personnel including the PM and the Field Coordinator will also be encouraged to attend. After the readiness review is satisfactorily completed, sampling will begin. Personnel required to complete sampling and who will be on site include: one driller, two driller helpers, the SAIC PM or Assistant PM, the Field Sampling Manager, one Sampling Team Member, and the ERD Field Coordinator. The SAIC PM or Assistant PM will also serve as the Supervising Geologist on the drilling rig. It is anticipated that this effort will take approximately three working weeks.

7.2 SAMPLE MANAGEMENT

Sample collection and packaging will be done by the Field Sampling Manager and the Sampling Team Member. All samples will have pre-printed tags and labels for the sample containers. Samples will be scanned for radiological contamination prior to packaging. Samples going to the laboratory will be packaged and put on ice for shipment. Chain-of-custody forms and custody seals will be used for all samples. The SAIC PM will be responsible for all samples collected.

Martin Marietta Energy Systems, Inc.

RI Subcontractor

Fig. 1. Project organization chart.