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HUNTERS POINT
SSIC NO. 5090.3.A

FINAL REPORT

Hunter's Point Cesium Remediation
San Francisco, California

Prepared by:

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San Francisco, California

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1.0 INTRODUCTION

Allied Technology Group, Inc. (ATG) was contracted by the Industrial Operations Command (IOC), Radioactive Waste Disposal Office for the remediation of a site contaminated with Cesium-137 at the Hunter's Point Annex, San Francisco, California. The remediation was to include the packaging and shipment for disposal of the resulting waste. ATG has prepared this report and the attached supporting documentation in accordance with Delivery Order Number: DAAA09-95-G-0007, Project Number: USN 95-007 to summarize all on site activities pursuant to this delivery order.

The IOC Point of contact for this project was a Mr. Dave Horton. The Radiological Affairs Support Office, RASO, point of contact was LCDR Lino Fragosso. The facility representative POC (EFA WEST) was Mr. Dave Song. Project Director for ATG was Mr. William Haney. The project manager was Mr. Darren W. Smith and project supervisor was Mr. Neal Whatley.

All work plans and site specific governing procedures were reviewed and approved by IOC in conjunction with ATG's project management.

2.0 SITE DESCRIPTION

2.1 A Cesium-137 asphalt contaminated site was discovered by a Navy's contractor during environmental investigation. The site is located at Hunter's Point Annex in San Francisco, California between Buildings 364 and 351 of Parcel D. It is believed that a spill from past operations occurred at this site causing a peanut-shaped area with a dimension of 20' x 8'. Prior to ATG's presence on site an independent party surveyed the site and the elevated readings were outlined. A sample was taken from within the elevated readings and revealed Cesium-137 contamination with a level of 232 pCi/gram. ATG's scope of work was to remediate this peanut shaped area to background levels.

3.0 DESCRIPTION OF WORK

3.1 General

Industrial Operations Command, Radioactive Waste Disposal Division requested the following work to be completed per their Scope of Work dated 12/13/95.

3.1.1 Perform all work under ATG's NRC license with the State of Washington. This included the preparation of the Work Plan (Appendix A), a Quality Assurance Project Plan (Appendix B), and a Health and Safety Plan (Appendix C) for the State of Washington's review and approval.

3.1.2 Provide the remediation, packaging, and shipment of the contaminated asphalt from Hunter's Point Annex.

3.1.3 Preparation of a Final Report detailing all on site activities.

3.2 Health and Safety

3.2.1 A Site Specific Health and Safety Plan was developed for the activities specified in Section 4.0 of this report. In general, the primary health hazard associated with the activities conducted on site was exposure to Cs-137. Personnel working in extreme high winds was the secondary health concern.

3.2.2 The principle isotope of concern was Cesium-137. Radiological controls consisted of, but were not limited to, contamination surveys, air sample surveys, posted boundaries, all personnel involved wearing dosimetry, and all personnel performing work under the direction of a Radiation Work Permit (RWP).

3.2.3 Daily safety meetings were conducted with all ATG personnel. Emphasis was placed each day on radiological and physical hazards.

3.2.4 All personnel involved in handling radioactive materials were issued TLDs (Thermoluminescent dosimeters) for the purpose of measuring the dose equivalent received while conducting project activities. Results are shown in Appendix D of this report.

3.3 Site Preparation

3.3.1. A Radiation Work Permit (RWP) was issued by the Health Physics Supervisor and approved by the RSO Manager prior to the start of work providing guidelines specifying appropriate protective measures addressing the existing radiological conditions, work scope limitations, radiological limitations, specific protective requirements, ALARA considerations, and instructions to Health Physics Technicians. The RWP outlined the requirements for equipment, monitoring frequencies, safety considerations, etc. that the individual(s) involved in handling radioactive materials must

must comply with while working at Hunter's Point in order to perform his/her job function in a safe manner. A copy of the RWP is provided as Appendix E.

3.3.2. Personal radiation dosimeters (TLD's) were issued to all individuals involved with handling radioactive material, or entering the exclusion zone work area.

3.3.3. The major area of concern at the site was established through initial radiological surveys to be the outlined peanut shaped CS-137 spill area.

3.3.4. The spill area was isolated from general access with yellow and black caution tape posted at 25' around the site perimeter. This posting also established the outer support zone perimeter. The fence surrounding the site was kept locked during non-work hours.

3.3.5. The peanut shaped CS-137 spill site was surveyed to assess the radiological conditions of the area. Survey results are provided in Appendix F.

3.3.6. Contamination control was established by conspicuously posting the spill outline with yellow and magenta ribbon/Radioactive Material placards to designate the exclusion zone.

3.3.7. The contamination reduction zone was established between the Exclusion zone and Support zone. A "STEP OFF PAD" was placed at the boundary of the exclusion zone and the contamination reduction zone to aid with donning and removal of protective clothing and personnel equipment access.

3.3.8. All loose gravel and debris was removed from the work area prior to remediation.

3.3.9. An air sampler unit was set up in the exclusion zone in preparation for continuous air sampling during remediation.

3.3.10. A clean laydown area was established in preparation for receipt and loading of (4) 55 gallon drums.

4.0 SAMPLING/SURVEYING

4.1 Basic initial site radiological surveys were done on Friday, February 23, 1996. This survey was performed in the peripheral area of the site.

Results of these surveys indicated some areas of elevated radioactivity within the outlined area. These surveys are provided in Appendix F of this report.

4.2 Low volume air samples were obtained in worker breathing zones during the entire removal process. No detectable airborne activity and/or above 10% of the DAC value listed in 10 CFR 20 for Cs-137 were detected on any of these samples. Air filters were counted with a Ludlum Model-2929 Dual Alpha Beta/Gamma Scaler equipped with a Model 43-10-1 scintillation probe.

The results of these samples are included in Appendix G of this report.

4.3 Radiation and contamination surveys were performed utilizing the following instrumentation:

Ludlum Model-12s Micro-R Meter (scintillation detector)
Ludlum Model 3 Survey Meter with model 44-10 probe.
Ludlum Model 2929 Dual Alpha Beta/Gamma Scaler
Ludlum Model-12 Survey Meter with model 44-09-GM Dectector.

4.4 All smear survey sample papers were counted on a Ludlum Model-2929 Dual Alpha, Beta/Gamma Scaler with a scintillation probe.

4.5 Soil Samples

A total of twenty (20) confirmatory samples were obtained from the removal area and analyzed by Analytical Technology, Inc. for Isotopic Cesium-137 with a one week turnaround. The results of these analysis and survey have been provided in Appendix H.

5.0 PROJECT REMEDIATION ACTIVITIES

5.1 Pre-surveys, establishment of the Radiation Work Permit (RWP), and stablishment of the exclusion zone were done prior to any removal activities. The area was cleaned of all debris and four 55 gallon 7A drums were placed at the east end of the exclusion zone. A frisking station and air monitoring equipment were set up at the north side of the exclusion zone.

5.2 The peanut-shaped area was removed approximately four inches below surface. The material was placed into the 55 gallon containers and surveyed for release from the area. A total of 30 cubic feet was removed from the site.

5.3 The four containers were surveyed for both smearable activity and dose rate. No detectable smearable activity was found. The containers were manifested and shipped to the appropriate disposal site per ATG's scope of work. A copy of the manifest are provided as Appendix I.

5.4 The area was then surveyed and sampled for free release. The surveys for release were performed with the following instruments: Ludlum Model 12, with a 44-09 probe; Ludlum Model 12s; and Ludlum Model 3, with a 44-10 probe.

5.5 A centerline was marked through the area. Samples were obtained on both sides of the centerline at a rate of every three feet. Two random samples (Samples SS0026C & SS0027C) were obtained in the vicinity of the highest reading from the pre-surveys. Six samples were obtained in the area adjacent to the removed area. They were samples SS008C-SS013C. Confirmatory sample results are provided in Appendix H. A total of twenty (20) confirmatory samples were obtained.

5.6 All tools, equipment, etc. utilized during removal were surveyed prior to unrestricted release. No detectable activity above background levels were detected. Release surveys of equipment have been provided in Appendix F.

5.7 The exclusion zone and postings were removed from the site.

5.8 All on site activities were directly supervised by Mr. Dave Horton, Industrial Operations Command, Department of the Army.

6.0 SITE RELEASE

6.1 Twenty confirmatory samples were obtained in the removed area and/or its adjacent area. The sample results range between 0 to 1.2 pCi/gram with an average of .341 pCi/gram. The table below illustrates the sample results. These results satisfy the NUREG-1500 limits for Cesium-137 [2.14 pCi/g at the 3 mrem/yr level for the most restrictive scenario (residential)] and that at these levels, human health is protected.

TABLE 6.1 Confirmatory Sample Results

Sample ID	Activity	(+/-)	Analysis
SS008C	0.913	0.103	DRY
SS009C	0.494	0.070	DRY
SS010C	1.170	0.113	DRY
SS011C	0.339	0.055	DRY
SS012C	1.160	0.109	DRY
SS013C	0.152	0.042	DRY
SS014C	0.197	0.047	DRY
SS015C	0.528	0.051	DRY
SS016C	0.029	0.025	DRY
SS017C	0.379	0.050	DRY
SS018C	0.295	0.047	DRY
SS019C	0.097	0.041	DRY
SS020C	0.096	0.029	DRY
SS021C	0.000	0.029	DRY
SS022C	0.068	0.034	DRY
SS023C	0.086	0.041	DRY
SS024C	0.220	0.049	DRY
SS025C	0.295	0.060	DRY
SS026C	0.236	0.042	DRY
SS027C	0.072	0.025	DRY

Confirmatory Results Average 0.341 pCi/gram

6.2 The area was 100 % surveyed to release the site. The release surveys were performed for Beta-gamma activity and showed no sign of elevated activity above background levels. A copy of the survey is supplied in Appendix F.

6.3 All rental equipment and tools were surveyed, data confirmed no radiation levels above limits of Regulatory Guide 1.86.

7.0 PICTORIAL

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APPENDIX A
WORK PLAN

ALLIED TECHNOLOGY GROUP, INC.

PROJECT
DETAILED WORK PLAN

for the

HUNTER'S POINT
CESIUM REMEDIATION & RADIUM DISPOSAL

Revision 1

January 1996

ATG, Inc.

DETAILED WORK PLAN

Hunter's Point
Cesium Remediation & Radium Disposal

Revision 1

January 1996

Concurrence: _____ 1/25/96
William G. Haney, ATG Project Director — Date

Concurrence: _____ 30 Jan 96
Dave Horton, IOC Radiation Technical Specialist — Date

Concurrence: _____ 1/25/96
Darren Smith, ATG Project Manager — Date

Approval: _____
Date

1.0 INTRODUCTION

1.1 This Project Detailed Work Procedure, in conjunction with the Health and Safety Plan, and Quality Assurance Plan describes the activities and methods to be used for the remediation, packaging, shipment, and disposal of a section of asphalt containing radioactive Cesium-137 and the pick-up and disposal of specific radioactive sources from Hunter's Point Annex, San Francisco, CA.

2.0 SITE DESCRIPTION AND HISTORY

2.1 The asphalt containing the Cesium-137 is located in Parcel D in a fenced area adjacent to buildings 364 and 351. The Cesium-137 spill covers a peanut-shaped area approximately eight feet by twenty feet on an asphalt pad. A sample in the area reveals Cesium-137 contamination in the top several inches at levels of 232 pCi/gram.

2.2 The Radium contaminated waste associated with this project consists of radium devices and a radium contaminated safe. Under a separate contract, an Industrial Operations Command (IOC) subcontractor will decontaminate this safe and package decontamination materials, and ATG will arrange for transport.

3.0 ASSUMPTIONS AND CONSIDERATIONS

3.1 The basis for this Work Plan is the information provided in the Scope of Work.

3.2 Decontamination and survey methods are based upon accepted practices utilized by Allied Technology Group, Inc. in past projects of a similar nature, with a strong emphasis on Health and Safety, Radiological Controls, and Environmental Protection measures.

3.3 Decontamination, survey techniques and waste packaging and transport requirements to be used are described in the Health & Safety Plan and Allied Technology Group Field Procedures.

3.4 Survey techniques utilized for the decontamination and release activities will be as described in the Health & Safety Plan.

3.5 Radiological controls, hazardous material controls, and industrial safety measures shall be implemented in accordance with the Health & Safety Plan prior to start of removal activities.

3.6 The Project Manager (or his designated alternate) shall ensure that all project personnel are briefed on the identified hazards and work plan prior to commencing on site work.

3.7 Radiological background levels for Parcel D between Buildings 364 and 351 will be determined by obtaining seven (7) soil samples suspected to be free from Cesium 137 contamination. Soil sample analysis will be performed at Mountain States Analytical, Inc. or an equivalent certified radionuclide and hazardous material laboratory. Results will be reported in picocuries per gram (pCi/gm) for radiological samples. In addition, readings from these seven sample locations will be taken with a Ludlum Model 3 Survey Meter with an attached Model 44-10 probe or equivalent (2 x 2 NaI detector) and a Ludlum Model 19 Micro-R meter (1 x 1 NaI detector) to determine the radiological background for screen surveys.

3.8 Limits for radiological release of any affected area for this project are no detectable activity above background measured with a Ludlum Model 3 with an attached Model 44-10 probe or equivalent (2x2 NaI detector) and a Ludlum Model-19 microR meter (1x1 NaI detector) on contact with any ground area and no loose (transferable) radioactive materials, greater than background levels, per verbal guidance from Industrial Operations Command (IOC). Radiological release sampling of any affected area for this project are: No activity above background.

3.9 Personnel frisking from all radiologically controlled areas shall be performed with a G-M tube pancake frisker. The release limit will be any Beta-Gamma detectable activity above background levels.

4.0 REFERENCES

4.1 U.S. Code of Federal Regulations, Title 10, "Energy", Part 19 and Part 20.

4.2 U.S. Code of Federal Regulations, Title 29, "Labor", Part 120.

4.3 U.S. Code of Federal Regulations, Title 40, "Protection of the Environment".

4.4 NRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors".

4.5 NUREG/CR 2082 "Monitoring for Compliance with Decommissioning Termination Survey Criteria".

4.6 NUREG/CR-5849 "Manual for Conducting Radiological Surveys in Support of License Termination", Draft June 1992.

4.7 NUREG/CR 5512, "Residual Contamination from Decommissioning".

4.8 NRC Decommissioning and Regulatory Issue Branch Technical Position, "A Summary of NRC & Interim Radiological Cleanup Criteria and Current Dose Bases" (November 1992).

4.9 U.S. Nuclear Regulatory Commission Division of Industrial and Medical Safety, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (August 1987)".

4.10 The Hand Book of Rigging for Construction and Industrial Operations, 3rd Edition, W.E. Rossnagel.

4.11 American National Standard (ANSI) B30.5-'68 "Basic Hand Signals for Boom Equipment Operation".

4.12 Allied Technology Group "Health and Safety Plan for Hunter's Point, Cesium Remediation and Radium Disposal Project".

4.13 Allied Technology Group "Quality Assurance Plan for Hunter's Point, Cesium Remediation and Radium Disposal Project".

5.0 SCOPE OF ACTIVITIES

5.1 Preliminary Activities

5.1.1 Preliminary activities for this project will include establishment of personnel access requirements in accordance with Hunter's Point policies and requirements, Allied Technology Group policies and procedures, the Project Health & Safety Plan, and completion of the following:

Site Registration Form
Issuance of personal dosimetry
Pre-work training and documentation
Issue of Radiation Work Permits for control of work activities

5.3 Area Setup and Controls

5.3.1 The first activity associated with the removal of the contaminated asphalt will be the isolation of the area from general access, establishment of contamination control, and setup of work areas. This will consist of establishing area boundaries and posting, setup of personnel and equipment access, installation or activation of support requirements, and preparation of equipment and waste handling areas.

5.4 Excavation

5.4.1 Any required excavation exceeding 2 feet below ground surface (gbs) shall be done in accordance with Appendix B of the Health and Safety Plan in such a manner as to minimize any area excavated as to the use of shoring, bracing and grading as necessary to maintain the excavated area as a safe work environment.

5.5 Initial Survey and Preparation of Radiation Work Permits

5.5.1 Prior to start of material removal activities, radiological control personnel shall perform an initial survey of work and designated storage areas to determine general levels of contamination and exposures. A concurrent safety inspection shall be performed to identify, remove, or mark safety hazards. Upon completion, the Radiological Controls Supervisor shall ensure the preparation, review, posting and implementation of Radiation Work Permits.

5.6 Pre-Work Surveys

5.6.1 Prior to the start of further activities, a general survey of the exterior surface areas shall be performed to identify relative contamination of general areas. Survey techniques used will be as described in the Health & Safety Plan. Results of this survey shall be used to identify hot spots and the exact dimension of the Cesium-137 spill. In addition, radiological surveys will be conducted on empty waste containers prior to their use.

5.7 Initial Cleanup/Housekeeping

5.7.1 Once the area has been setup and placed under radiological controls, workers will proceed with a general area cleanup consisting of the removal and survey of any extraneous materials. The purpose of this will be to remove loose materials and trash which may hamper surveys and increase the volume of contaminated material.

5.8 Shipping Container Loading Area Engineering Control Setup

5.8.1 The area in which the containers will be loaded will be prepared with 10 mil thick double containment pad to ensure control of the spread of contamination. This area shall be posted with the appropriate radiological controls and barriers required to control the area(s). All materials not packaged and labeled per DOT requirements shall be stored in posted areas which have established barriers.

5.9 Loaded Container Storage Area

5.9.1 Any area utilized for storage of properly loaded and labeled shipping containers shall be marked appropriately and entry controlled to precluded unmonitored exposure of workers or other site personnel.

5.10 Contaminated Asphalt Removal

5.10.1 The Contaminated asphalt will be removed by the use of a backhoe and jack hammers. The use of hand tools will help reduce the amount of waste generated during remediation. It is not anticipated that any mechanical means will be required to break up the materials for packaging.

5.10.2 Environmental air monitoring will take place for radioactive materials in accordance with the Health and Safety Plan and Radiation Safety Plan (Appendix A) any time work with radioactive materials is performed.

5.10.3 The contaminated asphalt will be removed from the designated locations and placed in the appropriate shipping containers located in the container loading area as established.

5.10.4 The containers will be loaded so that the weight is evenly distributed.

5.10.5 Dewatering of the containers will take place to the extent practical, to ensure that no visible free standing liquid exists in the containers prior to movement to the storage area.

5.10.6 The containers will then be sealed with the supplied cover.

5.10.7 The gross weight of the container will not exceed manufacturers recommendations. The containers will be weighed and the weight recorded.

SECTIONS 5.11 AND 5.12

PAGES 2 AND 3

THESE SECTIONS ARE NOT AVAILABLE.

EXTENSIVE RESEARCH WAS PERFORMED BY NAVFAC SOUTHWEST RECORDS OFFICE TO LOCATE THE MISSING SECTIONS. THIS PAGE HAS BEEN INSERTED AS A PLACEHOLDER AND WILL BE REPLACED SHOULD THE MISSING ITEMS BE LOCATED.

FOR ADDITIONAL INFORMATION, CONTACT:

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5.13 Radiological Surveys of Loaded Bins

5.13.1 Prior to leaving the loading area, the containers will be surveyed to ensure no loose surface contamination exists on the exterior surfaces by performing gross masslinn surveys. The masslinn will then be checked with portable field instruments. Any detectable activity above background levels found on the masslinn will require the further investigation and possible decontamination prior to movement of the containers to the storage area. Cursory dose rate surveys will also be performed on the exterior surfaces of the bin.

5.13.2 If the survey indicates the presence of loose surface contamination on the exterior surfaces the container(s) will be decontaminated in accordance with Allied Technology Group Field Procedure HP-OP-006, "Decontamination of Equipment, Materials, and Tools".

5.13.3 The container will then be properly labeled and placarded for the hazards present.

5.13.4 Once the container(s) has been surveyed and acceptable results are found, containers will then proceed to the designated storage area.

5.14 Radiological Surveys of Loaded Bins in Storage Area

5.14.1 Upon arrival at the storage area each container will be given a unique identifying number.

5.14.2 Detailed dose rate and contamination surveys will then be performed on the bin in accordance with Appendix B, "Project Health & Safety Plan" and recorded.

6.0 SITE RELEASE SURVEYS AND SAMPLING

6.1 Release Surveys of Affected Areas

6.1.1 Once all of the previously identified material has been removed, the area will be walked down with Ludlum Model 19 Survey Meters (1x1 NaI detector uR meters) and a Ludlum Model 3 Survey Meter with an Ludlum Model 44-10 (2x2 NaI detector) at a rate of 3 inches per second at a distance of no greater than 2 inches from the surface being surveyed. Any surface indicating activity greater than background on contact shall be noted and physically marked.

6.1.2 The excavated area will be considered free of radiological hazards once all areas have been 100% surveyed with the instrumentation from Section 3.7 and indicate levels equal to or less than background per 100 cm^2.

6.2 Soil Sampling

6.2.1 A total of twenty (20) soil samples will be collected following excavation of the contaminated asphalt and following surveys with field instruments. Samples shall contain approximately 200 to 500 grams of soil from selected locations. The soil shall be placed in an appropriate container, weighed, and labeled. At the time of collection, a soil sample collection record, (ATGF Form 130) shall be completed by the individual collecting the sample. A Chain of Custody Form shall also be initiated.

A Soil Sample Identification Record, (ATGF-Form 131) will be maintained by the Project Manager or Site Coordinator to track the soil samples.

Soil Sample analysis will be performed at Mountain States Analytical or equivalent certified radionuclide and hazardous materials laboratory. Sample results will be reported in picocuries per gram (pCi/GM) for radiological samples. The detection limits for analysis shall ensure that samples above background of Cs-137 are identified.

6.3 Release Surveys of Bin Loading Area

6.3.1 Once all excavation has been completed the container loading area will be surveyed for release in accordance with Appendix B, "Project Health & Safety Plan".

6.4 Final Release Activities

6.4.1 Ensure that all required area(s) surveys have been completed and documented. If waste containers have not been shipped, ensure that all containers are properly labeled and ready for shipment per DOT regulations.

6.4.2 Remove all barriers, posting and other contractor equipment from the areas. Ensure that all areas are returned to pre-work conditions at a minimum. NOTE: No restoration of removed asphalt will occur.

6.4.3 Ensure all dosimetry issued to project personnel has been returned and accounted for.

6.4.4 Demobilize any required support equipment.

6.4.5 Final approval for release of the site must be obtained from the Radiological Affair Support Office, (RASO), Yorktown, VA.

6.4.6 Generate and submit a final report for all project activities.

APPENDIX B
QUALITY ASSURANCE PROJECT PLAN

ALLIED TECHNOLOGY GROUP, INC.

QUALITY ASSURANCE PROJECT PLAN

HUNTER'S POINT CESIUM REMEDIATION and RADIUM DISPOSAL

Revision 1

January 1996

Allied Technology Group, Inc.
99A Midway Lane
Oak Ridge, TN 37830

ALLIED TECHNOLOGY GROUP, INC.

HUNTER'S POINT CESIUM REMEDIATION and RADIUM DISPOSAL

QUALITY ASSURANCE PROJECT PLAN

January 1996

Concurrence: _____ 1/15/96
William G. Haney, ATG Project Director — Date

Concurrence: _____ 30 Jan 96
Dave Horton, IOC Radiation Technical Specialist — Date

Concurrence: _____ 1/15/96
Darren W. Smith ATG Project Manager — Date

Approval: _____
Date

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1.0 INTRODUCTION

1.1 Background

Allied Technology Group has been contracted by Industrial Operations Command (IOC), Radioactive Waste Disposal Office for the cleanup, removal and shipment of radiological waste materials at Hunter's Point Annex in San Francisco, CA. As a supporting part of the overall work plan for the project, this Quality Assurance Project Plan has been integrated into the Project Detailed Work Procedure to provide the necessary controls to successfully complete the contract requirements.

1.2 Project Scope and Objectives

The project consists of the removal of 160 cubic feet of Cesium-137 contaminated asphalt waste from Hunter's Point Annex, San Francisco, CA. The contaminated waste will be removed and placed into DOT approved shipping containers. The containers are to be shipped to the Defense Consolidation Facility in Barnwell, South Carolina for disposal. The Project Detailed Work Procedure has been developed to meet the applicable regulations and requirements. The Quality Assurance Project Plan has been developed to provide assurance that the regulations and requirements are complied with the Project Health and Safety Plan will also be an integral part of the Project Work Procedure.

No adverse impacts are expected in the removal, handling, packaging or shipment of this material. The material will be handled and packaged by trained personnel within the confines of environmentally protected shelters.

All working personnel will be supplied with protective clothing and monitoring equipment and will have detailed procedures to guide them through the packaging and shipping operations, management and supervisory personnel will be on site to instruct and support the working personnel. The waste containers will be transported to the burial site by appropriate transport vehicles and drivers who are adequately trained for hauling hazardous materials.

2.0 REFERENCES

2.1 U.S. Code of Federal Regulations, Title 10, "Energy", Part 19 and Part 20.

2.2 U.S. Code of Federal Regulations, Title 29, "Labor", Part 120.

2.3 U.S. Code of Federal Regulations, Title 40, "Protection of the Environment".

2.4 NRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors".

2.5 NUREG/CR 2082 "Monitoring for Compliance with Decommissioning Termination Survey Criteria".

2.6 NUREG/CR-5849 "Manual for Conducting Radiological Surveys in Support of License Termination", Draft June 1992.

2.7 NUREG/CR 5512, "Residual Contamination from Decommissioning".

2.8 NRC Decommissioning and Regulatory Issue Branch Technical Position, "A Summary of NRC & Interim Radiological Cleanup Criteria and Current Dose Bases" (November 1992).

2.9 U.S. Nuclear Regulatory Commission Division of Industrial and Medical Safety, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (August 1987)".

2.10 Allied Technology Group "Health and Safety Plan for Hunter's Point.

2.11 Allied Technology Group "Detailed Work Procedure for Hunter's Point.

3.0 QUALITY ASSURANCE PROGRAM

3.1 Quality Assurance Project Plan

The Quality Assurance Project Plan is to be implemented for the activities specified in the Project Detailed Work Procedure and the Project Health and Safety Plan for Hunter's Point. The Quality Assurance Project Plan highlights project specific aspects of the applicable quality assurance elements. The specific quality assurance tasks are defined in the plan.

3.2 Quality Assurance Training

The Project Manager or designated alternate will perform the initial quality assurance training of the project personnel at the start of the project.

If additional personnel are added to the project, they will receive quality assurance training prior to participation in the project activities. Quality assurance training will consist of a review and discussion of the Project Detailed Work Procedure and supporting documents. Special emphasis will be placed on documentation of work, quality control checks, equipment

performance, identification and control of radioactive material and safety procedures.

Each participant shall acknowledge that he/she has received training and that he/she understands the quality assurance requirements relevant to the project by signing and dating the Training Record, ATG Form 027

3.3 Technical Training and Personnel Qualifications

Allied Technology Group management will review written statements of qualification or resumes to establish personnel capabilities and qualification to perform the assigned task. If personnel qualification, including education, experience, and training do not meet project needs, appropriate training including "read and study" and "on-the-job" training will be performed or other appropriately qualified individuals will be assigned to perform the task.

Management review of personnel qualifications and acceptance that an individual is qualified to perform the work will be documented on the Review of Personnel Qualification, ATG Form 103. Personnel records shall be maintained in the quality assurance record file and shall include; a record of the initial qualifications, documentation of review by the Project Manager or designee and acceptance of current qualifications or the need for additional training and a record of the completion of training. Project management shall monitor the performance of individuals involved in activities affecting quality and shall determine if there is a need for retraining or replacement. Retraining or replacement of individuals will be initiated immediately upon identification of the need for such actions. The following guidelines shall be used to determine the proficiency and ability of the workers assigned to this project:

3.3.1 Qualification Requirements:

3.3.1.1 Physically capable of performing the work tasks.

3.3.1.2 Demonstrated capability to perform the specific function in accordance with approved procedures.

3.3.1.3 Familiarity with technical aspects of the equipment and procedures, and capability to verify that the equipment is in proper working condition.

3.3.2 Capability Demonstration:

3.3.2.1 The Project Manager or designee shall determine the type of training or experience required to determine if personnel are qualified to perform the specific tasks.

3.3.2.2 The individual workers shall review the approved Project Detailed Work Procedure.

3.3.2.3 The individual workers shall demonstrate their understanding of the Project Detailed Work Procedure.

3.3.3 Support Personnel

3.3.3.1 Minimum personnel will be used to support the cleanup.

3.3.3.2 All support personnel at Hunter's Point will be trained on the Applicable hazards on which they are working. This training shall be documented on Training Record ATG Form 027.

3.3.3.3 All support personnel involved in the cleanup activities shall be monitored for exposure and a bioassay analysis performed at the beginning and the completion of work.

3.3.3.4 All support personnel involved in the cleanup activities shall be under the direct surveillance of ATG Radiation Protection Personnel while performing work.

4.0 ORGANIZATION

The Quality Assurance Project Plan oversight will be performed by the Director, Decontamination and Decommissioning (hereafter, "Director") and the Project Manager. Personnel performing the work tasks will be responsible for individual quality items and will be audited by the Project Manager or designee.

The Director is responsible for assuring that the Quality Assurance Project Plan is implemented and is adhered to. All project records and documents will be submitted to the Director for final approval.

The Project Manager reports to the Director and will act as an on-site quality auditor. The on-site audit reports and records will be submitted to the Director. Quality items that will impact the performance of the contract will be immediately submitted.

5.0 CONTROL OF DATA

5.1 Planning

The work tasks necessary to complete this contract will be performed in a planned, systematic manner. To assure adequate project planning, a Project Detailed Work Procedure will be approved prior to the start of work. The Project Detailed Work Procedure will specify the required data collection and records to verify that the contract commitments have been met.

5.2 Data Collection

Data collection will be performed by the individual performing the tasks or their supervisor. Data collection will be performed in accordance with the Project Detailed Work Procedure, Quality Assurance Project Plan and the Project Health and Safety Plan requirements.

5.3 Documentation

Data collection shall be fully documented on the appropriate data records and daily project logs. All records shall be complete and thorough as possible hand written, legible and in ink. Personnel making a change to a record shall cross out the old entry with one line, add the new information and initial and date the change. Under no circumstances shall the old entry be scratched out, whited out, erased or otherwise removed or made illegible. When applicable, an explanation should accompany the change or correction.

5.4 Quality Control Checks

All data shall be reviewed and checked by a technically qualified person such as the Corporate Health Physicist, the RCS or the Project Manager. These checks shall be made to assure that both the technical, operational and quality assurance requirements have been met. The following guidelines will be used to perform the quality control checks:

5.4.1 Verify that the record contains;

5.4.1.1 The project name or task description

5.4.1.2 Name or initials of the performer

5.4.1.3 Date of performance

5.4.1.4 Page number if pertinent.

5.4.2 And, if pertinent, that the record has;

5.4.2.1 Conformed with the appropriate procedures

5.4.2.2 Instrument calibration data (instrument identification, calibration date, certificate of calibration, etc.) of survey instruments used is current

5.4.2.3 Completeness and adequacy of the performance and documentation

5.4.2.4 Accuracy of material documented.

If the material being checked conforms to the guidelines, the individual performing the quality control check shall sign and date the record. If the material is rejected, it shall be handled in one of two ways:

5.4.3 Discuss and correct minor deviations with responsible personnel resulting in subsequent acceptance or,

5.4.4 Initiate corrective action procedures in the form of a Nonconformance Report, Form ATGF-108.

5.5 Management Review

The Project Manager shall review all data records prior to submitting them to the Director. The same steps shall be taken with the review that are taken with the quality control checks.

6.0 PROCUREMENT DOCUMENT CONTROL

Procurement or acquisition of barrels, plastic bags, protective clothing, safety equipment and radiological survey equipment, etc. may be needed to perform the work tasks. The procurement documents and packing lists will be reviewed upon receipt by the Project Manager or designee to verify that appropriate quality assurance and technical requirements have been met. These records will be maintained with the other project records.

7.0 PROJECT DETAILED WORK PROCEDURE

The Project Detailed Work Procedure for the activities at Hunter's Point and the associated supporting documents shall be reviewed and approved by Allied Technology Group management and all appropriate Department of the Army personnel. The

Project Detailed Work Procedure will have systematically numbered steps and pages, a cover page and an approval page.

Distribution of copies to pertinent personnel will be accordance with Section 7, Document Control.

If revisions to the Project Detailed Work Procedure are necessary during the performance of the project, the Project Manager shall document the need for the revision on the Work Plan Change Request Form, ATG Form 104. A draft of the revisions shall be prepared and submitted to the Director. The proposed revision shall receive the same review and approval process as the original.

Only after final approval may the revision be issued to project personnel for implementation. The Project Manager shall be responsible for verifying that only current copies of the work plan are in use by project personnel.

8.0 DOCUMENT CONTROL

The Project Detailed Work Procedure and associated supporting documents shall be issued as a controlled document to assure that the current approved revision is in use. Controlled copies of these documents will be issued to project personnel by the Director. The Director will maintain a distribution list of the controlled copies. Personnel assigned controlled documents will be required to acknowledge receipt of the document and all subsequent revisions to the document.

A document Distribution Record, ATG Form 105, shall be maintained to assure that current documents are distributed. When issuing a current document or document revision, a Document Transmittal Record, ATG Form 106 shall be submitted to the recipient. This record will demonstrate that current documents have been issued and are in use. The transmittal record shall be acknowledged and returned to the Director.

The recipient of the controlled document shall return the document to the Director when the requirements for its use ends. Upon return of the controlled document, the Director shall enter the date of return on the Document Distribution Record.

9.0 SAMPLE CUSTODY

The samples shall be analyzed by the subcontracted laboratory immediately upon completion of the sample preparation. The samples shall be shipped to the selected laboratory by carrier to minimize the time between collection and execution of the actual analyses. The Project Manager or designee is responsible for security of the samples until they are turned over to the courier or delivered to the lab.

All samples or other physical evidence collected in the field shall be accompanied by a chain-of-custody form. All chain-of-custody forms shall be signed by the receiving parties and returned to the Project Manager or designee with the sample results. The returned copy shall match the copy retained by the Project Manager or designee, as well as any faxed instructions or modifications that apply to each particular chain-of-custody form.

The following information shall be supplied in the indicated spaces to complete the chain-of-custody form:

- Project Name and Number.
- Name of Sample Team members.
- Name of laboratory.
- The sample number, corresponding to a location or site description, date collected, sample sequence number, and designation for QC samples, if applicable.
- Condition on receipt (completed by analytical laboratory personnel).
- Any special instructions or relevant information on sample hazards.
- Signatures of all samplers in the designated blocks, indicating their company, date, and time.

The following procedures shall be followed for all samples submitted to the laboratory for chemical or physical properties analysis. Individual project crew members are responsible for the care, labeling, and custody of each sample they collect until the samples are properly transferred to the Project Manager or designee. Sample labels shall be completed for each sample using waterproof, indelible ink.

The Project Manager or designee is personally responsible for the care and custody of the samples received and for completion of the chain-of-custody form. The samples shall remain in his possession until they are properly transferred to the next authorized person or facility. A copy of the carrier shipping bill shall be retained as part of the permanent chain-of-custody documentation.

Each time responsibility for custody of a sample changes, the new custodian shall sign, date, and note the time that the change occurred. Custody transfers are recorded for each individual sample; for example, if samples are split and sent to multiple laboratories, a chain-of-custody form accompanies each sample. The number of custodial personnel in the chain-of-custody shall be kept to a minimum.

10.0 DATA VALIDATION AND REPORTING

Data validation and reporting procedures for field measurements shall be as follows:

10.1 Field Measurements

10.1.1 The Project Manager shall assign a staff or project level crew member the responsibility for validating the reported field measurements.

10.1.2 The assigned individual shall validate all field measurements taken or included in a formal report by

- checking the calibration procedures utilized at the specific site.
- comparing the data to previous measurements obtained at the specific site.
- reviewing the daily reports for adherence to established protocols.
- reviewing the data for reasonableness.

10.1.3 The assigned individual shall document the review in the project file.

10.1.4 The assigned individual shall report to the Project Manager any variations or anomalies in field data that cannot be explained by statistical methods.

10.1.5 The Project Manager shall review the data in question and determine how and if the data should be used in subsequent reports or engineering evaluations.

10.2 Laboratory Data

Laboratory data validation and reporting procedures shall be as follows:

10.2.1 The Project Manager shall assign a staff or project level crew member the responsibility for validating the reported laboratory data.

10.2.2 The assigned individual shall validate all laboratory data presented in analytical reports. The assigned individuals shall review the quality control data associated with the laboratory data for compliance with established procedures and quality assurance objectives (i.e. precision, accuracy, and completeness). The review shall be documented in the project file.

10.2.3 If data validation procedures indicate a problem exists, the reviewer shall notify the Project Manager of the questionable data and shall review the laboratory calibration records for evidence that the data anomalies are related to errors in analytical technique.

10.2.4 If a review of the field sampling procedures does not resolve the suspect laboratory data, the Project Manager or designee shall contact the laboratory QA/QC representative and challenge the data.

10.2.5 The laboratory QA/QC representative shall either verify, discount, or modify the reported data and issue a revised report as required.

10.2.6 The Project Manager or designee shall be responsible for completing the Daily Quality Control Checklist, ATG Form 107. The checklist is designed to account for Project Detailed Work Procedure activities that pertain to project tasks and radiation protection concerns. Unsatisfactory items will be immediately rectified to bring the item to a satisfactory condition. The checklist is to be completed at the end of each shift for that day's activities.

11.0 CALIBRATION PROCEDURES AND PREVENTIVE MAINTENANCE

All instruments and equipment used to collect field data shall be maintained, calibrated, and operated in accordance with the manufacturer's guidelines and recommendations and ATG radiological field procedures. This is the responsibility of the field staff assigned to the project.

11.1 In the event that the instrument is not received with manufacturer's recommendations for calibration and calibration frequencies, the following guidelines shall apply:

- All instruments shall be assigned individual identification numbers.
- All equipment shall be calibrated each day (at a minimum) before field use.
- Calibration results shall be recorded on a calibration log. A separate log book shall be maintained for each sampling instrument. The calibration log shall identify the function, calibration requirements, calibration standard, and the name(s) of field staff using each instrument.
- Instruments for which calibration is appropriate but not easily performed shall either be tested against a similar calibrated instrument or returned to the manufacturer for appropriate calibration. If tested against a similar

instrument, variation between instruments must not exceed 5% of test range units. If readings vary more than 5%, the instrument shall be returned to the manufacturer for calibration.

- A permanent record of calibration shall be maintained and kept with copies of the field logs in the project files.

- Out-of-calibration devices shall be tagged, segregated and not used until recalibrated.

- Calibration for tape measures and other devices is not required if normal commercial equipment provides adequate accuracy.

Personnel shall be appropriately trained before operating field sampling equipment, and such training shall be documented. Duly trained, qualified personnel shall perform preventive maintenance.

11.2 Preventive Maintenance

Preventive maintenance requirements for critical or sensitive measuring instruments shall be established and described to include:

- A schedule of important preventive maintenance tasks necessary to minimize downtime of the measurement systems.

- A list of any critical measurement equipment spare parts that should be kept on hand to minimize downtime.

11.3 Measuring and test equipment shall be properly handled and stored to maintain accuracy. Records shall be maintained and equipment shall be labeled, tagged or otherwise suitably marked to indicate calibration status, due date of the next calibration, and to provide traceability tot he calibration test data.

12.0 HANDLING, STORAGE AND SHIPPING

All radioactive material will be packaged, handled and stored according to the appropriate health and safety procedures. Packaging contaminated soil shall conform to the procedures detailed in the Project Detailed Work Procedure. Packages shall meet the Department of Transportation (DOT) regulations and burial site requirements. Shipping shall meet all applicable DOT, State and Low Level Radioactive Waste Compact Commission regulations.

The shipment will be manifested using the appropriate disposal site Waste Shipment Manifest and continuation pages. The Project Manager (or designated ATG Senior Broker) shall inspect and sign off the shipping manifests.

13.0 CONTROL ON NONCONFORMANCE ITEMS

Procedures have been established and documented to control equipment and activities that do not conform to work plan requirements or whose quality does not meet the intended use. Nonconforming items, including reviewed data, shall be identified, documented, segregated or disposed of as appropriate. Nonconformance includes noncompliance with the technical procedures, contract documents or errors in documented analyses or results. Nonconformance reports shall be prepared, including a description of the nonconformance and the proposed corrective action or disposition such as accept, reject, repair or rework. Nonconforming items or data shall be marked as nonconforming and shall not be used in any further activity until corrective action has been satisfactorily completed or an acceptable disposition approved by the Director.

Persons determining corrective action or disposition shall have demonstrated competence, have an adequate understanding of the requirement, and have access to pertinent background information. Proposed corrective action or disposition and completion of corrective action shall be reviewed and approved in accordance with Section 14.0, Corrective Action.

13.1 Identification and Reporting of Nonconformances

A nonconformance exists if there is a deviation from or noncompliance with the Project Detailed Work Procedure or contract specifications. Nonconformances also include major errors in documented analysis, data or results and deficiencies in documentation or any other aspect of the project that affects quality. Personnel who identify a nonconformance shall report the condition by,

13.1.1 Completing Part A of the Nonconformance Report, ATG Form 108,

13.1.2 Request a nonconformance number from the Project Radiological Controls Supervisor (RCS),

13.1.3 Distribute the nonconformance report to the Project RCS and the Project Manager.

13.1.4 Notification of all nonconformances and copies of all Nonconformance Reports will be provided to the Department of the Army.

13.2 Evaluation of Nonconformance Reports

The Project RCS and the Project Manager will review the nonconformance report to determine if any of the following conditions exist and document the findings by completing Part B of the Nonconformance Report.

13.2.1 The RCS may elect to evaluate the nonconformance item with the IOC's representative or the Department of the Army to determine if the nonconformance item could invalidate the results of ongoing work. If the nonconformance(s) incident in any way affects the health of workers and/or the environment, it shall be reported to all appropriate facility personnel. If work is stopped, it shall be so noted on the nonconformance report. All affected work shall be immediately stopped and the Director notified. Work shall not be restarted until corrective action is approved and work authorized to restart by the IOC representative.

13.2.2 If the nonconformance constitutes a significant condition adverse to quality, determine the cause of the condition. Examples of significant conditions adverse to quality include significant failures to implement the Project Detailed Work Procedure, major errors in data or analysis which had previously been approved or a condition that may significantly impact the cost or schedule of the contract.

13.2.3 If the nonconformance has any impact on previously obtained data or reports submitted to the IOC representative, the Project Manager shall note the impact in the remarks section of the nonconformance report and notify in writing all individuals and organizations that may be affected by the nonconformance and resulting data.

13.3 Tracking Nonconformance Reports

The Director shall monitor nonconformance reports to determine if trends adverse to quality are developing. If such trends are developing, such as, repetitive reports related to a particular activity, a written report will be submitted to all project personnel identifying the particular problem. The Director will evaluate the identified problem and propose and implement a written corrective action program to prevent recurrence of the nonconformance.

14.0 CORRECTIVE ACTION

Corrective action for conditions adverse to quality will be determined and implemented in a timely manner. Conditions adverse to quality are any of the following: failures, malfunctions, deficiencies, defective items and nonconformances. A significant

condition adverse to quality is one which, if uncorrected, could have a serious effect on safety, operability or validity of data. The cause of the condition will be determined and action taken to preclude the recurrence of the nonconformance item. The Director shall verify that the corrective action has been implemented and, if necessary, that the Project Detailed Work Procedure has been revised.

14.1 Recommendation of Corrective Action

The project personnel that recommend the corrective action will document the recommendation on Part C of the Nonconformance Report. In the case of a nonconformance which is a significant condition adverse to quality, the corrective action shall be such as to preclude recurrence of the non-conformance. The recommended corrective action will be reviewed and approved by the Director.

14.2 Corrective Action Implementation and Verification

The approved corrective action shall be implemented by the appropriate project personnel. When implementation is verified by the Director and the Project Manager, Part D of the Nonconformance Report will be completed. The completed nonconformance report will be maintained on site with the nonconformance record log in the project file.

15.0 QUALITY ASSURANCE RECORDS

A quality assurance records system for the project will be implemented and maintained. Records shall be in ink, legible, identifiable and retrievable. The quality assurance records will be sufficiently detailed to properly reflect all work activities in the performance of this contract.

These records may be in the form of data sheets, notes, graphs, comments, computations and other graphic or written data generated in connection with the work activities. Records will be considered valid only if the individual completing the record has initialed or signed and dated the record. If revisions or changes to the quality assurance records are required, the changes will be made to the original records by crossing out the old entry with one line, adding the new information and initialing and dating the change.

The Project Manager will be responsible for maintaining and protecting the records. The records will be maintained on site with the project files. File access will be limited to project personnel and authorized contract personnel. At the completion of the project, the Project Manager will submit all project records to the Director. A copy of all project documents will be provided with the Final Report to the IOC Representative and Mr. Robert Matthys.

16.0 QUALITY ASSURANCE AUDITS

No formal quality assurance audits are planned for this activity. A quality assurance audit may be performed if the Director deems necessary. Quality Assurance records will be evaluated and audited by the Director at the end of the project.

17.0 FORMS

17.1	ATGF-027	Training Attendance Record
17.2	ATGF-103	Review of Personnel Qualifications
17.3	ATGF-104	Project Work Plan Change Request
17.4	ATGF-105	Document Distribution Record
17.5	ATGF-106	Document Transmittal Record
17.6	ATGF-107	Daily Quality Control Checklist
16.7	ATGF-108	NonConformance Report

FORMS

TRAINING RECORD

TRAINING DATE:	INSTRUCTOR:
LOCATION:	TOTAL CLASS HOURS:

TRAINING COURSE TITLE:

SCOPE OF TRAINING:

NAME OF STUDENT	SOCIAL SECURITY NO.	SIGNATURE

TRAINING APPROVED BY (Project Director):

REVIEW OF PERSONNEL QUALIFICATIONS

NAME:	POSITION:
EDUCATION, TRAINING AND EXPERIENCE:	
QUALIFICATIONS ACCEPTED (Yes / No)	ADDITIONAL TRAINING REQUIRED:
NOT FIT FOR DUTY:	
REVIEWED BY (PROJECT DIRECTOR):	DATE:
ADDITIONAL TRAINING ASSIGNMENT:	
QUALIFICATIONS ACCEPTED (Yes / No)	
REVIEWED BY (PROJECT DIRECTOR):	DATE:

PROJECT WORK PLAN CHANGE REQUEST

CHANGE REQUESTED BY:	DATE:

REASON FOR CHANGE:

CHANGE REQUESTED:

SIGNATURE:	DATE:

WORK CHANGE REQUEST REVIEWED BY (Health and Safety Officer):

REMARKS:

DISPOSITION OF WORK PLAN CHANGE REQUEST:

FINAL WORK CHANGE REQUEST REVIEW:

PROJECT DIRECTOR:

DOCUMENT DISTRIBUTION RECORD

NAME OF DOCUMENT:

DOCUMENT REVISION:	**DOCUMENT DATE:**

NAME AND TITLE OF RECIPIENT	**DATE SENT**

APPROVED BY (Project Director):

DOCUMENT TRANSMITTAL RECORD

NAME AND TITLE OF RECIPIENT:			
DOCUMENT NAME:			
REVISION NUMBER:		**DOCUMENT DATE:**	
INSTRUCTIONS OR REMARKS:			
DOCUMENT SENT BY THE PROJECT DIRECTOR TO:			
NAME:		**TELEPHONE:**	
STREET ADDRESS	**CITY**	**STATE**	**ZIP**
PLEASE COMPLETE THE FOLLOWING, SIGN AND RETURN TO SENDER:			
☐ I acknowledge that I received the document or document revision and that I have updated my records.			
☐ I am returning the document with this transmittal record.			
SIGNATURE:		**DATE:**	
DOCUMENT TRANSMITTAL RECORD COMPLETE AND APPROVED			
SIGNATURE (Project Director):		**DATE:**	

DAILY QUALITY CONTROL CHECKLIST

DATE: _____

		S	NS
1.	PERSONNEL MONITORING		
	DOSIMETRY		
	RWP REQUIREMENTS MET		
	RWP ACCESS LOG COMPLETE		
2.	INDUSTRIAL SAFETY		
	HARD HATS AND EQUIPMENT SAFETY GLASSES WORN		
	SAFETY EQUIPMENT USED		
	WORK AREAS SECURED		
	SAFETY RULE VIOLATIONS INVESTIGATED		
3.	WORK PLAN REQUIREMENTS		
	WORK PLAN PROCEDURES FOLLOWED		
	SCHEDULE COMMITMENTS MET		
	WORK AREAS CLEANED AND SET UP FOR NEXT DAY		
4.	RADIATION SURVEYS		
	ROUTINE SURVEYS COMPLETE		
	AREA POSTINGS UPDATED		
	BARRELS LABELED		
	SURVEY RESULTS ACCEPTABLE		
5.	STOP WORK CONDITIONS		
	STOP WORK ORDERS INVESTIGATED		
	CORRECTIVE ACTION IMPLEMENTED		

S = SATISFACTORY **NS = NOT SATISFACTORY**

SIGNATURE (Health and Safety Officer):	**DATE:**

NONCONFORMANCE REPORT

NONCONFORMANCE REPORT NO: _____

PART A	
Description of Nonconformance:	
PART B	
Evaluation of Nonconformance:	
Work Stoppage Required (Yes / No)?	Impacts Previous Data (Yes / No)?
SIGNATURE:	**DATE:**
PART C	
Recommended Corrective Action:	
SIGNATURE:	**DATE:**
PART D	
Corrective Action Implemented:	
Corrective Action to Nonconformance Approved:	

ATG Health & Safety Officer	Date	ATG Project Director	Date

APPENDIX C
HEALTH AND SAFETY PLAN

ALLIED TECHNOLOGY GROUP, INC.

PROJECT HEALTH & SAFETY PLAN

HUNTER'S POINT CESIUM REMEDIATION and RADIUM DISPOSAL PROJECT

Revision 1

January 1996

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8.0 FORMS

1.0 INTRODUCTION

Allied Technology Group, Inc. Project Health and Safety Plan incorporates the health and safety procedures and practices to be followed during the activities specified in the Radiological Control Procedures. This Project Health and Safety Plan will be used to support the work activities and is in accordance with the guidelines specified in the ATG Corporate Health and Safety Plan. This Project Health and Safety Plan includes radiological and industrial safety concerns for the activities to be performed at the Hunter's Point Cesium Remediation and Radium Disposal Project (Hunter's Point Annex, San Francisco, CA.).

2.0 SCOPE OF WORK

Packaging of all contaminated material will be performed following the guidelines specified in the Detailed Work Plan by Allied Technology Group personnel. For the purpose of this contract, all contaminated material will be handled with radiological and hazardous material controls in place. This project involves mobilization, performing surveys for the presence of radioactive/hazardous materials, excavation of the radioactive/hazardous material, sampling, and establishing and setting up controlled areas.

No adverse impacts are expected during the performance of this contract. There will be no expected air emissions, liquid releases, unnecessary personnel exposures or environmental impacts during the packaging and shipping of any contaminated material. The work tasks will be performed by trained and qualified personnel. Oversight and monitoring will be performed by trained and qualified personnel in accordance with the Health and Safety Plan procedures.

3.0 REFERENCES

3.1 U.S. Code of Federal Regulations, Title 10, "Energy", Part 19 and Part 20.

3.2 U.S. Code of Federal Regulations, Title 29, "Labor", Part 120.

3.3 U.S. Code of Federal Regulations, Title 40, "Protection of the Environment".

3.4 NRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors".

3.5 NUREG/CR 2082 "Monitoring for Compliance with Decommissioning Termination Survey Criteria".

3.6 NUREG/CR-5849 "Manual for Conducting Radiological Surveys in Support of License Termination", Draft June 1992.

3.7 NUREG/CR 5512, "Residual Contamination from Decommissioning".

3.8 NRC Decommissioning and Regulatory Issue Branch Technical Position, "A Summary of NRC & Interim Radiological Cleanup Criteria and Current Dose Bases" (November 1992).

3.9 U.S. Nuclear Regulatory Commission Division of Industrial and Medical Safety, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (August 1987)".

3.10 Allied Technology Group "Quality Assurance Plan for Hunter's Point Cesium Remediation and Radium Disposal"

3.11 Allied Technology Group "Detailed Work Procedure for Hunter's Point Cesium Remediation and Radium Disposal"

4.0 HAZARD ASSESSMENT

4.1 Radiological Hazards

It is expected that an individual performing work on this project will receive an external occupational exposure of less than 10 millirem (mRem). The internal hazards from Cesium-137 and Radium 226 are renal (kidney) chemical toxicity for soluble compounds and the radiation dose to the lung, bowel and large intestines for insoluble cesium/radium compounds. Therefore, personnel working with material containing cesium/radium and associated dusts shall be required to be trained in radiological control practices. This training will help to ensure that the cesium/radium does not become an internal hazard to the workers or to members of the public. Breathing airborne contaminated dusts will be the most likely path of cesium/radium to enter the body and become an internal hazard. The airborne concentration of Cs-137 and Ra-226 shall be maintained below the acceptable airborne contamination concentration limit of 10% of DAC in order to ensure that the cesium/radium shall not be an internal radiological hazard. If airborne contamination levels in excess of 10% of the Derived Air Concentration (DAC) for Cs-137 or Ra-226 are detected, Total Effective Dose Equivalent (TEDE) determinations will be made for all involved personnel.

Additional exposure to radiation will come from the reference sources used in performance tests of the radiation detection equipment and from the samples taken to assess the potential hazards. The reference sources will be used by the Radiation Protection Technician and will be maintained in a labeled and locked container. Samples taken to monitor the potential hazards will be sealed and handled appropriately and in as short amount of time as possible. Normally, the Radiation Protection Technician will handle and analyze the samples.

5.0 WORKER PROTECTION

5.1 Personnel Protection

Controlled areas will be established to provide the specific radiological controls necessary for the decontamination, packaging, and safe handling of all contaminated materials. Personnel protection equipment will vary depending on the area and type of work being performed. Work being performed outside of radiological controlled areas will require at a minimum:

5.1.1 Work Coveralls or equivalent,
5.1.2 Hard Hat,
5.1.3 Steel-toed Shoes,
5.1.4 Work gloves,

Because of the extreme heat, the requirement for work coveralls and hard hats may be relaxed at the discretion of the Project Manager.

5.1.5 Personnel Dose

No whole body doses from Cs-137 is anticipated on this project. However, as a conservative measure, ATG shall require dosimetry for project personnel.

5.1.6 Radiation Work Permit

The Radiation Work Permit (RWP) for work at the Hunter's Point Annex will state the personnel protective clothing that is to be required to be worn while performing specific project activities in specifically controlled areas. Protective clothing to be worn in other areas will be determined by the hazard encountered.

5.1.7 Respiratory Protection

It is not anticipated that respiratory protection against airborne radioactive material will be required during work operations for this project. Every effort shall be made to preclude airborne material. However, if it is deemed necessary by the Project Manager or Radiation Protection Supervisor, the following will apply:

- All personnel assigned respiratory protection must be medically qualified and trained on use of the equipment.

- All personnel respirators shall be cleaned and checked daily.

- All personnel shall have passed a qualitative/quantitative fit test for the type/size respirator to be worn within the last six months.

5.2 Personnel Monitoring

Occupational exposure will be continually monitored on all personnel on this ATG project. Personnel monitoring devices (TLDs) for this project will be supplied by Allied Technology Group using the following procedure.

5.2.1 Occupational Exposure Guides

Allied Technology Group Administrative Control Levels per calendar year:

5.2.1.1	Whole Body	1.0 Rem
5.2.1.2	Extremities	5.0 Rem
5.2.1.3	Skin	5.0 Rem

The ATG Corporate Health Physicist shall approve any authorization for exposure above the annual control levels. This approval shall be given only if the dose is necessary and shown to maintain collective dose on the project ALARA.

5.2.2 Site Registration Form

All personnel assigned to work on the project must complete a Site Registration Form, ATG Form 109, prior to starting work. Completed Site Registration Forms will be retained with the personnel exposure files.

5.2.3 Occupational Radiation Exposure History

Before an individual will be permitted to work in a controlled area, a U.S. Nuclear Regulatory Commission Form 4 must be completed and reviewed by the Project Manager or Radiation Protection Supervisor. Exposure results shall be listed on the NRC Form 4.

5.2.4 Radiation Work Permits

All personnel working in a controlled area must be assigned to a specific Radiation Work Permit (ATGF-002), applicable to the job being performed. A Radiation Work Permit Sign In Sheet (ATGF-023) will be attached to each Radiation Work Permit if deemed necessary by the Project Manager or Designee.

All personnel assigned to a job requiring a Radiation Work Permit shall sign the RWP Sign In Sheet prior to starting work, indicating time in. Upon completion of the work or at the end of the shift, personnel shall sign out on the Sign In Sheet, indicating time out.

5.2.5 Occupational Radiation Exposure History Letter

An Occupational Radiation Exposure History Letter, (ATGF Form 047) will be completed for all personnel assigned to the job. Copies of this letter are sent to the individual and the Allied Technology Group Corporate Office in Fremont, CA within 30 days of obtaining the monitoring results.

5.3 Bloodborne Pathogens

Bloodborne pathogens are microorganisms in human blood that can cause disease. Although health care workers have long worked with the threat of exposure to bloodborne pathogens, exposure was viewed in a different light once AIDS was recognized.

Because the virus that causes AIDS is said to always be fatal, there has been increased concern about bloodborne pathogens in the last 15 years. AIDS, however, is not the only source of concern; other diseases caused by microorganisms include malaria, syphilis and hepatitis-B virus (HBV).

The purpose of this notice is to establish requirements with the intent to protect those employees who have a significant potential of exposure to Bloodborne Pathogens which may cause such disease's as Human Immunodeficiency Virus and Hepatitis-B Virus.

Key Definitions:

Bloodborne Pathogens: Microorganisms present in human blood that can cause disease in humans include, but are not limited to, Hepatitis-B virus (HBV) and Human Immunodeficiency virus (HIV).

Exposure Incidents: A specific eye, mouth, other mucous membrane, non-intact skin or penetrable contact with blood or other potentially infectious materials that results from performing required tasks.

Occupational Exposure: A reasonably anticipated skin, eye, mucous membrane or other penetrable contact with blood or other potentially infectious material that might result from performing required tasks.

Penetrable Contact: A Piercing of mucous membranes or the skin barrier by means of a needle stick, human bite, cut and/or abrasion.

Potentially Infectious Materials: Materials that might be present in a first-aid emergency, including blood, vomit, urine or other body fluids.

5.3.1 ATG Field Project Potential

ATG has conducted a thorough evaluation of the processes and tasks which are performed in relation to Contractual Field Projects and has determined the potential for employee exposure to be minimal. However, because of the potential for accidents and injuries resulting in the possible contact of body fluids, ATG shall require additional training. The contaminated materials at the Bryant Machine and Tool Co. site include scrap metal materials presenting the possibility of injury. Although the likelihood of accidental exposure is minimal, the following information shall be discussed with assigned site personnel prior to work activity.

5.3.2 The following is the ATG policy for field operations.

Training: All ATG personnel who receive Basic First-Aid training and are designated as Emergency Medical Response personnel shall receive additional training in Occupational Bloodborne Pathogen awareness.

Vaccinations: All ATG personnel trained in Basic First-Aid shall be offered the Hepatitis-B series of inoculations at no cost to the individual. This shall be offered on a voluntary basis and because the risk is minimal and First-Aid treatment of others is voluntary, no statement of refusal of the vaccine shall be required. All ATG personnel who are designated and certified as Emergency Medical Technicians shall be required to receive the Hepatitis-B inoculations. This shall be at no cost to the individual.

Handling of Sharps: All ATG personnel who handle materials containing sharps shall be required to wear puncture resistant gloves. Any injuries received while working with such materials shall be reported to their immediate supervisor. In addition, personnel exposed to blood or other body fluids while aiding an injured individual, no matter how minor, shall report to their immediate supervisor. The supervisor shall then promptly log and report the incident to the Project Safety Manager.

Protective Equipment: Protective Equipment such as gloves, masks and respiratory barriers are provided in each first-aid kit. All personnel responding to a first-aid situation in which there is a potential for exposure to blood or other body fluids are expected to use these devices for protection of both themselves and the personnel they are aiding.

5.4 Training

Individuals assigned to this project will be trained and qualified radiation workers. All workers will have current training in accordance with 29 CFR Part 1910.120, 40 Hour Hazardous Waste Operations. ATG Site Supervisors shall have training in accordance with 29 CFR Part 1910.120. Training records will be supplied as part of the Project Quality Assurance Plan. Training specific to the project will be performed prior to the start of work by the Project Radiation Protection Supervisor and recorded on the Training Record, (ATGF Form 027). Requirements of the Project Detailed Work Procedure, Project Quality Assurance Plan and the Project Health and Safety Plan will be covered in the on-site training.

5.5 Decontamination

Contamination control barriers will be established and personal protective equipment will be required to minimize the potential for areas or personnel to become contaminated. In the event that personnel contamination is detected, the following procedure will be used to remove or contain the contamination.

5.5.1 Explanation

This procedure is a follow-up to the Radiation Survey Procedure which describes how a radiation worker detects personal contamination. Once detected, this procedure will explain where and how to decontaminate to acceptable levels. It further provides for ongoing documentation to assure adequate review and improvement of existing procedures.

5.5.2 Decontamination Methods

5.5.2.1 Personnel Decontamination

When contamination is found on the worker, the worker shall notify a Radiation Protection Technician immediately and inform him that he/she has become contaminated. The worker will indicate where he/she believes the contamination occurred, and the route taken to where the surface contamination was detected. This information will assist the Radiation Protection Technician in determining which areas to survey to avoid the contamination of other personnel. After notifying the Radiation Protection Technician, the individual who is contaminated shall, if possible, isolate the contaminated item or items by the use of clean plastic bags and remain in the personnel survey area. Any method of decontamination used will require monitoring and

documentation of the results for each step in the procedure. All liquids used for decontamination purposes, will be considered contaminated and handled as radioactive waste. A spray solution of RadiacWash or equivalent mild detergent solution should be used as the primary agent to remove skin contamination. RadiacWash foam will be sprayed on the contaminated area, allowed to soak for a few minutes, then wiped clean. Radiation surveys will be performed between each wash.

NOTE: UNDER NO CIRCUMSTANCES WILL THE SKIN BE ABRADED WITHOUT DIRECT MEDICAL SURVEILLANCE. NOTIFY THE ATG RADIATION SAFETY OFFICER AND THE CORPORATE HEALTH PHYSICIST SHOULD THIS BE RECOMMENDED.

Additional washing may be required if the affected area contamination levels are not reduced to below acceptable limits. If needed, lava soap, a soft brush and small amounts of water can be used with light pressure to produce a heavy lather. Only wash 3 times for about 2 minutes each. Rinse and monitor. Use care not to scratch or erode the skin. Apply lanolin or hand cream to prevent chapping. Continued washing will abrade the skin. Any additional decontamination techniques shall be approved by the Radiation Safety Officer on a case by case basis.

5.5.2.2 Clothing Decontamination

When contamination is found on clothing, the worker shall immediately notify a Radiation Protection Technician and inform him of the situation, including where the worker believes the contamination occurred and the route taken to where the contamination was detected. This information will assist the Radiation Protection Technician in determining which areas to survey to avoid the contamination of other personnel. The contaminated clothing shall be removed, taking special care not to further contaminate additional clothing or personnel. The item(s) shall be surveyed to determine the degree of contamination. Depending on the source of contamination, decontamination methods such as using

tape to adhere the contamination to or scraping a shoe with a knife may be used. If the contaminated item cannot be easily decontaminated without using soap and water methods, the item shall be disposed of as radioactive waste.

5.5.3 Documentation

In order to fully assess the degree of contamination, the skin dose to personnel and to critique the incidents to improve future procedures, documentation is necessary. Documentation of the event should start and continue from the initial detection of contamination to the final release. Personnel contamination will be classified in two categories, skin and clothing. A separate form shall be used for each, along with a Contamination Report Index, (ATG Form 116) to chronologically categorize all personnel contamination.

A Personnel Contamination Report, (ATG Form 117), and a Clothing Contamination Report, (ATG Form 118) shall be completed by the individual performing the decontamination and submitted to the Project Manager or Site Coordinator for evaluation and filing. The Contamination Report Index shall be maintained by the Project RPS. The contamination reports shall be maintained in the individual's exposure file.

5.6 Bioassay

Allied Technology Group personnel are monitored for internal contamination on a routine basis. Whole Body Counts may be performed annually for gamma emitters. Urinalysis samples will be taken at the start and completion of the project (or the employment time) for all individuals deemed necessary by the Project Manager or his/her Designee. The samples will be analyzed for radionuclides associated with the project.

5.7 Radiological Surveys

5.7.1 Purpose

The purpose of this procedure is to set guidelines for the Allied Technology Group personnel to maintain control of the radioactive materials.

Designated work areas will be established to maintain an efficient material flow path. During the work operations, routine and periodic assessments are needed to assure that control of the radioactive materials is maintained. The routine assessments are in the form of

radiation surveys and periodic assessments are an accumulation of surveys and other data from other procedures. The designated areas requiring radiation surveys will be on a routine or special survey basis, depending on the work operation being performed. All surveys will be reviewed for information and accuracy by the Radiation Protection Supervisor daily.

Surveys are required in accordance with Radiation Work Permit requirements. RWP surveys are only required if work operations are to be performed in the area described on the RWP. Special surveys shall be required when the Project RPS or operation procedures deem necessary.

Types of surveys needed to make the regular assessments may include; dose rate surveys, contamination surveys or airborne contamination surveys. Individuals performing routine and special surveys will be designated by the Project RPS and will be trained in radiation survey techniques.

5.7.2 Performance Test

Radiological survey instruments are required to be calibrated at six month intervals or more frequently if indicated by the customer or required due to abnormal instrument operation. This primary calibration is performed by Ludlum Measurements, or other certified calibration laboratories. Primary calibration certificates and reference source certificates will be supplied with all radiological survey equipment. When the count rate and dose rate meters are returned from calibration, a reference check shall be performed prior to placing the instrument in use with one or more of the designated reference sources.

The reference tests will be performed using sources that are intact and appropriate to evaluate instrument response. A performance check shall be performed on meters that are in use prior to each day and intermittently during continuous use.

5.7.3 Dose Rate Surveys

Routine dose rate surveys will give the radiation worker and supervisory personnel an indication of the amount of external occupational radiation exposure the worker will receive while performing routine work operations. Special dose rate surveys are needed to determine the disposition of radioactive material or if engineering controls are needed to reduce the exposure to the worker. Routine and special dose rate surveys shall be performed using the Ludlum Model 19 Micro R meter, a Ludlum Model 9 ionization chamber, a Ludlum Model 5 GM detector

or other instrumentation as deemed appropriate. Prior to using a meter, the individual performing the survey shall verify that the meter ISBN calibration and the batteries are in good working condition and that the meter performance test has been completed. While performing dose rate surveys, consideration must be given to the types of radiation that are present in the work area so that hazards to personnel in the work area can be identified. Occupational external radiation doses to personnel are attributable to gamma rays and beta particles. Usually the gamma ray contribution is greatest Dose rates from beta particles are usually more limiting as an extremity hazard for close work with contaminated equipment or radioactive material.

Documentation of the survey results shall be recorded as mR/hr (millirem/hr). General work area dose rates will be recorded on the Radiological Survey Form, (ATGF Form 001).

5.7.4 Contamination Surveys

Radioactive contamination surveys are an important part of the radiation protection program. Based on results of radioactive contamination surveys that are performed in the various work areas, assessments can determine the controls for radioactive material and to establish radiation protection requirements for personnel working in an area or on equipment. There are two basic types of radioactive contamination; fixed and smearable (removable). Radioactive contaminants are only external exposure hazards as long as the contamination remains fixed. Smearable radioactive contaminants represent both external and internal exposure hazards. Routine contamination surveys are primarily conducted to determine smearable levels while special contamination surveys are for smearable and fixed.

Usually contamination surveys are performed in conjunction with dose rate surveys. Documentation of contamination survey results will be recorded on the Radiological Survey Form by the individual performing the survey. All smear results will be recorded in disintegrations per minute per 100 square centimeters (dpm/100 cm^2) unless otherwise indicated on the Radiological Survey Form. A drawing of the survey area or item shall be completed by the surveyor. The individual survey point shall be numbered and the number circled, indicating a smear location on the drawing. Principally, radioactive contamination consists of beta-gamma emitters.

Alpha survey results will be recorded with an "A", α, or "Alpha" while beta-gamma survey results will be assumed. Smear surveys are performed by wiping a surface (floor, wall, tool, tank, etc.) with a

disposable smear pad and, using moderate but even pressure, and wiping an area of 100 cm^2 (approximately 4" x 4").

Evaluating smears for radioactivity will be done using portable field instruments or a Ludlum Model-2929 Dual Channel Scaler or equivalent.

All items leaving a contaminated area shall be surveyed and will be free of contamination upon release.

Any time a vehicle exits a contamination controlled area, a smear and or direct scan survey shall be performed on the tires and forks if applicable.

All items with smearable contamination levels below 20 dpm/100 $cm^2\alpha$, 1000 dpm/100 $cm^2\beta\gamma$ will be considered non-contaminated. All items with smearable contamination greater than 20 dpm/100 $cm^2\alpha$, 1000 dpm/100 $cm^2\beta\gamma$ shall be considered contaminated and must be handled appropriately.

All items surveyed for unconditional release from the restricted area shall be less than the following units:

Smearable alpha <20 dpm/100 cm^2
Smearable beta-gamma <1,000 dpm/100 cm^2
Equal to or less than background levels on a direct scan survey for alpha and beta-gamma contamination.

Documentation of acceptable survey results shall be performed on the Unconditional Release Record (ATGF-010).

If contamination survey results indicate a release of material or breach of containment barriers, a special environmental survey shall be performed to evaluate the levels and extent of the spread of contamination. Results of the special environmental survey shall be immediately reported to the ATG Health Physicist and the Radiation Protection Supervisor.

5.7.5 Airborne Contamination Surveys

Airborne contamination surveys are a convenient method of determining the amount of radioactive material suspended in air at the time of the sample. Air sampling must be performed in conjunction with specific aspects of work operations to achieve representative results. Because of this, quantities and frequencies of air samples cannot always be

predetermined. There will be no classification as to routine and special air sample surveys.

All air samples will be issued an identification number. The Radiation Protection Technician will maintain the Air Sample Identification Record, (ATGF Form 048), to account for all air samples taken. All air samples will be documented on the Air Sample Data & Analysis Form, (ATGF 030), for the specific day and time of day the air sample was taken. The RWP will determine the minimum quantities needed to make a thorough evaluation.

Airborne contamination surveys consist of two components, sampling and analysis. Each component is unique and need certain guidelines to ensure uniformity of results. Any deviation from the guidelines shall be noted to aid in the overall evaluation.

5.7.5.1 Sampling

Air samplers are instruments that pull a known quantity of air through a filter media at a known rate. The airborne contaminants are trapped on the filter media for future evaluation. The air filter media will be F&J Specialty, Inc. #FP 4.0 or equivalent filters capable of collecting particles with a diameter of 0.3 micrometers at an efficiency of 99%.

Air samplers are calibrated on an annual basis. Air samplers are calibrated to ensure the quantity of air pulled through filter media is known. Air samplers are not be used if the calibration has expired. Prior to use, an inspection of the air sampler shall be performed to ensure the rotometer is functioning, clean filter media is used and the calibration is current.

For sample collection, the air sampler head, which holds the filter media, should be placed to represent the breathing zone of the workers in the respective work area.

Starting time, starting flow rate, time off, and ending flow rate are to be recorded and maintained with the filter media for analysis. A minimum of 100 cubic feet of air must be pulled through the filter media to obtain an adequate representative air sample. The air samplers will operate continuously throughout the work day.

All samples shall be removed form the sampler head very carefully to prevent loss of sample material. The samples will be separately packaged to prevent damage and ensure proper evaluation of sample activity at the analysis station.

5.7.5.2 Analysis

Counting instrumentation shall consist of a Ludlum Model 2929 Channel Scaler or equivalent, attached to a Model 43-10-1 probe or equivalent. The probe shall be placed in a shielded area and be positioned over a slide tray for planchettes.

For routine air samples counting, the shielded area background shall not exceed 100 counts per minute. Counting background and counting efficiency data shall be recorded on the Air Sample Data & Analysis Form (ATGF Form 030). Supporting data required to obtain air sample results shall also be recorded on ATGF Form 030.

Information required includes; date, counter background, counter efficiency, sample identification and location, time the sample was started and stopped, average flow rate, count start time, total count time, and total counts of the counter. Calculated results will be recorded in microcurie per cubic centimeter (uCi/cc), unless otherwise indicated.

Sample shall be carefully removed from the packaging to prevent loss of sampled material. Counting a sample consists of placing the filter paper in a planchet and positioning the planchet directly under the counter probe. Counting time will be ten (10) minutes unless rapid evaluations are needed for unusual situations. A rapid evaluation could be assessed by using a count rate meter, but must be approved by the project manager or Radiation Protection Supervisor. All air sampler filter papers will be submitted to the Radiation Protection Supervisor when initial sample results have been obtained.

The following formula shall be used to calculate the results of the air samples:

$$\frac{\{Tc/Tc_{1}\} - Bkg = Ccpm}{Ns_t \times Fl_r \times Eff \times Fe \times 2.22E6 \times 2.83E4}$$

Where:

Tc =	Total Counts
Tc_t =	Total Count Time
Bkg =	Background Counts per minute
Ccpm =	Corrected counts per minute
NS_1 =	Net Sample Collection Time
Fl_r =	Sample Flow Rate
Eff =	Instrument Detection Efficiency
Fe =	Filter Collection Efficiency
2.83E4 =	Conversion Factor for cubic feet to millimeters

5.7.5.3 Action Levels

Action Levels of air sample results cannot always be readily attainable. All situations must be considered along with follow-up sampling and counting to aid in the final assessment. A background air sample station shall be established to aid in determining the work area airborne contamination levels. The background air sample results shall be subtracted from the work area air sample results to determine the corrected work area airborne contamination levels when practical.

If the work area (without respirators) airborne contamination exceeds 1.0×10^{-9} uCi/cc above background, a stop work condition shall exist and all workers shall leave the work area immediately. Follow-up sampling shall be performed and evaluated prior to allowing work to continue. All air samples with results greater than 3.0×10^{-10} uCi/cc shall have a half life determination performed. The half life determination formula used is:

$$T_{1/2} = \frac{-0.693 \times t}{\ln (Ccpm_2/Ccpm_1)}$$

where:

$T_{½}$ =	Sample half-life (min)
t =	Decay time between $Ccpm_1$ and $Ccpm_2$ (min)
$Ccpm_1$ =	Corrected count rate at the start
$Ccpm_2$ =	Corrected count rate at the end.
ln =	natural logarithm

If the half-life of the radionuclides on the filter paper is less than 75 minutes then short lived radionuclides of the Radon-222 family are assumed to be present.

Control measures should minimize the concentration that personnel are exposed to, to minimize internal dose. If the half-life of the radionuclides on the filter paper is greater than 75 minutes a more thorough assessment is required and the results brought to the attention of the Project RPS.

5.7.6 Soil Samples

Soil samples shall be collected following excavation of the contaminated asphalt to determine the total activity and the extent, if any, of migration of Cs-137 in the excavated area. Samples shall contain approximately 200 to 500 grams of soil from selected locations. The soil shall be placed in an appropriate container, weighed, and labeled. At the time of collection, a soil sample collection record, (ATGF Form 130) shall be completed by the individual collecting the sample. A Chain of Custody Form shall also be initiated.

A Soil Sample Identification Record, (ATGF-Form 131) will be maintained by the Project Manager or Site Coordinator to track the soil samples.

Soil Sample analysis will be performed at Mountain States Analytical or equivalent certified radionuclide and hazardous materials laboratory. Sample results will be reported in picocuries per gram (pCi/GM) for radiological samples. The detection limits for analysis shall ensure that samples containing greater than 1 pCi/gram of Cs-137 are identified.

6.0 STOP WORK CONDITIONS

During the performance of this contract, certain conditions may be encountered that will require specific work tasks to be immediately halted. Conditions such as;

discovery of hazardous materials, excessive contamination levels in a non-controlled environment, high wind speeds, extreme high or low temperatures, severe storms or flash floods/high tides. Depending on the specific work task that is being performed at the time on such an adverse condition, work may be halted until a safe condition exists to restart the task.

If time permits, the Project Manager will communicate with IOC representative or on-site regulatory personnel to determine appropriate actions to be taken at a given time. The following guidelines will be used to aid in determining stop work conditions.

6.1 Excessive Contamination Levels in non-controlled areas means that contamination levels in excess of 20 dpm/100cm$^2\alpha$, 1000 dpm/100 cm$^2\beta\gamma$ have been detected in non-contamination controlled areas. All work tasks will immediately be halted and a concerted effort will be made to clean the affected area. The Radiation Protection Supervisor or Project Manager will be immediately notified of such conditions and work will not restart without his approval.

6.2 High Wind Speed means a steady wind speed in excess of 25 mph or wind gusts of 40 mph that seem to be ongoing through the day. Unsealed sources of radioactive material may be spread to non-controlled areas if wind speeds are excessive. The contaminated asphalt packaging activity will be performed outside but could still be affected by steady winds or wind gusts. If excessive winds are encountered, the contaminated asphalt packaging activity will cease and any open containers will be sealed and the remaining contaminated asphalt covered with plastic. Other work activities may be halted at the discretion of the Project Manager.

6.3 Extreme High Temperatures means in excess of 100 degrees. Heat stress to the workers may occur. When high temperatures are occurring, specific work tasks that are hampered will be halted. Work tasks that require physical work or work tasks that protective clothing is required may be affected. The RPS and/or Project Manger will evaluate the conditions and determine if work tasks will be halted. Discretion should be utilized when considering work in high temperature conditions.

6.4 Severe Storms or Flash Floods could cause all work tasks to be halted. Water damage to the controlled areas and barriers will cause all work tasks to be halted until the areas can be repaired. Should these type of conditions occur, the equipment and areas will be secured and evacuated. Prior to the restart of work, the Project Manager will receive approval from the contract administrator or the ATG Project Director.

6.5 Natural Disasters will be handled on a case-by-case basis. Depending on the type and magnitude of the disaster, work operations will be determined by the Project Manager.

7.0 EMERGENCY PROCEDURES

ATG, Inc. develops each Health & Safety Plan to allow hazardous waste operations to proceed without adverse affects on the safety and health of the worker, the environment, and the community. In addition, supplementary emergency response procedures have been developed to cover extraordinary conditions that might occur at various sites.

7.1 General

Because this project is a construction activity, configuration and location of excavations, equipment, and processing will vary daily. Therefore, excavation routes, places of refuge in case of an emergency, and description of safe distances will be discussed in the daily safety meeting.

The Project Manager or his/her Designee will establish evacuation routes and assembly areas for the site. All personnel entering the site shall be informed of these routes and assembly areas. If the evacuation routes are not clear, a site plan will be prepared presenting the evacuation routes and will be posted at conspicuous locations.

The Project Manager or his/her designee will evaluate the site for the potential for fire, explosion, chemical release, or other catastrophic events. As part of training, site workers are instructed to report unusual events, chemicals, activities, and conditions to the Project Manager or his/her designee.

7.2 Emergency Response

The objective of emergency response actions is to minimize adverse health risks to site workers, the environment, and the local community. The Project Manager or his/her designee will be the site emergency coordinator.

7.2.1 Responsibilities

The site emergency coordinator (typically the Project Manager) will have the responsibility for directing the response activity in the event of an emergency, as described below:

- Assess the emergency situation and notify site personnel
- Determine the required response measures and inform the any customer technical representative
- Immediately complete the supervisor injury report form upon occurrence of an accident or incident.

- Contact and coordinate with appropriate governmental or regulatory agency.
- Notify the appropriate response teams of the specific action that will be taken upon request.
- Act as a liaison between responding agencies and site personnel.
- Determine and coordinate the on-site personnel actions for the particular emergency situation.
- The emergency coordinator will notify the Project Director of any incident as soon as possible.

The emergency coordinator has the authority to commit resources as needed to contain and control released material and to prevent its spread to off-site areas.

7.3 Safety Signals

Vehicle, tractor, and portable gas-operated horns are used for safety signals as follows:

One Long Blast	**WARNING ALARM** - prepare for emergency response
Two Short Blasts	**ACTIVATION ALARM** - initiate emergency response activities as directed by Emergency Coordinator
Three Short Blasts	**ALL CLEAR** - return to normal activities.

7.4 Medical Emergency

Emergency medical personnel will be summoned without delay in the event of a medical emergency. The emergency coordinator, or his/her designee, will stay on the line with emergency services operator until that operator hangs up.

Worker Injury. If a person working in an area is physically injured, American Red Cross first-aid procedures will be followed. Depending upon the severity of the injury or illness, emergency medical response may be obtained accordingly. If the person can be moved, that person will be taken to a location where emergency first-aid treatment can be administered.

The local emergency medical facility should be contacted with a report after notification to ambulance service.

If injury to the worker is of chemical nature, the following first-aid procedures will be instituted as soon as possible:

Skin Exposure - If contaminated sludge or corrosive liquid gets on the skin, the affected area will be washed with soap or mild detergent.

Eye Exposure - If contaminated material gets into the eyes, the eyes will be flushed immediately at the eyewash station using abundant amounts of water while lifting up the lower and upper eyelids.

Inhalation - If an employee inhales a volume of toxic or corrosive vapors, the employee will be removed to fresh air at once. If breathing has stopped, artificial respiration will be performed on the affected individual until medical attention can arrive on scene and transport the patient to the nearest medical facility.

Ingestion - In the event a person ingests a toxic liquid or solid material, medical attention will be obtained immediately.

7.5 Emergency Information

Emergencies may include fires, fire hazards, accidents requiring first aid, or other incidents requiring emergency procedures. ATG and its subcontractors will, at all times, minimize potential emergencies. The following section lists emergency phone numbers:

EMERGENCY PHONE NUMBERS

Ambulance	**911**
Hospital (Emergency Room)	**911**
Fire Department	**911**
Security	**911**
Center for Disease Control (CDC)	**(404) 452-4100**
RCRA Hotline	**(800) 424-9346**
Poison Control Center	**(619) 543-6000**
National Response Center	**(800) 424-8802**

Directions to Hospital

Directions to the nearest hospital facility will be determined at the time of project mobilization

7.6 Key ATG Personnel

POSITION	NAME	PHONE	PAGER
Program Director	William Haney	423/482-3275	800/719-4431
Project Manager	Darren Smith	423/482-3275	800/719-4410
Site H&S Manager	Neal Whatley	423/482-3275	

7.7 Key Facility Personnel

POSITION	NAME	PHONE	PAGER
US Army IOC	Dave Horton	309/782-1759	800/503-2085
AMSMC-SFR IOC	Kelly Crooks	309/782-0338	
Contract Officer	Robert Matthys	309/782-5554	
(RASO) LCDR	Lino Fragosso	804/887-4692	
EFAWEST	David Song	415/244-2561	

7.8 Spill Prevention Control

Spill prevention control shall be as follows:

Secondary runoff will be controlled as described in Section 3.11 of the Resources Conservation and Recovery Act (RCRA) Facilities Closure Work Plan.

Decontamination pads (if required) will be constructed to contain all free liquids as described in Section 3.6 of the RCRA Facilities Closure Work Plan.

All work on site will proceed according to the Spill Prevention Control and Countermeasures Plan (SPCC).

7.9 Spill Response

If a spill of hazardous material occurs, the following actions will be taken:

- Notify the Health & Safety Manager and Project Manager Immediately.
- Take immediate measures to control and contain the spill within site boundaries.
- Keep unnecessary personnel away, isolate the hazardous area, and deny entry.
- Stay upwind and keep out of low-lying areas.
- Allow no flares, smoking, or flames in the hazard area.
- For liquids, keep combustibles away from the spilled material.

- Take necessary steps to clean up the spill and all contaminated material.

8.0 FORMS

8.1	ATGF-001 -	Radiological Survey Form
8.2	ATGF-002 -	Radiation Work Permit (RWP)
8.3	ATGF-010 -	Unconditional Release of Equipment or Items Report
8.4	ATGF-023 -	RWP Sign-In Sheet
8.5	ATGF-027 -	Training Attendance Record
8.6	ATGF-030 -	Air Sample Data & Analysis Form
8.7	ATGF-047 -	Occupational Radiation Exposure History Letter
8.8	ATGF-048 -	Air Sample Identification Record
8.9	ATGF-109 -	Site Registration
8.10	ATGF-111 -	Lost Badge Report
8.11	ATGF-111a	TLD Issue Log
8.12	ATGF-112 -	Personnel Radiation Exposure Record
8.13	ATGF-116 -	Contamination Report
8.14	ATGF-117 -	Personnel Contamination Report
8.15	ATGF-118 -	Clothing Contamination Report
8.16	ATGF-133 -	Foreman's Report of Injury
OSHA Form 101		Occupational Injury and Illness OSHA Supplemental Record

FORMS

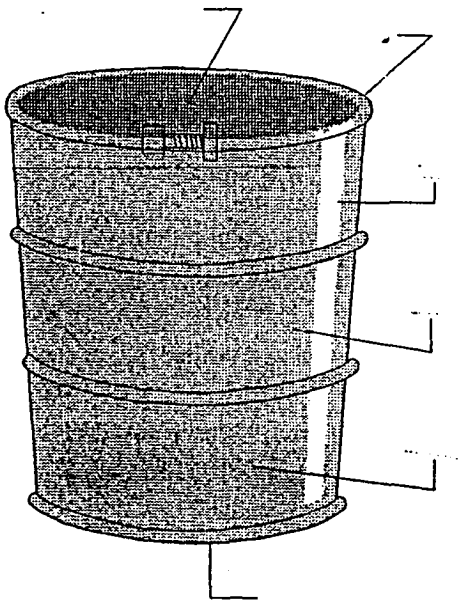
RADIOLOGICAL SURVEY REPORT

ATGS #:_____

DATE:	INSTRUMENTATION USED				
TIME:	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR:					
LOCATION:					
REVIEWED BY:					
Smear Locations Circled; Dose	Rates=	mR/hr			

PURPOSE OF SURVEY:_____

SMEAR RESULTS
RESULTS = DPM/100cm^2
UNLESS NOTED



#	$\beta\gamma$	α

Remarks:_____

ALLIED TECHNOLOGY GROUP, INC. FORM ATGF-001

RADIATION WORK PERMIT (RWP)

RWP #:_____ ☐ Regular ☐ Extended

SECTION I

Contract #	Date: / /	Time:

Location/Project:

Exposure Category: ☐ D&D ☐ Demolition ☐ Waste Processing ☐ CHAR

Job Description:_____

Estimated Start Date: / / Estimated End Date: / /

SECTION II

Existing Radiological Conditions:

Radiation Survey No._____ Airborne Survey No._____ Contamination Survey No._____

Existing General Area Radiation Level(s): β γ N	Existing General Contamination Levels:	Airborne DAC Level(s):
_____ mR/hr/γ _____ mrad/hr/corrected β _____ mrem/hr/N	_____ dpm/100cm^2 $\beta\gamma$ _____ dpm/100cm^2 α	α _____ % P $\beta\gamma$ _____ % P _____ % H_3
Existing Maximum Radiation Level(s): β γ N	**Existing Maximum Contamination Level(s)**	**Hot Particle?**
_____ mR/hr/γ _____ mrad/hr/corrected β _____ mrem/hr/N	_____ dpm/100cm^2 $\beta\gamma$ _____ dpm/100cm^2 α	☐ Yes ☐ No

Remarks:_____

SECTION III

Radiological Limits:
Maximum Allowed WB Exposure Rate γN: _____ mr/hr or mrem/hr
Corrected β: _____ mrad/hr Maximum Extremity Exposure Rate: _____ mr/hr
Maximum Allowed Contamination Level $\beta\gamma$: _____ dpm/100cm^2 α: _____dpm/100cm^2
Maximum Allowed Airborne Concentration Level: _____ % DAC
Remarks: _____

Industrial Hygiene/Safety Concerns: _____

RADIATION WORK PERMIT
PAGES 2 AND 3

THESE PAGES ARE NOT AVAILABLE.

EXTENSIVE RESEARCH WAS PERFORMED BY NAVFAC SOUTHWEST RECORDS OFFICE TO LOCATE THE MISSING PAGES. THIS PAGE HAS BEEN INSERTED AS A PLACEHOLDER AND WILL BE REPLACED SHOULD THE MISSING ITEMS BE LOCATED.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, RECORDS MANAGER
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

UNCONDITIONAL RELEASE OF EQUIPMENT OR ITEMS REPORT

ATGS #:	DATE:

PROJECT/LOCATION:

DESCRIPTION OF EQUIPMENT OR ITEMS:

SURVEY EQUIPMENT:

MODEL NO:	S/N:	BKRD:	EFF:	CAL DUE DATE:
MODEL NO:	S/N:	BKRD:	EFF:	CAL DUE DATE:
MODEL NO:	S/N:	BKRD:	EFF:	CAL DUE DATE:

CONTAMINATION LEVELS:

	dpm/100 cm^2 $\beta\gamma$	REMOVABLE
	dpm/100 cm^2 α	REMOVABLE
	dpm/100 cm^2 $\beta\gamma$	FIXED
	dpm/100 cm^2 α	FIXED

THIS IS TO CERTIFY THAT THE ABOVE DESCRIBED EQUIPMENT OR ITEMS HAS BEEN SURVEYED AND FOUND TO BE WITHIN ACCEPTABLE SURFACE CONTAMINATION LEVELS FOR UNCONDITIONAL RELEASE AS REQUIRED BY NUCLEAR REGULATORY GUIDE 1.86.

HEALTH PHYSICS TECHNICIAN:	DATE/TIME:

DISPOSITION OF EQUIPMENT OR ITEMS:

REVIEWED BY:	DATE:

RWP SIGN-IN SHEET

NOTE: **1. All personnel signing in on this RWP Sign-in sheet must have signed Section VI of the RWP.**
2. All persons entering the RWP areas must log in and out.

RWP#:	Location / Project	Date
Job Description:		

Date	Name (Print)	Signature	Social Security Number	Time		SRD Reading (mR)		Respirator Worn?		HP Comments
				In	Out	In	Out	Yes	No	

TRAINING RECORD

TRAINING DATE:	INSTRUCTOR:
LOCATION:	TOTAL CLASS HOURS:

TRAINING COURSE TITLE:

SCOPE OF TRAINING:

NAME OF STUDENT	SOCIAL SECURITY NO.	SIGNATURE

TRAINING APPROVED BY (Project Director):

AIR SAMPLE DATA AND ANALYSIS

ATGF-030 11/95

INSTRUCTION 1: Complete the following information concerning the sample:

Project/Location:_____

A/S ID Number:_____ RWP Number:_____ ATGS Number:_____

Date Start:_____ Date Stop:_____

Time Start:_____ Time Stop:_____ Total Time:_____ minutes

Sample Location:_____

Sample Type: ☐ Breathing Zone ☐ General Area ☐ Other:_____
☐ High Volume ☐ Low Volume ☐ Lapel/Personal

Comments:_____

Technician Performing Sample:_____ Date:_____

INSTRUCTION 2: Complete the following information concerning sampling equipment and counting equipment:

Type Sampler:_____ Type Counter:_____

Sampler I.D.:_____ Counter I.D.:_____

Cal. Date:_____ Probe I.D.:_____

Cal. Due Date:_____ Cal. Date:_____

Flow Rate Start:_____ ☐ cfm ☐ lpm Cal. Due Date:_____

Flow Rate Stop:_____ ☐ cfm ☐ lpm Count Time:_____minutes

Alpha Eff:_____

Average Flow Rate:_____ ☐ cfm ☐ lpm Beta/Gamma Eff:_____

Alpha Background:_____

Beta/Gamma Background:_____

Technician Performing Count:_____ Date: _____

Allied Technology Group, Inc.
47375 Fremont Blvd.
Fremont, California 94538
(800) 227-2840

OCCUPATIONAL RADIATION EXPOSURE HISTORY

Exposure Year 1994

Name:_____ Social Security Number:_____

Address:_____ Date of Birth:_____

City:_____ State:_____ Zip:_____

The Occupational Radiation Exposure listed below was received by the above individual while assigned by Allied Technology Group, Inc.

Project/Location Monitored	Monitoring Method TLD/Film Badge	Record/Estimate	NRC License Number(s):

Abbreviations: NC - Not Calculated ND - None Detected NM - Not Monitored SA - See attached

Monitoring Period		Deep-Dose Equivalent			Shallow-Dose Equivalent		LDE	CEDE	CDE	TEDE	TODE
From	To	X or γ	Neutron	Total DDE	Skin SDE, WB	Extremity SDE, ME	Lens	$H_{E,50}$	$H_{T,50}$	DDE+ CEDE	DDE+ CDE

THIS REPORT IS FURNISHED TO YOU UNDER THE PROVISIONS OF THE NUCLEAR REGULATORY COMMISSION REGULATION 10 CFR PART 20 TITLED "STANDARDS FOR PROTECTION AGAINST RADIATION". YOU SHOULD PRESERVE THIS REPORT FOR FURTHER REFERENCE. ALL DOSE EQUIVALENT VALUES ARE REPORTED IN MILLIREM.

Radiation Safety Officer:_____ Date:_____

AIR SAMPLE IDENTIFICATION RECORD

Project/Location:_____ Page ____ of ____

Sample ID	Date	Location	Initial Count α Results In μCi/ml	Initial Count βγ Results In μCi/ml	Decayed Count α Results In μCi/ml	Decayed Count βγ Results In μCi/ml	# of Hours Decayed

SITE REGISTRATION FORM
ALLIED TECHNOLOGY GROUP, INC.

PERSONAL INFORMATION

Name:			Date:
Social Security:	Date of Birth:	Project Name:	
Permanent Address:			
City:		State:	Zip:

EMPLOYER INFORMATION

Employer's Name:	
Employer's Address:	
Name of Emergency Contact:	
Address of Emergency Contact:	
Emergency Contact Phone:	
Signature:	

MEDICAL HISTORY

List any condition or ailment that may affect your ability to perform your job:		
Indicate if you are epileptic or diabetic:		
List any allergies you have:		
List any medications you are now taking:		
Last Tetanus Shot date:	Date of Last Physical:	
Signature:		Date:

FINAL PAYCHECK ADDRESS

Address:	
City:	
Phone:	
FedEx: ☐	Check box at left if you want your check Federal Expressed to you. $10.00 fee is deducted from your final pay for this service. If not checked, paycheck will be sent regular mail.

LOST BADGE REPORT

REPORT DATE:	REPORT TIME:
INDIVIDUAL'S NAME:	BADGE NUMBER:
DATE BADGE LOST:	TIME BADGE LOST:
LOCATION IF KNOWN:	
APPLICABLE RWP NUMBER:	

EXPOSURE CALCULATION

1.	Exposure from dosimeter readings: (Total from date issued) through_____ (Date)	=	_____ mrem
2.	Current dosimeter reading: (If more than one dosimeter, use highest reading	=	_____ mrem
3.	If individual was not wearing a dosimeter, or lost his dosimeter, assign highest exposure received by workers in the same area. If none, use dose rate x time in area for the same period.	=	_____ mrem
4.	Total estimated exposure to be assigned:	=	_____ mrem

THE METHOD USED TO ESTIMATE MY EXPOSURE AND THE ESTIMATED EXPOSURE ASSIGNED TO ME ARE ACCEPTABLE.

Employee's Signature	Date:
Calculated By:	Date:
R.S.O. Approval:	Date:

Form 5 Updated: ☐ YES ☐ NO	Report Voided (Not Necessary) ☐
Reason:	

BADGE ISSUE LOG

PROJECT / LOCATION:				BADGE SERIES NO:	
BADGE NO.	NAME	SOCIAL SECURITY NUMBER	NRC FORM 4 COMPLETE Y/N	PERIOD MONITORED FROM/TO	DATE OF BIRTH

1995 RADIATION EXPOSURE RECORD

NAME:	
SOCIAL SECURITY NO:	BIRTH DATE:
EXTREMITY BADGE NO:	LM BADGE NO:
LIFETIME WHOLE BODY EXPOSURE:	

	WHOLE	SKIN	EXTREMITIES		LIFETIME HIGHEST WHOLE BODY
			LEFT	RIGHT	
JANUARY					
FEBRUARY					
MARCH					
QUARTER TOTALS					
APRIL					
MAY					
JUNE					
QUARTER TOTALS					
JULY					
AUGUST					
SEPTEMBER					
QUARTER TOTALS					
OCTOBER					
NOVEMBER					
DECEMBER					
QUARTER TOTALS					
ANNUAL TOTALS					

ALLIED TECHNOLOGY GROUP, INC. FORM ATGF-112

CONTAMINATION REPORT INDEX

DATE	DATE	TYPE CLOTHING PERSONNEL	LOCATION OF CONTAMINATION	COMMENTS

PERSONNEL CONTAMINATION REPORT

NAME	DATE
LOCATION WHERE CONTAMINATION OCCURRED:	RWP#

EXTENT OF CONTAMINATION:	
A. INITIAL SURVEY RESULTS:	
B. SURVEY RESULTS AFTER DECONTAMINATION:	
C. RELEASE SURVEY RESULTS:	

SKIN DOSE EVALUATION:

A. Maximum contamination level conversion from dpm to mrad/hr maximum skin dose rate

_____ dpm (4,000 dpm/mrad/hr) = _____ mrad/hr.

B. Maximum skin dose rate Total time skin contaminated

Total maximum skin dose _____ mrad/hr x _____ hr* = _____ mrad**.

* If skin contamination cannot be removed, assume a residence time of 48 hours. Contact the Radiation Safety Officer in all cases where skin contamination cannot be reduced below 1000 dpm.

** If 75 mrad, contact the Radiation Safety Officer. (75 mrad is equivalent to 75000 cpm on the skin for 4 hours.)

RADIATION SAFETY OFFICER COMMENTS:

SIGNATURE (TECHNICIAN)	DATE
SIGNATURE (INDIVIDUAL)	DATE
SIGNATURE (SUPERVISOR)	DATE

CLOTHING CONTAMINATION REPORT

NAME:	BADGE NO.:
WORK AREA:	
DATE OF OCCURRENCE:	TIME OF OCCURRENCE:
LOCATION WHERE CONTAMINATION OCCURRED:	
JOB BEING PERFORMED:	
WAS WORK COVERED BY RWP? ☐ YES OR ☐ NO	IF YES, RWP#
ANTI-C's WORN? ☐ YES OR ☐ NO	
DESCRIBE:	
EXTENT OF CONTAMINATION, INCLUDING APPROXIMATE AREA:	
CAUSE OF CONTAMINATION:	
METHOD OF DECONTAMINATION:	
RADIATION PROTECTION COMMENTS:	
SURVEY SECTION:	
A. INITIAL SURVEY RESULTS:	
B. AFTER DECONTAMINATION:	
C. RELEASE SURVEY RESULTS:	
HEALTH AND SAFETY OFFICER	DATE
INDIVIDUAL'S SIGNATURE	DATE

FOREMAN'S REPORT OF INJURY OR ILLNESS

EMPLOYER'S NAME:				
EMPLOYER'S ADDRESS:				
WORK LOCATION:				
WORK LOCATION ADDRESS:				
EMPLOYEE'S NAME:				DATE OF BIRTH:
EMPLOYEE'S ADDRESS:				
MARITAL STATUS:	SINGLE	MARRIED	WIDOWED	DIVORCED
IS THIS A WORK RELATED INJURY OR ILLNESS?	☐ YES	OR	☐ NO	
DATE OF OCCURRENCE:		TIME OF OCCURRENCE:		
ACCIDENT OR ILLNESS DESCRIPTION:				
IS THIS A LOST TIME ACCIDENT OR ILLNESS?	☐ YES	OR	☐ NO	
IS THIS AN OSHA RECORDABLE ACCIDENT OR ILLNESS?	☐ YES	OR	☐ NO	
WAS MEDICAL TREATMENT NECESSARY?	☐ YES	OR	☐ NO	
FOREMAN'S SIGNATURE				DATE
REVIEWED BY				DATE

OSHA FORM 101 – OCCUPATIONAL INJURY AND ILLNESS
OSHA SUPPLEMENTAL RECORD

THIS FORM IS NOT AVAILABLE.

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FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, RECORDS MANAGER
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1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

APPENDIX D
TLD RESULTS

BADGE ISSUE LOG

PROJECT / LOCATION: Hunters Point Bldg #351 adjacent Area				BADGE SERIES NO: 8427	
BADGE NO.	NAME	SOCIAL SECURITY NUMBER	NRC FORM 4 COMPLETE Y/N	PERIOD MONITORED FROM/TO	DATE OF BIRTH
8427-1094	Darren Smith	508804689	N	2/23/96 - 2/29/96	5-22-70
8427-1095	Neal Whatley	563536109	N	2/23/96 - 2/29/96	5-24-64

TMA
Thermo A al
TMA/Eberline
5635 Jefferson Street NE
Albuquerque, NM 87109
(505) 345-9931

NVLAP

The dosimetry processor is accredited by NVLAP of the U.S. Department of Commerce as having the competence to perform specified tests in accordance with prescribed test methods and accreditation criteria.

CURRENT TLD OCCUPATIONAL RADIATION EXPOSURE REPORT

APPROVED FOR USE IN LIEU OF NRC FORM 5

CUSTOMER NO. 08427

PAGE 1 OF PAGES

ROSE MARIE TAUCHE

DATE 03/12/96

DOSIMETRY SERVICES

Hunter's Point 2/23/96 - 2/29/96

BADGE NUMBER / BODY LOCATION	WORK FACILITY / WORK LOCATION	NAME / BIRTHDATE / AGE / GENDER	ID / ID TYPE	SERVICE[1] / FREQ.[2]	DATE ISSUED / DATE RETURNED	DOSE FOR PERIOD (mrem) NOTE[3] / NEUTRON	DEEP / SHALLOW	LENS / EXTREMITY	ACCUMULATED DOSE (mrem) FOR CALENDAR QUARTER DEEP / ACCUMULATED DOSE (mrem) FOR CALENDAR YEAR DEEP	LENS / LENS	SHALLOW / SHALLOW	EXTREMITY / EXTREMITY	PERMISSIBLE ANNUAL DEEP (rem) / ACCUMULATED LIFETIME DEEP (rem)
01000		CONTROL		T	02/14/96		15	TOTALCOUNTS					
					03/07/96								
01092		N/A		T	02/14/96		0	0	0	0	0		5.0
				I	03/07/96		0		0	0	0		0.000
01093		N/A		T	02/14/96		0	0	0	0	0		5.0
				I	03/07/96		0		0	0	0		0.000
01094		Smith, D.	508-88-4689	T	02/14/96		0	0	0	0	0		5.0
		5/22/70	SSN	I	03/07/96		0		0	0	0		0.000
01095		Whatley, N.	563-53-6109	T	02/14/96		0	0	0	0	0		5.0
		5/24/64	SSN	I	03/07/96		0		0	0	0		0.000

[1] SERVICE CODES
T - WHOLE BODY BADGE (BGX)
H - RING BADGE
J - ANKLE BADGE
K - WRIST BADGE
N - NEUTRON BADGE
A - ALBEDO BADGE

[2] FREQUENCY CODES
W - WEEKLY
B - BIWEEKLY
M - MONTHLY
P - BIMONTHLY
Q - QUARTERLY
S - SEMIANNUAL
A - ANNUAL
I - IRREGULAR

[3] NOTE CODES
C - BADGE DAMAGED
E - REPORTED BY TELEPHONE OR WIRE
F - BADGE NOT USED
G - EXPLANATION ATTACHED
X - CONTAMINATED
Z - CALCULATED CONTROL
P - PLANNED EXPOSURE

CUSTOMER ALLIED TECHNOLOGY GROUP
ATTENTION BARBARA BURGETT
ADDRESS 99A MIDWAY LANE
CITY OAK RIDGE TN 37830

APPENDIX E
RADIATION WORK PERMIT

RADIATION WORK PERMIT (RWP)

RWP #: H.P.-001 ☒ Regular ☐ Extended

SECTION I

Contract #	Date: 2/26/96	Time: 0800

Location/Project: Hunters Point, San Francisco, CA - Cs-137 spill clean-up

Exposure Category: ☒ D&D ☐ Demolition ☐ Waste Processing ☐ CHAR

Job Description: Excavate + remove + package Cs-137 spill located in a 5'x 16' section of asphalt behind bldg. #351.

Estimated Start Date: 2/26/96 Estimated End Date: 2/29/96

SECTION II

Existing Radiological Conditions:

Radiation Survey No. H.P.-001 Airborne Survey No. NA Contamination Survey No. H.P.-001

Existing General Area Radiation Level(s): β γ N	Existing General Contamination Levels:	Airborne DAC Level(s):
.01 mR/hr/γ		α NA % P
NA mrad/hr/corrected β	<1000 dpm/100cm² βγ	βγ <10 % P
NA mrem/hr/N	NA dpm/100cm² α	NA % H_3
Existing Maximum Radiation Level(s): β γ N	**Existing Maximum smearable Contamination Level(s)**	**Hot Particle?**
.06 mR/hr/γ		☐ Yes
NA mrad/hr/corrected β	<1000 dpm/100cm² βγ	☒ No
NA mrem/hr/N	NA dpm/100cm² α	

Remarks: Note: Fixed contamination levels = Maximum 700 cpm/probe area

SECTION III

Radiological Limits:
Maximum Allowed WB Exposure Rate γN: γ 1 mr/hr or mrem/hr
Corrected β: 1 mrad/hr Maximum Extremity Exposure Rate: 1 mr/hr
Maximum Allowed Contamination Level βγ: 1000 dpm/100cm² α: NA dpm/100cm²
Maximum Allowed Airborne Concentration Level: 10 % DAC
Remarks:

Industrial Hygiene/Safety Concerns: Wear safety shoes + glasses during excavation, use correct lifting procedures

RADIATION WORK PERMIT (RWP)

WP #: HP-001 ☒ Regular ☐ Extended

SECTION IV

WORKER REQUIREMENTS

CLOTHING:	DOSIMETRY:	INSTRUCTIONS:	RESPIRATORY:
☐ Coveralls	☒ TLD	☐ Contact HP for Line Breaks	☐ FFNP
☐ Lab Coat	☐ Film Badge	☐ Protect Cuts	☐ FFAL
☐ Cloth Hood	☐ SRD	☐ Pre-Job Briefing	☐ SCBA
☐ Paper Coveralls	☐ Standard	☐ Post-Job Briefing	☐ PAPR
☐ Plastic Suit	☐ Elbows	☐ Contact HP Prior to Work in New Areas	☐ Dusk Mask
☐ Plastic Booties	☐ Gonad Pack	☐ Modesty Required	☐ Half Face
☒ Rubber Shoe Covers *	☐ Hot Cell Entry	☐ Site Specific Instructions	☐ Bubble Hood
☐ Canvas Shoe Covers	☐ Extremity	☐ Equipment Monitor at Job End	☐ _____
☐ Cotton Gloves	☐ Head Pack	☒ Clean Up Work Area During and After Job	Cartridges:
☒ Rubber Gloves *	☐ Special	☒ Eating, Drinking, Smoking, Chewing Prohibited	☐ Particulate
☒ Leather Gloves *	☐ Knees	☒ Frisk Upon Exiting Contaminated Area	☐ Vapor
☐ Beta Goggles/Face Shield	☐ Varying Field	☐ Have Prescribed HP Coverage or Stop Work	☐ Combination
☐ Extra	☐ Upper Field	☒ Exit Area Immediately Upon Emergency or Injury. Notify HP Immediately	☐ Other ____
☐ Other Clothing	☐ Ground Field		_____
* during excavation	☐ Alarming Dosimtery		_____
	☐ None		

Stay Time (Heat Stress, Radiaton, Exposure Limits, etc.): N/A hrs.

Special Instructions: _____

SECTION V

Health Physics Requirements

1. Job Coverage: ☐ Continuous ☒ Intermittent ☐ Start ☐ End of Job
2. Air Sampling: ☐ General Area ☒ Breathing Zone ☐ Lapel ☐ AgZ
   ☐ Tritium/C-14 ☐ Particulate ☐ Charcoal ☒ LoVol ☐ HiVol
3. Exposure Rate Surveys: ☒ Start of Job ☐ Continuous Monitoring ☐ Area Monitoring
   ☒ Intermittent Monitoring ☐ End of Job
4. Contamination Surveys: ☒ Start of Job ☐ Continuous Monitoring
   ☒ Intermittent Monitoring ☐ End of Job
5. Is the ALARA Consideration Complete and Attached? ☐ Yes ☒ No Why? N/A
6. Other: _____

SECTION VI

Personnel Authorized to Perform Work & Acceptance of Responsibility
*My signature verifies that I have read and fully understand the RWP Requirements

Date	Name (Print)	Signature*	SSN	HPS Initials	Year Dose to Date (Rem) TEDE	TODE	LDE	SDE WB	SDE EX
2/26/96	Darren K. Smith	Darren K. Smith	508884681	NGW	0	0	0	0	0
2/26/96	Neal Whatley	Neal Whatley	563536109	NW	0	0	0	0	0

H	Approvals/Reviews	I	Termination
Technician Generating RWP: Neal Whatley Date/Time: 2-26-96 0800		Date: 2-29-96 Time: 1500	
Industrial Hygiene Approval: Frank Whitson Date/Time: 2/26/96 0800		Health Physics Rep: Neal B. Whatley	
HP Supervisor Approval: Neal B. Whatley Date/Time: 2-26-96 0800		Reason: ☒ Job Complete ☐ RWP Revision	
RSO Manager Approval: Frank Whitson Date/Time: 2/26/96 0800		HP Supervisor Review: Neal B. Whatley	

APPENDIX F
RADIOLOGICAL SURVEY REPORT

RADIOLOGICAL SURVEY REPORT

ATGS #: Hunters Point - 001

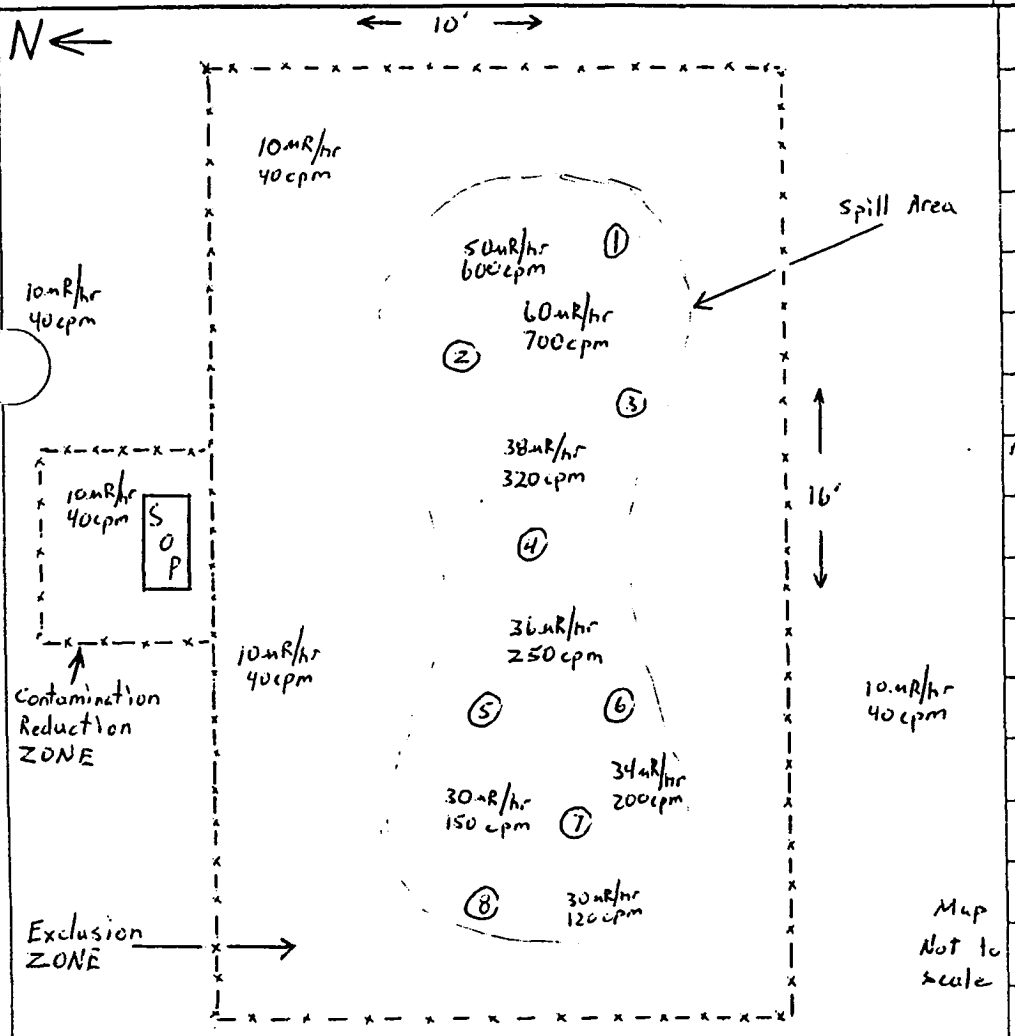
	INSTRUMENTATION USED				
DATE: 2-23-96					
TIME: 1600	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR: Neal S. Whatley	M-12s	114320	NA	10 uR/hr	12-7-96
LOCATION: Hunters Point Cs-137 spill area	M-12/44-9	121349 / 128061	10 %	40 cpm	11-3-96
REVIEWED BY: Frank C. Whitake	NA	NA	NA	NA	NA

Smear Locations Circled; Dose Rates= ~~mR/hr~~ NSW microR/hr

PURPOSE OF SURVEY: Pre-job survey to assess the radiological ~~condio~~ NSW conditions of the Cs-137 spill area located at Hunters Point, San Francisco, CA.

SMEAR RESULTS
RESULTS = DPM/100cm²
UNLESS NOTED

#	βγ	α
1	<1000 dpm	NA
2	<1000 dpm	NA
3	<1000 dpm	NA
4	<1000 dpm	NA
5	<1000 dpm	NA
6	<1000 dpm	NA
7	<1000 dpm	NA
8	<1000 dpm	NA
	N A	



Remarks: Note: All microR and G-M(cpm) readings are contact w/asphalt.

Note: ⊕ Denotes smear/swipe locations.

RADIOLOGICAL SURVEY REPORT

ATGS #: 004

DATE: 2-28-96	INSTRUMENTATION USED				
TIME: 1600	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR: Neal S. Whatley	model-12	125261	10%	50cpm	11-3-96
LOCATION: Hunter's Point	—	—	—	—	—
REVIEWED BY: Frank Whitcher	—	—	—	—	—
Smear Locations Circled: Dose	Rates=	mR/hr			

PURPOSE OF SURVEY: Radiological release survey of all tools and equipment used during Cs-137 contaminated asphalt excavation.

SMEAR RESULTS
RESULTS = DPM/100cm²
UNLESS NOTED

Smear #		Equipment / Tool
1	—	Jackhammer
2	—	cutting bits
3	—	Air compressor
4	—	Jackhammer air hoses
5	—	Hoe
6	—	shovel
7	—	Rad instruments
8	—	electric portable generator
9	—	air sampler
10	—	stantions
11	—	Hammer
12	—	Waste Drum #1 ~~outside~~ NSW external
13	—	Waste Drum #2 external
14	—	Waste Drum #3 external
15	—	Waste Drum #4 external

#	βγ	α
1	≤ Bkgd	N/A
2	≤ Bkgd	
3	≤ Bkgd	
4	≤ Bkgd	
5	≤ Bkgd	
6	≤ Bkgd	
7	≤ Bkgd	
8	≤ Bkgd	
9	≤ Bkgd	
10	≤ Bkgd	
11	≤ Bkgd	
12	≤ Bkgd	
13	≤ Bkgd	
14	≤ Bkgd	
15	≤ Bkgd	

Remarks: All items were direct frisked - No readings found above background

RADIOLOGICAL SURVEY REPORT

ATGS #: 005

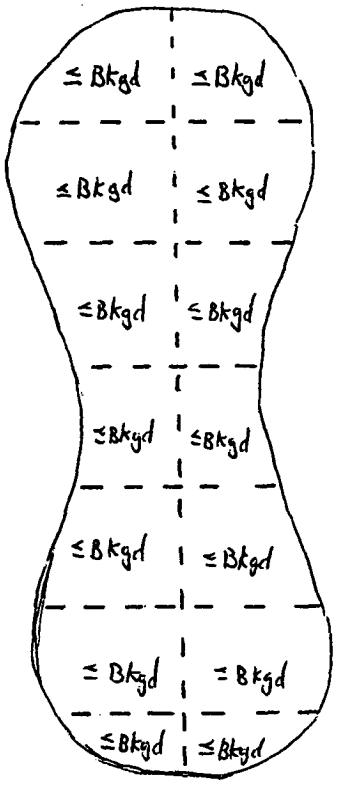
DATE: 2-28-96	INSTRUMENTATION USED				
TIME: 0900	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR: Neal S. Whatley	M-12/44-9 ~~44-10~~ ~~NSW~~	121349	10%	50 cpm	11-3-96
LOCATION: Hunter's Point	M-12s	114320	NA	9 μR/hr	12-7-96
REVIEWED BY: Frank White	M-3/44-10	120072	NA	40,000 cpm	4-23-96
Smear Locations Circled; Dose	Rates=	~~mR/hr~~ microR/Hr			

PURPOSE OF SURVEY: To verify that excavated spill area is ≤ Background radiation levels.

SMEAR RESULTS
RESULTS = DPM/100cm²
UNLESS NOTED

#	βγ	α
	NA	

Cs-137 contaminated asphalt area
Note: Area has been excavated to 4" below surface grade at this time.



N ←

Remarks: Area has been deposted and all equipment, tools, and barrier tape has been removed.

APPENDIX G
AIR SAMPLE RESULTS

AIR SAMPLE DATA WORK SHEET

Project/Location: Hunter's Point, S.F., CA

A/S ID Number: A/S-001 RWP Number: HP-001 ATGS Number: A/S-001

Date Start: 2-26-96 Date Stop: 2-26-96

Time Start: 0900 Time Stop: 1425 Total Time: 325 minutes

Sample Location: I/S Exclusion Zone during Cs-137 Remediation

Sample Type: ☒ Breathing Zone ☐ General Area ☐ Other:
☐ High Volume ☐ Low Volume ☐ Lapel/Personal

Total Sample Run Time		Sample Average Flow Rate		Total Volume
325 minutes	X	2 cfm X 2.83E+4	=	1.8E7 ml
		— lpm X 1.0E+3		

Time Counted	Gross Counts	Count Period ÷	Gross CR =	Bkgrnd CR -	Net CR =	CF ÷	EFF. cpm/dpm ÷	dpm/µCi ÷	Activity =
α —	— cts	— min	— cpm	— cpm	— cpm	— .67	—	2.22E+6	— µCi
βγ 1530	212 cts	5 min	42.5 cpm	39.4 cpm	3.1 cpm	.95	32%	2.22E+6	4.6E-6 µCi

Technician Performing Initial Count: N. Whatley Date: 2-26-96

Initial Activity		Volume		Initial Activity
α — µCi X FR	÷	— ml	=	— µCi/ml α
βγ 4.6E-6 µCi X FR	÷	1.8E7 ml	=	2.6E-13 µCi/ml βγ

FR = Filter Ratio (4" Filters = 3.0) (2" Filters = 1.0)

Technician Performing Calculation: N. Whatley Date: 2-26-96

AIR SAMPLE DATA WORK SHEET

Project/Location: Hunter's Point SF, CA

A/S ID Number: A/S-002 RWP Number: HP-001 ATGS Number: A/S-002

Date Start: 2-27-96 Date Stop: 2-27-96

Time Start: 0840 Time Stop: 1350 Total Time: 310 minutes

Sample Location: I/S Exclusion zone during Cs-137 remediation

Sample Type: ☒ Breathing Zone ☐ General Area ☐ Other:
☐ High Volume ☐ Low Volume ☐ Lapel/Personal

Total Sample Run Time		Sample Average Flow Rate		Total Volume
310 minutes	X	2 cfm X 2.83E+4	=	1.75E7 ml
		/ lpm X 1.0E+3		

Time Counted	Gross Counts	Count Period ÷	Gross CR =	Bkgrnd CR -	Net CR =	CF ÷	EFF. cpm / dpm ÷	dpm / µCi ÷	Activity =
α /	/ cts	/ min	/ cpm	/ cpm	/ cpm	/ .67	/	2.22E+6	/ µCi
βγ 1745	207 cts	5 min	41.4 cpm	39.4 cpm	2.0 cpm	.95	32%	2.22E+6	3.0E-6 µCi

Technician Performing Initial Count: N. Whitley Date: 2-27-96

Initial Activity		Volume		Initial Activity
α / µCi X FR	÷	/ ml	=	/ µCi/ml α
βγ 3.0E-6 µCi X FR	÷	1.75E7 ml	=	1.7E-13 µCi/ml βγ

FR = Filter Ratio (4" Filters = 3.0) (2" Filters = 1.0)

Technician Performing Calculation: N. Whitley Date: 2-27-96

APPENDIX H

SAMPLING RESULTS / SURVEY MAPS

RADIOLOGICAL SURVEY REPORT

ATGS #: 003

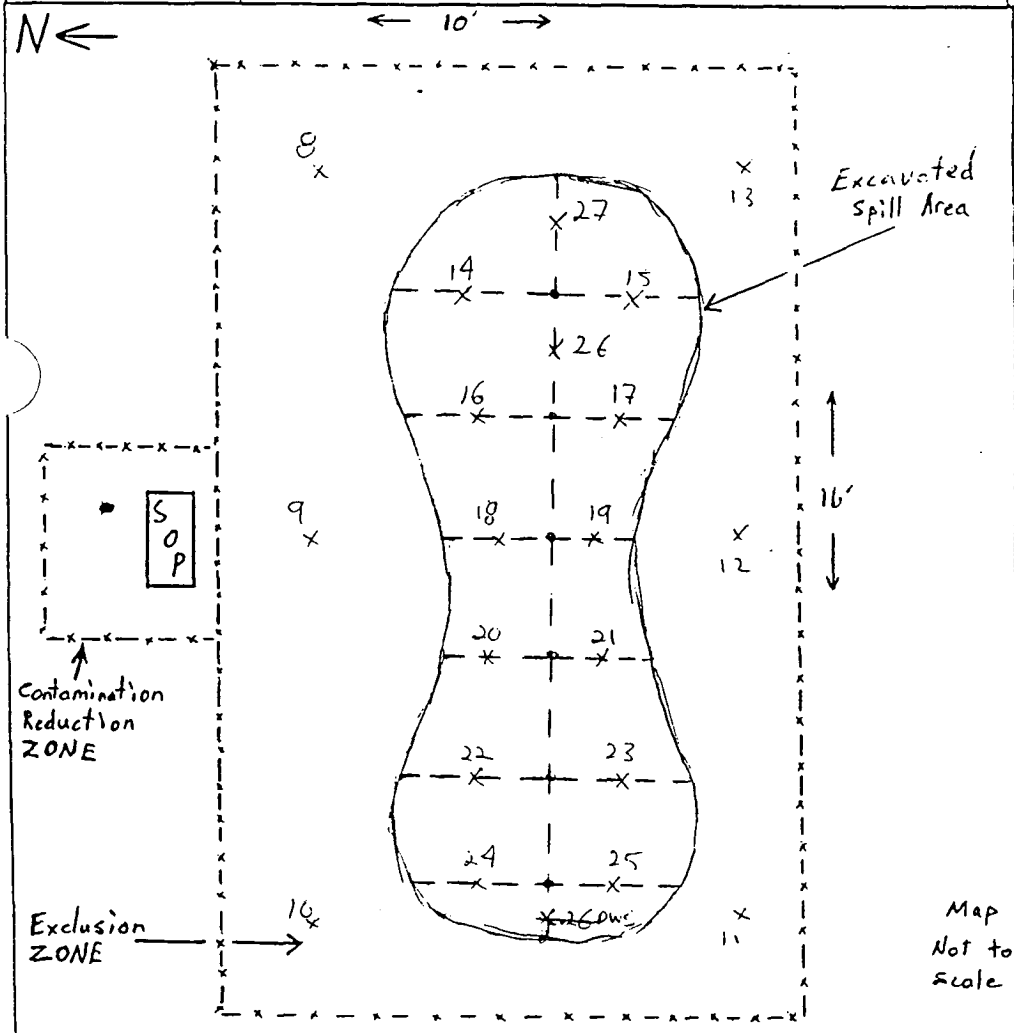
DATE: 2-28-96	INSTRUMENTATION USED				
TIME: 1400	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR: Neal S. Whatley	M-12/44-9	125261	10 %	NW 50cpm	11-3-96
LOCATION: Hunter's Point	NA	NA	NA	NA	NA
REVIEWED BY: Frank Whitcpn	NA	NA	NA	NA	NA

Smear Locations Circled: Dose Rates= ~~mR/hr~~ micro R/hr

PURPOSE OF SURVEY: Sample soil after clean-up of the Cs-137 contaminated asphalt excavation area. Samples taken at 4" below surface level.

SMEAR RESULTS
RESULTS = DPM/100cm²
UNLESS NOTED

#	βγ	α
	N/A	



Remarks: Each sample location was reading background with the GM field instrument.

AnalyticalTechnologies, Inc. 225 Commerce Drive Fort Collins, Colorado 80524 (970) 490-1511

March 8, 1996

Mr. Darren Smith
Allied Technology Group
99A Midway Ln
Oak Ridge, TN 37830

RE: ATI Workorder: 96-03-009
Client Project Name: Hunter's Point
Client Project Number: Not Submitted
Client P.O. Number: 3043

Dear Mr. Smith:

Twenty soil samples were received from Allied Technology Group on March 1, 1996. The samples were scheduled for Cesium 137 analysis. The results for this analysis are contained in the enclosed report.

Please note that all results are reported on dry weight basis. .

Thank you for your confidence in Analytical Technologies, Inc. Should you have any questions, please call.

Sincerely,

Analytical Technologies, Inc
Lance Steere
Project Manager

Enclosures

Analytical Technologies of Colorado, Inc.

QUALITY ASSURANCE DATA REVIEW

Date: March 6, 1996

ATI Workorder: 96-03-009 Analysis: Gamma Spectroscopy in Soil

The data contained in the following report have been reviewed and approved by the personnel listed below:

Radiochemistry Instrumentation/Reporting

Radiochemistry Final Data Review

CERTIFICATION

Analytical Technologies, Inc. certifies that the analyses reported herein are true, complete, and correct within the limits of the methods employed.

A case narrative is not included with this report.

Narrative Comments for Allied Technology Group
Project ID: Hunter's Point
PAI Work Order 96-03-009
Gamma Spectroscopy Analysis in Solids
03/08/96

Work Order 96-03-009 was received on 03/01/96 and scheduled for gamma spectroscopy analysis, which was completed on 03/05/96.

Note that all samples are reported on a pCi/gram dry weight basis.

Daniel Anna
Radiochemistry Instrumentation Technician

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 16:29

Lab Sample ID: 96-03-009-01

Sample Matrix: Soil

Client Sample ID: SS008C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.913 ± 0.103	11.3

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300901.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 16:31

Lab Sample ID: 96-03-009-02

Sample Matrix: Soil

Client Sample ID: SS009C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.494 ± 0.070	14.2

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300902.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 16:33

Lab Sample ID: 96-03-009-03

Sample Matrix: Soil

Client Sample ID: SS010C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	1.17 ± 0.113	9.64

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300903.96P

4

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:29

Lab Sample ID: 96-03-009-04

Sample Matrix: Soil

Client Sample ID: SS011C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.339 ± 0.055	16.2

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300904.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:30

Lab Sample ID: 96-03-009-05

Sample Matrix: Soil

Client Sample ID: SS012C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	1.16 ± 0.109	9.39

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300905.96P

4

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:34

Lab Sample ID: 96-03-009-06

Sample Matrix: Soil

Client Sample ID: SS013C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.152 ± 0.042	27.5

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300906.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:35

Lab Sample ID: 96-03-009-07

Sample Matrix: Soil

Client Sample ID: SS014C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.197 ± 0.047	24.0

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300907.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:36

Lab Sample ID: 96-03-009-08

Sample Matrix: Soil

Client Sample ID: SS015C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.528 ± 0.051	9.64

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300908.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:36

Lab Sample ID: 96-03-009-09

Sample Matrix: Soil

Client Sample ID: SS016C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.029 ± 0.025	85.9

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300909.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:44

Lab Sample ID: 96-03-009-10

Sample Matrix: Soil

Client Sample ID: SS017C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.379 ± 0.050	13.2

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

Data stored in file \gdr\prt\S0300910.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:50

Lab Sample ID: 96-03-009-D1

Sample Matrix: Soil

Client Sample ID: Duplicate

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.360 ± 0.051	14.1

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ). See PAI SOP 743FC for details of the TPU determination.

Remarks: Sample 96-03-009-D1 is a duplicate of 96-03-009-10.

Data stored in file \gdr\prt\S03009D1.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 15:44

Lab Sample ID: 96-03-009-11

Sample Matrix: Soil

Client Sample ID: SS018C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.295 ± 0.047	15.9

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

Data stored in file \gdr\prt\S0300911.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 20:36

Lab Sample ID: 96-03-009-12

Sample Matrix: Soil

Client Sample ID: SS019C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.097 ± 0.041	42.8

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300912.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 20:02

Lab Sample ID: 96-03-009-13

Sample Matrix: Soil

Client Sample ID: SS021C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	< 0.040	BDL

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ). See PAI SOP 743FC for details of the TPU determination.

BDL = Below Detection Limit; see method for DL determination

Data stored in file \gdr\prt\S0300913.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 20:03

Lab Sample ID: 96-03-009-14

Sample Matrix: Soil

Client Sample ID: SS022C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.068 ± 0.034	50.5

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ıta stored in file \gdr\prt\S0300914.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:00

Lab Sample ID: 96-03-009-15

Sample Matrix: Soil

Client Sample ID: SS023C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.086 ± 0.041	47.4

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300915.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:01

Lab Sample ID: 96-03-009-16

Sample Matrix: Soil

Client Sample ID: SS024C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.220 ± 0.049	22.3

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300916.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:48

Lab Sample ID: 96-03-009-17

Sample Matrix: Soil

Client Sample ID: SS025C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.295 ± 0.060	20.4

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300917.96P

4

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 22:18

Lab Sample ID: 96-03-009-D2

Sample Matrix: Soil

Client Sample ID: Duplicate

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.195 ± 0.048	24.8

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ). See PAI SOP 743FC for details of the TPU determination.

Remarks: Sample 96-03-009-D2 is a duplicate of 96-03-009-17.

Data stored in file \gdr\prt\S03009D2.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:10

Lab Sample ID: 96-03-009-18

Sample Matrix: Soil

Client Sample ID: SS026C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.236 ± 0.042	17.7

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300918.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:11

Lab Sample ID: 96-03-009-19

Sample Matrix: Soil

Client Sample ID: SS027C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.072 ± 0.025	34.5

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300919.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 02/28/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:11

Lab Sample ID: 96-03-009-20

Sample Matrix: Soil

Client Sample ID: SS020C

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	0.096 ± 0.029	30.3

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

ta stored in file \gdr\prt\S0300920.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 03/06/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 19:49

Lab Sample ID: 96-03-009-B1

Sample Matrix: Soil

Client Sample ID: Blank

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	< 0.024	BDL

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ). See PAI SOP 743FC for details of the TPU determination.

BDL = Below Detection Limit; see method for DL determination

Data stored in file \gdr\prt\S03009B1.96P

GAMMA SPECTROMETRY RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 03/06/96 12:00

Client Name: Allied Technology Group

Date Analyzed: 03/05/96 22:19

Lab Sample ID: 96-03-009-B2

Sample Matrix: Soil

Client Sample ID: Blank

Count Duration: 180 Min.

Nuclide	Activity (pCi/gram)	% Uncertainty
Cs-137	< 0.045	BDL

Reported Uncertainties are the Estimated Total Propagated Uncertainty (2σ).
See PAI SOP 743FC for details of the TPU determination.

L = Below Detection Limit; see method for DL determination

Data stored in file \gdr\prt\S03009B2.96P

GAMMA SPECTROMETRY QA RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 04/01/94 10:00

Client Name: Allied Technology Group

Date Analyzed : 03/05/96 20:00

Lab Sample ID: 96-03-009-S1

Sample Matrix : Soil

Client Sample ID: Lab Control

Count Duration: 30 Min.

Nuclide	Reported Activity	Known Value	Percent Recovery	Flag
Am-241	505	501	101	Pass
Cd-109	7520	7110	106	Pass
Co-57	144	157	91.8	Pass
Ce-139	210	209	100	Pass
Sn-113	437	456	95.9	Pass
Cs-137	212	205	103	Pass
Y-88	739	720	103	Pass
Co-60	306	313	97.8	Pass

PAI sets control limits for gamma spectroscopy as follows :
Control Limits = Known ± 15%

Data stored in file \gdr\prt\S03009S1.96P

GAMMA SPECTROMETRY QA RESULTS SUMMARY

Method 901.1 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 04/01/94 10:00

Client Name: Allied Technology Group

Date Analyzed : 03/05/96 19:12

Lab Sample ID: 96-03-009-S2

Sample Matrix : Soil

Client Sample ID: Lab Control

Count Duration: 30 Min.

Nuclide	Reported Activity	Known Value	Percent Recovery	Flag
Am-241	916	1010	90.4	Pass
Cd-109	13500	14400	94.3	Pass
Co-57	309	317	97.5	Pass
Ce-139	393	421	93.3	Pass
Sn-113	909	920	98.8	Pass
Cs-137	404	414	97.6	Pass
Y-88	1280	1450	87.7	Pass
Co-60	616	632	97.5	Pass

PAI sets control limits for gamma spectroscopy as follows :
Control Limits = Known ± 15%

Data stored in file \gdr\prt\S03009S2.96P

APPENDIX I

MANIFEST / PERMITS

AnalyticalTechnologies,Inc.
225 COMMERCE DRIVE
FORT COLLINS, CO
80524
(970) 490-1511
(970) 490-1522 FAX
1 (800) 443-1511

Chain of Custody

DATE 2/28 1 OF 2

ACCESSION NUMBER: 1

PROJECT MANAGER: Dave N. Smith
COMPANY: ATE
ADDRESS: 99A Industrial Dr
Oak Ridge, Tn 37603

SAMPLER: Dave N. Smith
(423) 482-3275 — PHONE NUMBER
423 482-3138 — FAX NUMBER

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	MATRIX	LAB ID
SS008C	2/28	0942	Soil	
SS009C		0947		
SS010C		0950		
SS011C		0953		
SS012C		0955		
SS013C		0958		
SS014C		1003		
SS015C		1005		
SS016C		1008		
SS017C		1011		
SS018C		1014		

ANALYSIS REQUESTED

9070/9071 — Oil & Grease	418.1 — TRPH	8015 Mod. — Gasoline	8015 Mod. — Diesel	8015/8020 — Gasoline/BTEX	8020 — BTEX	8240 — GC/MS VOC's	8270 — GC/MS SVOC's	8080 — Pesticides/PCB's	8080 — PCB Only	8310 — PNA's	8150 — Herbicides	8140 — OP Pesticides	TOX — EOX — TX	Total Metals:	TCLP:	Gross Alpha	Gross Beta	Radium 226	Radium 228	Tritium	Strontium	% Moisture	Tc-99 Cs-137						Number of Containers
																							X						1

PROJECT INFORMATION	SAMPLE RECEIPT	
PROJECT NUMBER: 5000-56	TOTAL NUMBER OF CONTAINERS	
PROJECT NAME: Hunter's Point	CHAIN OF CUSTODY SEALS Y/N	
PURCHASE ORDER NUMBER:	SEALS INTACT? Y/N/NA	
TAT: ☒ STANDARD ☐ RUSH DUE:	RECEIVED GOOD COND./COLD	

SAMPLE DISPOSAL: ☐ HAZ WASTE $5.00 ☒ RAD CHEM $15.00 ☐ RETURN

Comments:
- 1 hr TAT per quote
- Disposal is included in Quote

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1544	Signature: Time:	Signature: Time:
Printed Name: Date: 2/28	Printed Name: Date:	Printed Name: Date:
Company: ATE	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

AnalyticalTechnologies, Inc.
225 COMMERCE DRIVE
FORT COLLINS, CO
80524
(970) 490-1511
(970) 490-1522 FAX
1 (800) 443-1511

Chain of Custody

DATE 2/28 2 OF 2

ACCESSION NUMBER: 2

PROJECT MANAGER: Darren W. Smith
COMPANY: ATC
ADDRESS: 994 Midway Ln
Oak Ridge, TN 37830
SAMPLER:
(423) 482-3275 — PHONE NUMBER
(423) 482-3128 — FAX NUMBER

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	MATRIX	LAB ID
SS019C	2/28	1016	Soil	
SS021C		1100		
SS022C		1109		
SS023C		1111		
SS024C		1114		
SS025C		1118		
SS026C		1120		
SS027C		1125		
SS020C		1019		

ANALYSIS REQUESTED

9070/9071 — Oil & Grease	418.1 — TRPH	8015 Mod. — Gasoline	8015 Mod. — Diesel	8015/8020 — Gasoline/BTEX	8020 — BTEX	8240 — GC/MS VOC's	8270 — GC/MS SVOC's	8080 — Pesticides/PCB's	8080 — PCB Only	8310 — PNA's	8150 — Herbicides	8140 — OP Pesticides	TOX — EOX — TX	Total Metals:	TCLP:	Gross Alpha	Gross Beta	Radium 226	Radium 228	Tritium	Strontium	% Moisture	[illegible]	[illegible]					Number of Containers
																							X						1

PROJECT INFORMATION	SAMPLE RECEIPT	
PROJECT NUMBER: 5000-56	TOTAL NUMBER OF CONTAINERS	
PROJECT NAME: Hunters Point	CHAIN OF CUSTODY SEALS Y/N	
PURCHASE ORDER NUMBER:	SEALS INTACT? Y/N/NA	
TAT: ☒ STANDARD ☐ RUSH DUE:	RECEIVED GOOD COND./COLD	

SAMPLE DISPOSAL: ☐ HAZ WASTE $5.00 ☐ RAD CHEM $15.00 ☐ RETURN

Comments:
In TAT
Sample disposal included in Quote

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1 PM	Signature: Time:	Signature: Time:
Printed Name: Darren Smith Date: 2/28	Printed Name: Date:	Printed Name: Date:
Company: ATC	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

HQ, Industrial Operations Command

ATTN: AMSIO-DMW
Rock Island, Illinois 61299-6000
(309) 782-1759 DSN 793- 1759
Fax: (309) 782-2988 DSN 793-2988

FAX TRANSMISSION COVER SHEET

Date: *January 22, 1996*

To: *Darren Smith*

Fax: *(~~615~~ 423) 482-3138*

Subject: *Hunter's Point (export permit and work plan)*

Sender: *David R. Horton*

YOU SHOULD RECEIVE 3 PAGE(S), INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (309) 782-1759 DSN 793- 1759.

Darren,

Attached is a copy of the approved export petition for the disposal of waste from the cesium remediation at Hunter's Point for your records.

Please give me a call regarding the work plan when you get back in the office. There is a change of scope coming to you via procurement as previously discussed. I also have information on the background levels.

D Horton
David Horton

cc: Captain Martyn, AMSIO-ACE-D

resent 3/1/96

Darren,
Here is the export permit for Hunter's point again.
Dave Horton

P.S. Please note per the permit waste should leave California by 30 June 96.
sent 2/22/96

PETITION FOR EXPORTATION OF LOW-LEVEL RADIOACTIVE WASTE TO THE BARNWELL, SOUTH CAROLINA DISPOSAL FACILITY

Pursuant to the export provisions of the Southwestern Low-Level Radioactive Waste Disposal Compact Consent Act (Public Law 100-712, Article VI, Subdivision (A), Article III, Subdivision (G) (20),

U.S. Army, HQ, IOC ATTN: AMSIO-DMW Engineering Field Activity West

Rock Island, IL 61299-6000 Hunter's Point Annex
San Francisco, CA

(name and address of petitioner)

hereby petitions the Southwestern Low-Level Radioactive Waste Commission to authorize the Petitioner's export of low-level radioactive waste to the disposal facility in Barnwell County, South Carolina. For purposes of this Petition, low-level radioactive waste has the same definition as exists in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240) or the Southwestern Low-Level Radioactive Waste Disposal Compact Consent Act.

The Southwestern Low-Level Radioactive Waste Commission, upon approval, grants Petitioner the authority petitioned for, subject to the following terms and conditions:

1. An estimate of the volume and classification of low-level radioactive waste expected to be exported pursuant to this Petition for the period ending June 30, 1996 is attached (Attachment A);

2. All low-level radioactive waste exported for disposal must meet South Carolina's acceptance criteria;

3. Exportation of low-level radioactive waste for disposal is authorized only to the disposal facility in Barnwell County, South Carolina;

4. The exercise of this right shall be effective for the period beginning July 1, 1995 to and including June 30, 1996, or the date the Southwestern Regional Disposal Facility begins operation, whichever is earlier;

5. The Petitioner is aware of existing environmental conditions at the low-level radioactive waste disposal facility in Barnwell County, South Carolina. The Southwestern Low-Level Radioactive Waste Commission makes no representation regarding such conditions;

6. The Petitioner is under no obligation to use the low-level radioactive waste disposal facility in Barnwell County, South Carolina, and is doing so at Petitioner's own risk as an option of choice; and

7. The Petitioner agrees to submit to the Southwestern Low-Level Radioactive Waste Commission a copy of the signed cover page of the manifest accompanying each shipment.

PETITIONER

By: Stephen R. Mapley
(print name) (signature)

Title: Chief, Radioactive Waste Disposal Division

Telephone: (309) 782-2933 Date: 18 Oct 95

PETITION APPROVED / DISAPPROVED SWC B -96- [illegible]

By: [illegible] Date: [illegible]
Don J. Womeldorf
Executive Director

BARNWELL PETITION
ATTACHMENT A

Engineering Field Activity West, Hunter's Point Annex, San Francisco, CA

160 cubic feet of Cesium 137 contaminated asphalt and soil
Class A waste

Radioactive Shipment Record & Transfer Manifest

Allied Technology Group, Inc.
2025 Battelle Blvd. • P.O. Box 3002 • Richland, WA 99352
Phone: (509) 375-5160

PAGE 1 OF 2 — USE THIS NO. ON ALL CONTINUATION PAGES 01465

(4) CONSIGNED TO:
☒ Fremont Facility
☐ Richland Facility
☐ Yakima Facility
☐ Other

GENERATOR NAME: ALLIED TECHNOLOGY GROUP AT HUNTERS POINT NAVAL SHIPYARD.
ADDRESS:
CITY: SAN FRANCISCO STATE: CA ZIP: 94115
CONTACT: TOM DIAS PHONE: (510) 470-3008
GENERATOR PERMIT #: SHIPMENT #: 2-28-96-HP
GENERATOR #:

(2) AGENT/BROKER: ALLIED ECOLOGY SERVICES
BROKER'S ~~WA~~ ECOLOGY #:
ADDRESS: 47375 FREMONT BLVD
CITY: FREMONT STATE: CA ZIP: 94538
CONTACT: TOM DIAS PHONE: (510) 498-3008
BROKER SHIPMENT #: ~~8449~~ BROKER USER PERMIT #: B402
Broker's Authorized Signature Acknowledging Waste Receipt: 2-28-96 Date

(3) CARRIER: AES SHIPPING DATE: 2-28-96
CARRIER EPA # (if any):
ADDRESS: 47375 FREMONT BLVD
CITY: FREMONT STATE: CA ZIP: 94538
PHONE: (510) 498-3008
CASK TYPE: NA CASK SURFACE EXPOSURE RATE: NA mR/hr

(1) CHARGES TO: BROKER
NAME: PURCHASE ORDER #:
ADDRESS:
CITY: STATE: ZIP:

TOTAL FOR EACH CLASS: CLASSES	WEIGHT (Pounds)	RQ	HM	PROPER SHIPPING NAME & HAZARD CLASS (PER 49 CFR 172.101)	ID NUMBER
			X	Radioactive Material, Excepted package-empty packaging; 7	UN2910
	2080		X	Radioactive Material, low specific activity, n.o.s.; 7	UN2912
			X	Radioactive Material, n.o.s.; 7	UN2982
			X	Radioactive Material, Excepted package-limited quantity of material; 7	UN2910
			X	Radioactive Material, special form, n.o.s.; 7	UN2974
			X	Radioactive Material, Excepted package-instruments and articles; 7	UN2910

24 HOUR EMERGENCY No. (509) 539-5610 DUTY SUPERVISOR

SHIPMENT TOTALS

VOLUME (cu ft)	TOTAL # OF PACKAGES	SOURCE MATERIAL (kgs)	SPECIAL NUCLEAR MATERIAL (grams) U233	U235	PLUTONIUM	TOTAL
~~1000~~ 30	4	0	0	0	0	0

ACTIVITY

ACTIVITY TOTALS: ☐ Curies ☐ Millicuries ☒ (USCFR20.311)	TRITIUM	C-14	Tc-99	I-129	ALL ISOTOPES
	0	0	0	0	0.2191

(5) THIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THAT THE MATERIALS ARE CLASSIFIED AND DESCRIBED IN ACCORDANCE WITH THE REQUIREMENTS OF 10CFR PART 61 AND PART 20.310 OR EQUIVALENT STATE REGULATIONS.

Authorized Signature: AGENT FOR US ARMY INC Time: Date: 2-28-96

TERMS AND CONDITIONS

Upon inspection and acceptance by ATG, Inc. title to the materials which conforms to the Generator's representations herein shall thereupon transfer from the Generator and be vested in ATG, Inc.
PRODUCTS: The Generator represents and warrants that all data set forth in this Radioactive Shipment Record and Transfer Manifest is true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and the designated facility license.
SPECIFICATION: Generator agrees to indemnify ATG, Inc., its officers, employees and agents against all loss and liability whatsoever if such loss or liability results from the failure of the materials to conform in all respects to the data supplied on the Radioactive Shipment Record or the shipment fails to meet the requirements prescribed by the Department of Transportation or any other governmental agency having jurisdiction over such matters.

FOR ATG, Inc. USE ONLY

TYPE OF CONTAINER	VOLUME CU. FT.	# OF PKGS.	CU. FT. PER TYPE
DRUMS			
OVERPACK			
55	7.30		
30	4.01		
5	0.67		
OTHER			

LOAD EVALUATION

CHECK ALL THAT APPLY TO THIS LOAD. DESCRIBE SHORTCOMINGS IN COMMENT SECTION:
☐ Manifest Waste Description Inadequate ☐ Strong Inadequate
☐ Contamination or Leakage Detected ☐ Labels, Markings, etc. Inadequate
☐ Unexpected Exposure Rate Detected ☐ Container Integrity Inadequate
☐ No Violations Detected on this Load ☐ Other
DESCRIBE THE EXTENT OF ANY VIOLATION CHECKED ABOVE AND THE CORRECTIVE ACTION TAKEN.

☐ CHECK HERE IF A SUPPLEMENTAL REPORT IS ATTACHED

(CHECK THAT ALL COPIES ARE LEGIBLE)

CUSTOMER COPY

15:10 FROM:ALLIED TECHNOLOGY GROUP ID:15106513731 PAGE

PAGE 1

ENERATOR NO. [ ]

ENERATOR NAME: ATG AT HUNTERS POINT NAVAL SHIPYARD.

GENT/BROKER: AES

Allied Technology Group, Inc.
2026 Battelle Blvd. • P.O. Box 2002 • Richland, WA 99352 • (509) 375-5160

CONTINUATION SHEET

REV. 4/91

FOR BROKER USE ONLY:
Indicate one category for this page:
☐ This page describes PROCESSED waste
☒ This page describes COLLECTED waste

MANIFEST # 01465
PAGE 2 OF 2

(10) Container Type	(11) Container Volume (Cu. Ft.)	(12) Container Weight (Pounds)	(13) Physical Form	(14) Waste Description (Limit 3) (See Note #1)	(15) Barbert Solidification Stabilization Media (Limit 3) (See Note #2)	(16) Chemical Name (Chemical Agent 111(CFR)22.311)	Check Either if 0.01% Chelating Agent by Weight	(17) Radioactive (10CFR20.311)	(18) Activity Curies / Millicuries (10CFR20.311)	(19) Gross Weight Pounds Metric (Kilograms)	(20) Gross Material (Kilograms)	(21) Waste Form Class 10CFR 61.56	(22) Stability Class (See Note #3) 10CFR 61.56	Radiation Levels (CO Limit) (23) Exposure Container Surface	(24) Projected Air ATG Use Only	(25) Exposure Container At 1 Meter	(26) Transport Index	(27) Media Class	(28) D.O.T. Label 49CFR172.444 AND MARKINGS
STC	7.5	545	SOLID	1 12	1918	ASPHALT RUBBLE	X	Cs-137	0.0524	A	A	A	U	<.05		<.05	NA	NA	Radioactive LSA
						CONTAMINATED WITH Cs-137													Radioactive —
																			Radioactive —
STC	7.5	525	SOLID	1 12	1918		X	Cs-137	0.0553	A	A	A	U	<.05		<.05	NA	NA	Radioactive LSA
																			Radioactive —
STC	7.5	510	SOLID	1 12	1918		X	Cs-137	0.0537	A	A	A	U	<.05		<.05	NA	NA	Radioactive LSA
																			Radioactive —
STC	7.5	500	SOLID	1 12	1918		X	Cs-137	0.0527	A	A	A	U	<.05		<.05	NA	NA	Radioactive LSA
																			Radioactive —
																			Radioactive —
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	60	2080	on PAGE TOTALS						0.2191	A	A								

• Place emergency Codes Choose up to THREE. Select those which are predominant by volume; list the most RAPIDLY Quickly popping.

CODE (Liquids)		
1. Solvents	2. Solidified Liquids	6. Biologicals
2a Dry Solvent Waste	10. Barbed Aqueous Liquid	(Non-Sensitive Waste)
Dry Powder Waste	11. Barbed Non-Aqueous Liquid	14. Animal Carcasses in Lime and Barbed
Dry Fine Waste	12. Non-Aqueous Liquids in Waste in Barrels	
Powder Mixtures	13. Aqueous Liquids in Waste in Barrels	15. Gas
4. Plastics	26. Solidified Chemicals	16. Other
5. Resins	27. Solidified Oil	

NOTE #2 – Sorbent, Solidification, Stabilization Media Codes: CODE 99 – "NONE REQUIRED"
Choose up to THREE: Select those which are predominant by volume. Use exactly six letters for brevities on each media.

CODE (Sorbents)			CODE (Solidifiers)		CODE (Stabilizers)		CODE (Neutralizers)		CODE (Reactivators)
2. Speedi Dri	4. Safe-T-Sorb	20. Chapco HP-850	24. Allied (Series 8) Dacolid	30. Allied Grout	41. Allied (General Electric)	47. Life Technologies Cement
3. Calcinex	5. Safe-Hi-Sorb	29. Fortrel	25. Allied (Series 9) Dacolid	31. Portland Type I and II	42. Medical Sharps	48. Steam Equipment Cement
4. Floor Dry	22. Cellulose	30. Portland II	26. Bitumen (API 8)	40. Safe-T-Set	43. MTR & Waste Chemb	49. Neutralization Cement
Superfine	23. SORB-A-Bed	31. Aquasol	Waste Chemb	46. Other Solidification Media*	43. Chem-Pulled Cement	97. Other Reactivation Media*
6. 20 Dri	24. Chemsil 20	32. Aquasol II	27. Chem-Rubber Cement		44. Cement (200lb pail)	
26. Pumice	25. Chemsil 99	33. Safe-T-Set	28. Ceramic (Structural)		45. Bentonite (Vinyl Sealed Bentonite)	
27. Pumice II	28. Chemsil 2000	35. Other Sorbent*	29. Cement Custom Mixes			
7. Fuller's Dri	27. Chapco HP-820		31. Dow Mixes			
	61. Sensitive Chemicals		35. Bentonite			

*ANY USE OF "OTHER" AS A DESCRIPTION MUST INCLUDE A WRITTEN AND SIGNED EXPLANATION ATTACHED TO THIS MANIFEST.

NOTE #3 - NRC Stability Class
Code: S - Stable
U - Unstable

CUSTOMER COPY

FROM: ALLIED TECHNOLOGY GROUP ID: 15106513731 96 15 11

Page 1 of 1 — ALLIED ECOLOGY SERVICES

TO: Consignee: ALLIED ECOLOGY SERVICES
Street: 47375 FREMONT BLVD
City: FREMONT State: CA Zip Code: 94538

From: Shipper: ALLIED TECHNOLOGY GROUP AT
Street: HUNTERS POINT SHIPYARD
City: SAN FRANCISCO State: CA Zip Code:
Tel: (415) 737-2616

Route: NA

Vehicle Number: 3Y55328

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class, Identification Number (UN or NA), Packing Group, per 172.101, 172.202, 172.203	TOTAL QUANTITY	WEIGHT (Subject to Correction)	RATE	CHARGES
4-DRUMS	X	RADIOACTIVE MATERIAL, LOW SPECIFIC		2090 LBS		
METAL		ACTIVITY, N.O.S. 7 UN 2912				
DRUMS						
		4 DRUMS OF CS-137 CONTAMINATED				
		ASPHALT RUBBLE.				
		ISOTOPES - CS-137				
		ACTIVITY 0.2191 mC.				
		CHEMICAL FORM - ASPHALT RUBBLE				
		PHYSICAL FORM - SOLID				
		LABELS OR MARKINGS - RADIOACTIVE - LSA				
		CONTAINERS - STRONG TIGHT CONTAINERS				
		THIS IS AN "EXCLUSIVE USE" SHIPMENT				
		AND THE TRUCK IS PLACARDED RADIOACTIVE				

PLACARDS TENDERED: YES ☒ NO ☐

REMIT C.O.D. TO: ADDRESS

COD

COD FEE: PREPAID ☐ COLLECT ☐

TOTAL CHARGES

FREIGHT CHARGES

Note — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding N/A per

Shipper hereby certifies that he is familiar with all the terms and conditions of the bill of lading, including those on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all of any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions in the governing classification on the date shipment is made.

SHIPPER: ALLIED TECHNOLOGY GROUP AT
PER: HUNTERS POINT SHIPYARD
per Ch Brown AGENT FOR USARMY EOC

CARRIER: ALLIED ECOLOGY SERVICES
PER: X
DATE: 2-28-96

2

Short post-office address of shipper.

PRINTED ON RECYCLED PAPER USING SOYBEAN INK
PRESS FIRM SOY INK
STYLE F65 LABELMASTER, An American Labelmark Co., Chicago, IL 60648 800/621-6808

RADIOACTIVE SHIPMENT MANIFEST FORM

(1) AUTHORIZING COMMAND (check block)

☒ HQ, U.S. ARMY, ~~AMCCOM~~ JOC (Attn: AMSMC-SFR/~~Merritt~~ CROOKS) Rock Island, IL 61299-5000 (309) ~~782-2984~~ 782-0338

☐ U.S. AIR FORCE, SA-ALC (Attn: SA-ALC/EME: Vaughn) Kelly AFB, TX 78214-5000 (512) 925-8635

☐ Officer in Charge, Naval Sea Systems Command Detachment, Radiological Affairs Support Office (Attn: L. Martin/R. Lowman) Yorktown, VA 23691 (804) 887-4892

(2) Ship To: Defense Consolidation Facility, P.O. Box 828, Highway 64 (1 mile west of Snelling), Snelling, S.C. 29812, 803-259-1119

EMERGENCY TELEPHONE: (803) 259-1786

(4) CARRIER: CONSOLIDATED MOTOR FREIGHT

ADDRESS: 5812-A LA RIBERA ST LIVERMORE CA 94550

TELEPHONE: (510) 783-7100

SHIPPING DATE: 3-7-96

ORIGINATING COMMAND: EFA WEST, HUNTERS POINT CA

LOCATION: HUNTERS POINT ANNEX San Francisco CA

(3) USE THIS NUMBER ON ALL CONTINUATION PAGES — SHIPMENT CONTROL NUMBER: USN-95-007-1788 — PAGE 1 OF 1

(5) TOTAL ACTIVITIES (10CFR20.311)

ALL ISOTOPES	TRITIUM	C-14	Tc-99	I-129
0.2191	-0-	-0-	-0-	-0-

(6) TOTAL FOR EACH CLASS: NO OF PACKAGES	WEIGHT (POUNDS)	PROPER SHIPPING NAME AND HAZARD CLASS (PER 49 CFR 172.101)	ID NUMBER	RQ (PER 49 CFR 172.203(c)
4	2080	RADIOACTIVE MATERIAL, LIMITED QUALITY, N.O.S.-RADIOACTIVE MATERIAL	UN 2910	MUNE
		RADIOACTIVE MATERIAL, INSTRUMENTS AND ARTICLES-RADIOACTIVE MATERIAL	UN 2911	
		RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, N.O.S.-RADIOACTIVE MATERIAL	UN 2912	
		RADIOACTIVE MATERIAL, N.O.S.-RADIOACTIVE MATERIAL	UN 2982	
		OTHER (SPECIFY)		

(7) ( ) YES (X) NO THIS VEHICLE IS CONSIGNED EXCLUSIVE USE. (49 CFR 173.403(l)) LOADING AND UNLOADING MUST BE ACCOMPLISHED BY CONSIGNOR, CONSIGNEE OR HIS DESIGNATED AGENT. VEHICLE OR PACKAGE CONFIGURATION CANNOT BE ALTERED FROM ORIGINAL LOADING WITHOUT THE PRIOR APPROVAL OF THE CONSIGNEE. ANY LOADING OR UNLOADING MUST BE PERFORMED BY PERSONNEL HAVING RADIOLOGICAL TRAINING AND RESOURCES APPROPRIATE FOR THE SAFE HANDLING OF THE CONSIGNMENT.

DRIVER'S SIGNATURE [signature] DATE 3-7-96

24 HOUR EMERGENCY PHONE No. (509) 539-5610 DUTY SUPERVISOR

IMPORTANT: "This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and in proper condition for transportation according to the applicable regulations of the Department of Transportation."

Signature: Nelly Brown AGENT FOR US ARMY JOC

(9) "Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License 287-04 as amended, and the effective consolidation facility acceptance criteria, within 48 hours prior to shipment, and further certification is made that the inspection revealed no items of non-compliance with all applicable laws, rules and regulations."

Date: 3-7-96 By: Nelly Brown

Title and Organization: ASST. BROKER, AGENT FOR US

Commercial Telephone No. (SW) 440-3008

ATTACH SHIPPING DOCUMENTS TO OUTSIDE OF PACKAGE

(11) RADIONUCLIDE EACH CONTAINER	(12) ACTIVITY EACH RADIONUCLIDE (mCi)	(13) PHYSICAL FORM	(14) CHEMICAL FORM	(15) WASTE DESCRIPTION	(16) WASTE CLASS (A, B, C)	(17) SPECIAL NUCLEAR MATERIAL (Grams)	(18) SOURCE MATERIAL (Pounds)	CONTAINER (19) CONTAINER WEIGHT (Pounds)	(20) CONTAINER VOLUME (Cu. Ft.)	(21) CONTAINER TYPE	(22) RADIATION LEVELS: Container Surface mR/hr, DR/hr	(T.I.) 1 Meter mR/hr	(23) CONTAMINATION CONTAINER SURFACE (DPM/100 cm²): Alpha	Beta-Gamma	(24) LABELIMARKINGS USED
Cs-137	0.0574	SOLID	ASPHALT	ASPHALT RUBBLE CONTAMINATED WITH CESIUM	A	-0-	-0-	545	7.5	STRONG TIGHT CONTAINER (1A2)	<.05	NA	<200	<2000	Radioactive LIMITED QUANTITY Radioactive— Radioactive—
Cs-137	0.0553	SOLID	ASPHALT	ASPHALT RUBBLE CONTAMINATED WITH ~~CES~~ CESIUM	A	-0-	-0-	525	7.5	STRONG TIGHT CONTAINER	<.05	NA	<200	<2000	Radioactive LIMITED QUANTITY Radioactive— Radioactive—
Cs-137	0.0537	SOLID	ASPHALT	ASPHALT RUBBLE CONTAMINATED WITH CESIUM	A	-0-	-0-	510	7.5	STRONG TIGHT CONTAINER	<.05	NA	<200	<2000	Radioactive LIMITED QUANTITY Radioactive— Radioactive—
Cs-137	0.0527	SOLID	ASPHALT	ASPHALT RUBBLE CONTAMINATED WITH CESIUM	A	-0-	-0-	500	7.5	STRONG TIGHT CONTAINER	<.05	NA	<200	<2000	Radioactive LIMITED QUANTITY Radioactive— Radioactive— Radioactive—
	0.2191	Page Totals				-0-	-0-	2080	30			NA			

ED BY OMB: NO. 3150-0164 EXPIRES: 3/31/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 1.17 HOURS. THIS UNIFORM MANIFEST IS REQUIRED BY NRC TO MEET REPORTING REQUIREMENTS OF FEDERAL AND STATE AGENCIES FOR THE SAME TRANSPORTATION AND DISPOSAL OF LOW-LEVEL WASTE. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0164), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON DC 20503.

ORM 540 — U. S. NUCLEAR REGULATORY COMMISSION

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

GENCY TELEPHONE NUMBER (Include Area Code):) 539-5610 DUTY SUPERVISOR

ATION: IED TECHNOLOGY GROUP

S AN "EXCLUSIVE USE" SHIPMENT? YES / NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> 4

EPA REGULATED E REQUIRING A EST ACCOMPANY HIPMENT? YES / NO ☒

" provide Manifest Number ======> EPA MANIFEST NUMBER: NA

5. SHIPPER – NAME AND FACILITY: H.Q US ARMY, INDUSTRIAL OPERATIONS COMMAND ICC, HUNTERS POINT NSH (ATTN: AMSIO-DMW/CROOKS) ROCK ISLAND, IL 61299-6000

SHIPPER I.D. NUMBER

COLLECTOR

PROCESSOR

USER PERMIT NUMBER: 0137-00-96-E

SHIPMENT NUMBER: USN-95-007-1788

GENERATOR TYPE (Specify): US ARMY IOC

CONTACT: MR. DAVE SONG

TELEPHONE NUMBER (Include Area Code): (415) 244-2561

6. CARRIER – Name and Address: CONSOLIDATED MOTOR FREIGHT, 5812-A LARIBERA, LIVERMORE, CA 94550

EPA I.D. NUMBER: NA

SHIPPING DATE: 3-7-96

CONTACT: CHRISTOPHER J. MILLER

TELEPHONE NUMBER (Include Area Code): (510) 783-7100

SIGNATURE – Authorized representative acknowledging waste receipt: J. Miller

DATE: 3-7-96

7. NRC FORM 540 AND 540A — PAGE 1 OF ____ PAGE(S)
NRC FORM 541 AND 541A — ____ PAGE(S)
NRC FORM 542 AND 542A — ____ PAGE(S)
ADDITIONAL INFORMATION — ____ PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): USN-95-007-1788

9. CONSIGNEE – Name and Facility Address: DEFENSE CONSOLIDATION FACILITY, SC HWY 64, SNELLING, SC 29812

CONTACT: CLIFF BOWERS

TELEPHONE NUMBER (Include Area Code): (803) 259-1119

SIGNATURE – Authorized consignee acknowledging waste receipt:

DATE:

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: Willie Brown.

TITLE: AGENT FOR US ARMY IOC

DATE: 3-7-96

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY IN SI UNITS	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
ACTIVE MATERIAL, EXCEPTED PACKAGE - ED QUANTITY OF MATERIAL, 7, UN2910	RADIOACTIVE	NA	SOLID, OXIDE, ASPHALT CESIUM	Cs-137			2.12 MBq	NA	545	1
ACTIVE MATERIAL, EXCEPTED PACKAGE - ED QUANTITY OF MATERIAL, 7, UN2910	RADIOACTIVE	NA	SOLID, OXIDE, ASPHALT CESIUM	Cs-137			2.05 MBq	NA	525	2
ACTIVE MATERIAL, EXCEPTED PACKAGE - ED QUANTITY OF MATERIAL, 7, UN2910	RADIOACTIVE	NA	SOLID, OXIDE, ASPHALT CESIUM	Cs-137			1.99 MBq	NA	510	3
CTIVE MATERIAL, EXCEPTED PACKAGE ED QUANTITY OF MATERIAL, 7, UN2910	RADIOACTIVE	NA	SOLID OXIDE, ASPHALT CESIUM.	Cs-137			1.95 MBq	NA	500	4

GNEE USE ONLY

Form RHA-CT (5/80)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Radioactive Waste Shipment Certification Form

General Instructions and Information: This is a two part form to be used by shippers and carriers of radioactive waste. The certifications contained herein satisfy the requirements of Section 13-7-150, of Act No. 499 of 1980, the South Carolina Radioactive Waste Transportation and Disposal Act. This certification along with a copy of the prior notification form shall accompany each shipment of radioactive waste into and within the State of South Carolina. The shipper is to complete his portion of the form and present it to the carrier as part of the shipping documents. Upon receipt, the carrier shall complete his portion of the form. Upon delivery of the shipment to the consignee, a copy of this certification form, and a copy of the Prior Notification and Manifest form with the consignee acknowledgement, shall be returned to the Department.

Part I: Shipper's Certificate of Compliance

1. Name of Shipper and Address:
H.Q. U.S. ARMY, INDUSTRIAL OPERATIONS COMMAND (IOC)
(ATTN: AMSIO-OMW/CROKS) HUNTERS POINT NSB
ROCK ISLAND, IL 61299-6000
Telephone No. (309) 782-0338

2. Shipment Identification No. USN-95-007-1788

3. Transport Permit No. 0137-00-95-E

In compliance with Act No. 499 of 1980, the South Carolina Radioactive Wsate Transportation and Disposal Act, I hereby certify on behalf of the above-named shipper to the South Carolina Department of Health and Environmental Control that the above-named shipper has complied with all provisions of Act No. 499 of 1980, and all applicable laws and administrative rules and regulations, both State and Federal, regarding the packaging, transportation, storage, disposal and delivery of such wastes. I further certify that this shipment of radioactive waste has been inspected within 48 hours of the time of departure and that no items of non-compliance with applicable laws, rules or regulations were found.

Date 3-7-96

WILLIE BREMER AGENT FOR USARMY IOC — Willie Bremer
Typed Name and Title of Agent of Shipper — Signature

Part II: Carrier's Certification

1. Name of Carrier and Address:
CONSOLIDATED MOTOR FREIGHT
5812-A LARIBERA ST LIVERMORE, CA 94550
Telephone No. (510) 783-7100

2. Shipment Identification No. USN-95-007-1788

3. Transport Trailer No.

4. Schedule Date of Departure of Shipment: 3-7-96

5. Estimated Date of Arrival of Shipment: 3-13-96

Certification is hereby made to the South Carolina Department of Health and Environmental Control that: (a) the shipper has provided the carrier with a copy of the shipment manifest, the certificate of compliance, and the routing instructions; (b) the shipment of radioactive waste has been properly placarded for transport according to applicable U.S. Department of Transportation Regulations; (c) all shipping papers originated or reproduced by the carrier have been properly executed; (d) the transport vehicle has been inspected according to applicable State and Federal regulations within the prescribed intervals and that all safety and operational components are in good working order and meet the requirements of regulations; (e) all drivers who will operate the vehicle within the State of South Carolina are qualified to transport hazardous materials as specified by applicable U.S. Department of Transportation regulations; (f) the Department shall be immediately notified of any variance, occurring after departure, from the shipper's notification of primary routes in South Carolina and estimated date of arrival; (g) all applicable laws and administrative rules and regulations, both State and Federal, regarding the transportation of radioactive wastes will be complied with.

Date 3-7-96

William Thompson DRIVER — W. Thompson
Typed Name and Title — Signature

DHEC 803
(5/80) (Copies of this form may be reproduced locally as needed)

ORIGINAL - NOT NEGOTIABLE

Shipment No. USN-95-007-1788

Carrier No. -

Page 1 of 1

Consolidated Motor Freight
(Name of Carrier)

Date: 3/7/96

TO:		FROM:	
Consignee:	Defense Consolidation Facility / CNSI	Shipper:	Allied Technology Group
Street:	SC HWY. 64 attn: Cliff Bowers	Street:	47375 Fremont Blvd.
Phone:	(803) 259-1119	City:	Fremont State: CA Zip Code 94538
City:	Snelling State: SC Zip Code 29812	24 hour Emergency contact Tel. No.	(509) 539-5610

Route NA

Vehicle No.

No. of Units & Containers Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class, Identification Number (UN or NA), Packing group, per 172.101, 172.202, 172.203	TOTAL QUANTITY	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
4 EACH 55-GALLON		Radioactive Material, Excepted Package-Limited Quantity	30 cuft.	2080 lbs.		
DRUMS		of Material, 7, UN2910				
		4 drums of Cesium contaminated Asphalt Rubble				
		Radionuclides: Cs-137				
		Total Activity: 0.2191 mCi				
		Chemical Form: Asphalt, Oxides				
		Physical Form : Solid				
		Transportation Index: NA				
		Markings Used: Radioactive				
		Container Type: Strong Tight Package				
		Container Specification: 1A2-metal drum				
		Shipment Control # USN-95-007-1788				

PRO NO. 602-479544
CF ♦ CC
FLF 29002-17 CIRCLE ONE: DEST CODE
CFMF

PLACARDS TENDERED : YES ☐ NO ☒

Note - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding N/A

per

REMIT C.O.D. To: NA

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by - RAIL - HIGHWAY - WATER - (DELETE NON-APPLICABLE MODE OF TRANSPORT) according to applicable international and national governmental regulation.

M. Brown Signature

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all to any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER	Allied Technology Group	CARRIER	Consolidated Motor Freight
PER	M. Brown. AGENT FOR USARMY IAC	PER	
		DATE	3-7-96 3/7/96