



SYNOPSIS OF REMEDIAL ACTION APPROACH SITE RW-06, KIRTLAND AFB, NM

PROJECT NAME: Remedial Action Construction (RA-C), Site RW-06, Radioactive Burial Site 11
CONTRACT AGENCY: Air Force Center for Engineering and the Environment (AFCEE)
CONTRACT NUMBER: FA8903-04-D-8693 / 0005
PROJECT NUMBER: MHMV2008-7027
CABRERA NUMBER: 04-5200.05
AWARD DATE: 23 JULY 2008

1.0 PROJECT OBJECTIVES

1.1. Remedial Action Construction (RA-C)

The primary objective of this project is to implement the 2007 RCRA Facility Investigation (RFI) recommendation to excavate and dispose of all waste associated with historical United States Air Force (AF) activities at Site RW-06, Radioactive Burial Site 11 (referred to herein as RW-06) at Kirtland Air Force Base (AFB), New Mexico. Remediation of RW-06 will consist of excavation, removal, and off base disposal of the buried wastes contained in nine (9) trenches, including the remains of animals used during radiological testing, low-level radioactive materials, laboratory records, and laboratory equipment such as cages, glassware, plastic bottles, and syringes. This work scope is being performed under United States Nuclear Regulatory Commission (NRC) Materials License 06-30556-01, issued to Cabrera Services, Inc. (CABRERA) which is valid through June 30, 2010.

It is anticipated that RA-C will result in the deactivation of RW-06 as a solid waste management unit (SWMU) by the State of New Mexico. The remediation is being performed in accordance with CERCLA protocols under contract to the Air Force Center for Engineering and the Environment (AFCEE). Remediation of this SWMU will meet commitments made by Kirtland AFB to the New Mexico Environment Department (NMED) and to local stakeholders to address contamination at SWMUs on the base.

1.2. Decommissioning

Although the primary objective of this RA-C is not the formal decommissioning of RW-06 relative to the AF Master Materials License, the remediation has been designed to meet the requirements of applicable NRC decommissioning guidance documents (e.g., NUREG-1757 and NUREG 1575). It is anticipated that the results of the remedial action and post-remediation Final Status Survey (FSS) will be suitable to support a subsequent request for formal decommissioning of the site, should the AF desire.

2.0 SITE BACKGROUND & REMEDIATION HISTORY

2.1. Background

RW-06 occupies approximately 4.5 acres of undeveloped land, wholly within the confines of Kirtland AFB. From 1960 to 1971 the site was part of a 40-acre facility operated by the Radiobiology Laboratory (RL), Biophysics Branch, Air Force Weapons Laboratory. RW-



06 represents a portion of the former RL facility that was used as a burial site for radioactive materials. Animal carcasses, low-level radioactive material, and other laboratory wastes were disposed in nine (9) parallel trenches approximately 10-20 feet in depth. The 4.5-acre RW-06 site is currently surrounded by chain link fence with locked gate, immediately east-southeast of the former Riding Stables complex. An outer chain link fence with locked gate encircles the former Riding Stables complex, RW-06, former horse riding area and surrounding open fields.

2.2. Remediation History

2.2.1. 1981 to 1999

The first environmental assessment of the SWMU, completed in 1981, consisted of a Phase 1 records and historical review study which identified the site as a radioactive burial trench-and-fill operation in use from 1960 to 1971. Between 1985 and 1999, numerous investigations were conducted at the RW-06 site including radiation surveys, geophysical surveys, a mercury vapor survey, extensive surface and subsurface soil sampling, installation of groundwater monitoring wells and horizontal borehole, long-term groundwater monitoring, and subsurface borehole geophysical logging. No gross soil contamination with volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), or petroleum hydrocarbons resulting from bulk disposal of these compounds was identified. Inorganic contaminants such as antimony, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, vanadium, and zinc were detected in some soil samples at concentrations that exceeded the NMED-approved background concentrations. As with the organic constituents, the detections of inorganic constituents did not exceed the NMED Site Screening Levels.

2.2.2. 2006 RCRA Facility Investigation (RFI)

A RFI was conducted at RW-06 in October 2006. The RFI included excavation of 533 linear ft of exploratory trenches that cut through the former disposal trenches. The trenches and excavated soil and wastes were field screened for radionuclides. Soil samples were collected from the exploratory trenches and analyzed for metals and radionuclides. Based on the laboratory data, soil samples did not generally contain metals or radionuclides at concentrations exceeding NMED-approved background concentrations. A variety of materials, including laboratory wastes and animal remains, were identified in the exploratory trenches. Of the waste materials, 2 laboratory waste items including a carboy (3-gallon [gal] polyethylene bottle) and plastic zip top bag containing alkaline batteries, broken electronic components and soil were found during the excavation activities as contaminated with primarily ^{137}Cs and americium-241 (^{241}Am).

2.2.3. 2008 Planning Survey

A planning survey was completed by CABRERA in October 2008 as part of this RA-C project to verify previous work and address data gaps. The planning survey consisted of a driveover gamma survey, a geophysical investigation with Global Positioning System (GPS) to locate trenches and assist in identifying trench geometry, and the collection and analysis of subsurface soil for chemical and radiological parameters to assist with waste



characterization and identification of constituents of potential concern for use during the excavation and segregation of materials as part of the remedial action. Potential radionuclides of concern (ROCs) from known historical activities such as ^{90}Sr and ^{137}Cs were detected at low levels, and ^{226}Ra was detected at background levels. ^{241}Am was not detected. Based on the potential disposal of medical isotopes at RW-06, carbon-14 (^{14}C) analyses were performed, resulting in detections above the NRC screening level in two samples.

3.0 CONTAMINANTS OF CONCERN

3.1. Radionuclides

The radionuclides of concern (ROC) are H-3, C-14, Sr-90, Cs-137, Ra-226, and Am-241. The ROCs were selected based on an evaluation of historical investigation results, knowledge of the RL activities, and the planning survey conducted at RW-06 in the fall of 2008. Based on the historical information and data from the planning survey, it is assumed that all wastes and debris will have primarily radioactive contamination.

3.2. Chemical Contaminants

Site-attributable organic or inorganic chemical contamination may be present at low levels. Analytical results from 1994 investigation indicated the presence of seven (7) VOCs including: acetone; ethylbenzene; methylene chloride; tetrachloroethene; toluene; 1,1,1-trichloroethane; and xylenes. A total of eight (8) SVOCs including: benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; di-n-butyl phthalate; bis(2-ethylhexyl)phthalate; fluoranthene; phenanthrene; and pyrene were detected at low levels and in a limited number of the site soil samples. None of the detected SVOCs exceeded the current NMED residential soil screening levels (SSLs). Both DROs and GROs were detected at low levels and in a limited number of the site soil samples.

3.3. Soil Evaluation Criteria

NMED residential SSLs for chemical constituents and default NRC screening values for the ROCs will be used as soil evaluation criteria for radionuclides for this project. Discussions between Kirtland AFB and NMED have resulted in consensus with regard to the remediation goals for this RA-C.

4.0 PROPOSED REMEDIAL ACTIVITIES

4.1. Overview of Remediation Effort

The AF has contracted with CABRERA to plan, execute, and report the results of the RA-C. An overview of the planned remediation effort is outlined below:

1. Conduct Planning Survey to verify previous investigation results and address data gaps
2. Develop and submit for AF review a site-specific Quality Program Plan (QPP) accordance with AF and NRC guidance. Per the AFCEE statement of work, CABRERA will implement, maintain, and comply with the approved site-specific QPP.
3. Obtain permits and make appropriate notifications



4. Procurement and subcontracting activities to secure field support facilities, materials, equipment, offsite laboratory services, sanitary services, electrical hookups, and instrumentation
5. Mobilization to RW-06 and site preparation, including establishing temporary facilities, services and site controls to facilitate field remediation, ensure worker and public safety as well as environmental protection, and setting up and calibrating an on-site radiological laboratory for the project
6. Excavate waste trenches and discrete contaminated locations, preliminary field screening and sorting, waste sampling and laboratory analysis for disposal/reuse characterization, and segregation of excavated material
7. Prepare and submit waste profiles and applications for waste disposal; obtain approvals for disposal from waste facilities; and coordinate with waste transporters and disposal facilities
8. Packaging, transporting, and off-site disposal of waste streams
9. Confirm that project cleanup goals have been met in accordance with the guidance for FSS contained in NRC Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) NUREG-1575 (Revision 1) for radionuclides of concern and NMED Residential SSL for non-radiological chemical contaminants of concern for the RW-06 site have been met at the limits of excavation
10. Backfilling the remediated excavations, completing site restoration, and demobilization
11. Preparation and submission of a Remedial Action-Construction Completion Report (RACR) and a FSS Report in accordance with MARSSIM to document project activities and site closure.

4.2. **Status of Remediation Effort**

The Planning Survey was completed in October 2008. The QPP was developed following the Planning Survey and has been reviewed by the Kirtland AFB Restoration Branch, Kirtland AFB Bioenvironmental Branch, AF School of Aerospace Medicine (USAFSAM) Radiation Health Branch, and the AF Radioisotope Committee (RIC). Cabrera is currently awaiting notice to proceed with the field work portion of the project.

4.3. **Planning Documents**

The QPP presents the project background, organization, methods, procedures, facilities and reporting requirements that will be implemented to complete remediation, including a MARSSIM FSS in accordance with AF and MARSSIM guidelines, while maintaining a safe and productive work environment. The QPP describes the overall plan for conducting the FSS and remedial action at RW-06 in accordance with the AFCEE Statement of Work (SOW) entitled, *Remedial Action Construction at RW-06, Radioactive Burial Site 11 at Kirtland Air Force Base, New Mexico* (Project Number MHMV20087027), dated 23 April 2008.

4.3.1. **QPP Overview**

The following site-specific technical plans are included as attachments to the QPP:

- ▶ **Work Plan (WP)** at Attachment I
 - Provides technical guidance for implementing the field activities



- ▶ **Sampling and Analysis Plan (SAP)** at Attachment II provides technical guidance for all project activities related to collection and analysis of environmental media samples, quality assurance (QA) and quality control (QC), and data management; the SAP is divided into two sub-plans:
 - **Field Sampling Plan (FSP)** at Attachment IIa
 - ◆ Provides guidance on sampling objectives, sample media types, sample locations and collection frequency, sampling equipment and procedures, sample handling and analysis, field measurements, and record keeping.
 - **Quality Assurance Project Plan (QAPP)** at Attachment IIb
 - ◆ Provides guidance for QA and QC activities, including data quality objectives (DQOs), sample custody and handling, equipment calibration and maintenance, field laboratory management, sample analysis protocols, and data management.
- ▶ **Site Safety and Health Plan (SSHP)** at Attachment III
 - contains guidance and procedures for ensuring that health and safety standards are met during all field activities in accordance with 29 Code of Federal Regulations (CFR) 1910.120 and 29 CFR 1926

4.3.2. QPP in Relation to NRC Decommissioning Plan Guidelines

Development of the QPP for the *remediation* of site RW-06 followed both the NUREG-1757 and NUREG 1575 guidance documents. The following QPP/DP Crosswalk (Table 1) lists the 15 elements of a NUREG-1757 Decommissioning Plan and depicts where these elements are addressed in the QPP.

Table 1 – DP / QPP Crosswalk

Element Number	NUREG-1757 Decommissioning Plan Element	Location within RW-06 Quality Program Plan
1	Executive Summary	QPP, Section 1.0
2	Facility Operating History	QPP, Section 2.0
3	Facility Description	QPP, Section 2.0
4	Radiological Status of Facility	QPP, Section 2.0
5	Dose Modeling	FSP Section 1.3, 5.1
6	Environmental Information	WP
7	ALARA Analysis	TBD
8	Planned Decommissioning Activities	WP, FSP
9	Project Management and Organization	QPP, Section 3.0
10	Health and Safety Program During Decommissioning: Radiation Safety Controls and Monitoring for Workers	SSHP
11	Environmental Monitoring and Control Program	FSP 4.0, 5.0, 6.0, SSHP



12	Radioactive Waste Management Program	WP Section 4.0, SSHP Section 10
13	Quality Assurance Program	QAPP
14	Facility Radiation Surveys	FSP 4.0, 5.0, 6.0
15	Financial Assurance	N/A

4.4. Remediation Approach

Remediation of RW-06 will follow a specific process designed to efficiently and effectively remove contaminated material, sort the material into component waste streams for disposal purposes; characterize each waste stream; and package, handle, transport, and dispose of or re-use the material such that disposal costs are controlled and resource conservation practices are followed. The remediation process consists broadly of the following numbered general activities groups (referred to hereafter as Series) each comprised of discrete subset of numbered steps.

- ▶ Excavation and initial surveying (Series 1)
- ▶ Preliminary field screening and sorting (Series 2)
- ▶ Final testing and segregation (Series 3)
- ▶ Material disposition (Series 4)

The screening and sorting process will include careful excavation, visual inspection, scanning with field instruments, on-site laboratory analysis for radioactive constituents, and offsite laboratory analysis for radioactive and chemical constituents. It is anticipated that the excavated material will fall into 1 of 5 broad categories as a result of the preliminary screening and sorting process:

- ▶ Clean debris
- ▶ Clean soil for reuse onsite as backfill
- ▶ LLRMW - mixed radioactive/RCRA chemical waste
- ▶ RCRA waste - chemically contaminated
- ▶ LLRW – low level radioactive waste

Material will be properly handled, packaged, staged, transported, and disposed in accordance with all appropriate Federal, State, and Local regulations.

5.0 NRC License Authority

- 5.1. This work scope is being performed under NRC Materials License 06-30556-01, issued to Cabrera Services, Inc. which is valid through June 30, 2010. The authorized use specified in this license includes “receipt, storage, use, and/or possession incident to the following activities: decontamination, decommissioning, and remediation of facilities and grounds, equipment, and containers”. In accordance with CABRERA’s license, a written agreement has been established between the AF and CABRERA specifying which licensed activities will be performed under CABRERA’s supervision. This agreement includes a commitment by CABRERA and the AF to ensure safety, work to prevent a release of contaminants, and help with cleanup of the temporary job site if there is an accident. In addition, CABRERA’s



license requires compliance with client (here the AF) license requirements when working on a temporary job site.

5.1.1. Notification to NRC

Pursuant to CABRERA's license, at least 14 days prior to initiating activities at RW-06 CABRERA will notify, in writing, the NRC Regional Administer and provide the following:

- ▶ The estimated type, quantity, and physical/ chemical form of the radioactive material
- ▶ The site location
- ▶ A description of site activities, including waste management and disposition
- ▶ The estimated project start date and duration
- ▶ Identification and information on how to contact project personnel

6.0 Cabrera Experience with Similar Projects

To date, CABRERA has implemented similar remediation, demolition, and decommissioning work under our NRC license at a total of 38 sites over the past nine years. In each case the NRC was properly notified in accordance with our license requirements. In all cases, the NRC has issued no findings resulting from their audits and inspections of our work. Table 2 provides a list of the sites addressed along with the names of the owner/operators or agency responsible for remediation.



TABLE 2. Summary of Cabrera NRC License Use for Remediation Sites

CABRERA SERVICES NRC LICENSE USE SUMMARY					
Remediation Site	Responsible Agency	NRC Control No.	Start Date	End Date	
Ames National Animal Disease Center , Ames, IA	USDA	132165	10/14/2002	11/22/2002	
AREVA, NP , Lynchburg, VA	AREVA	142246, 142330, 142356	5/5/2008	5/30/2008	
Beltsville Agricultural Research Ctr 2005, Beltsville, MD	USDA	137541	9/6/2005	11/30/2005	
Beltsville Agricultural Research Ctr 2006, Beltsville, MD	USDA	138667, 138919	4/17/2006	11/30/2006	
BOMARC 2006, New Egypt, NJ	AFCEE	139103	7/24/2006	12/31/2006	
BOMARC 2007, New Egypt, NJ	AFCEE	140181, 141241	3/21/2007	12/31/2007	
Dept Home Land Security EML 2008, NY, NY	DHS	141861			
Dupont OU2, Deepwater, NJ	DuPont/US Army Corps	133745	8/4/2003	10/31/2003	
Former Long Beach Naval Station 2008, Long Beach, CA	US Navy	CA Reciprocity	9/22/2008	12/24/2008	
Great Lakes Naval Training Ctr 2003, Great Lakes, IL	NAVSEADET RASO	133556, 133599, 134097	9/15/2003	12/31/2003	
Great Lakes Naval Training Ctr 2004, Great Lakes, IL	NAVSEADET RASO	135331, 135719, 136134	8/9/2004	12/31/2004	
Great Lakes Naval Training Ctr 2005, Great Lakes, IL	NAVSEADET RASO	137060	6/13/2005	8/1/2005	
Great Lakes Naval Training Ctr 2007, Great Lakes, IL	NAVSEADET RASO	140673, 141792	7/5/2007	12/30/2007	
Great Lakes Naval Training Ctr 2008, Great Lakes, IL	NAVSEADET RASO	142246	4/15/2008	8/31/2008	
GTE Hicksville, Hicksville, NY	GTE Operations Support Incorporated	133304	7/7/2003	8/3/2003	
Hicksville Union Free School District	GTE Operations Support Incorporated	133527	8/21/2003	8/30/2003	
Hunters Point, San Francisco, CA	US Navy/CA	CA Reciprocity	2/13/2009	6/30/2009	
Kirtland AFB Trench 2006, Kirtland AFB, Albuquerque, NM	Kirtland AFB	139465	10/16/2006	11/17/2006	
Lake City Army Ammunition Plant (2008), Independence, MO	USArmy	142356	5/17/2008	12/31/2008	
Lake City Army Ammunition Plant (2002), Independence, MO	USArmy	131419	5/13/2002	6/13/2002	
Lake City Army Ammunition Plant (2006), Independence, MO	USArmy	139598	11/6/2006	11/17/2006	
McClellan 2005, McClellan, CA	Air Force Materiel Command	CA Reciprocity	8/22/2005	2/17/2006	
McClellan 2006, McClellan, CA	Air Force Materiel Command	CA Reciprocity			
McClellan 2009, McClellan, CA	Air Force Materiel Command	CA Reciprocity	4/1/2009	ongoing	
McClellan Bldg 248 (2008), McClellan, CA	Air Force Materiel Command	CA Reciprocity	8/27/2008	12/31/2008	
McClellan Bldg 252 (2008), McClellan, CA	Air Force Materiel Command	CA Reciprocity	8/27/2008	12/31/2008	
Nellis Air Force Base (2003)	Air Force (AFIERA)	132464	11/12/2002	12/20/2002	
Nellis Air Force Base (2004)	Air Force (AFIERA)	134205	1/5/2004	1/30/2004	
Nevada Test Site VERB Bldg, NTS, NV	DOE	transfer to DOE	8/25/2008	12/31/2008	



CABRERA SERVICES NRC LICENSE USE SUMMARY					
Remediation Site	Responsible Agency	NRC Control No.	Start Date	End Date	
New Haven Depot, New Haven, IN	DOD Defense Logistics Agency	140723	7/9/2007	12/30/2007	
Painesville (2005), Painesville, OH	US Army Corps of Engineers FUSRAP	137520, 138031	9/1/2005	10/14/2005	
Painesville (2006), Painesville, OH	US Army Corps of Engineers FUSRAP	OH Reciprocity	7/10/2006	12/31/2006	
Painesville (2007), Painesville, OH	US Army Corps of Engineers FUSRAP	OH Reciprocity	4/9/2007	9/30/2007	
Painesville (2008), Painesville, OH	US Army Corps of Engineers FUSRAP	OH Reciprocity	1/16/2008	~5/31/2008	
Syracuse Air National Guard Range, Spragueville, NY	Air Force AFIOH	137445	8/22/2005	9/5/2005	
University CA Berkeley Gill Tract, Berkeley, CA	University of Berkeley	CA Reciprocity	6/16/2008	8/31/2008	
University CA Berkeley Marchant Bldg, Berkeley, CA	University of Berkeley	CA Reciprocity	6/1/2009	current	
University CA Berkeley Warren Hall, Berkeley, CA	University of Berkeley	CA Reciprocity	10/1/2007	1/31/2008	

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

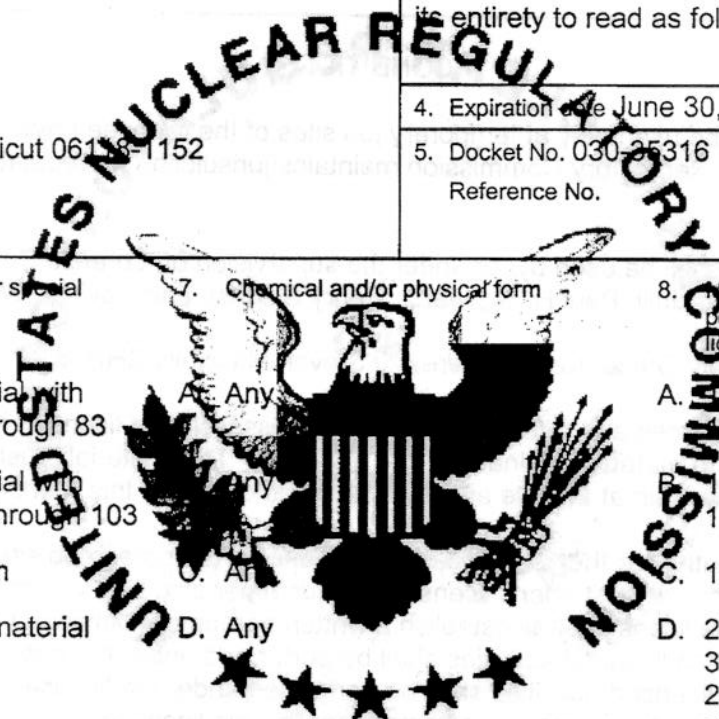
<p>Licensee</p> <p>1. Cabrera Services, Inc.</p> <p>2. 473 Silver Lane East Hartford, Connecticut 06118-1152</p>	<p>In accordance with letter dated September 20, 2004,</p> <p>3. License number 06-30556-01 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date June 30, 2010</p> <hr/> <p>5. Docket No. 030-25316 Reference No.</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material with atomic numbers 1 through 83</p> <p>B. Any byproduct material with atomic numbers 84 through 103</p> <p>C. Uranium and Thorium</p> <p>D. Any special nuclear material</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Any</p> <p>D. Any</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 400 curies per radionuclide and 400 curies total</p> <p>B. 1 curie per radionuclide and 1 curie total</p> <p>C. 10,000 kilograms</p> <p>D. 200 grams uranium-233, or 350 grams uranium-235, or 200 grams plutonium, or any combination of these provided the sum of the ratios does not exceed unity</p>
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9. Authorized use:

A through D: Receipt, storage, use, and/or possession incident to the following activities:

- (1) Decontamination, decommissioning, and remediation of facilities and grounds, equipment, and containers;
- (2) Site characterization;
- (3) Solidification and treatment of wastes;
- (4) Packaging for transport;



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- (5) Transport in packages or containers approved for use under the provisions of 10 CFR Part 71, for transfer to licensees authorized to receive the materials, in accordance with the terms and conditions of licenses issued by the NRC or an Agreement States; and
- (6) As calibration sources and reference standards for operational testing of radiation detection equipment.
10. Licensed material may be used only at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
11. A. Licensed material shall be used by, or under the supervision of, Lorenzo Cabrera, Raymond E. Holmes; Steven Masciulli, Paul H. Schwartz, Henry Siegrist, and David J. Watters.
- B. The Radiation Safety Officer for this license is Steven Masciulli, CHP, CSP.
12. Except for calibration sources and reference standards, possession of licensed material at each temporary job site shall be limited to material originating from each site. This material must either be transferred to an authorized recipient or remain at the site until activities authorized by this license are completed.
13. This license does not authorize the use of licensed material at temporary job sites for uses already specifically authorized by the customer's license. If a customer also holds a license issued by the NRC or an Agreement State, the licensee shall establish a written agreement between the licensee and the customer specifying which licensed activities shall be performed under the customer's license and supervision, and which licensed activities shall be performed under the licensee's supervision pursuant to this license. The agreement shall include a commitment by the licensee and customer to ensure safety, and any commitments by the licensee to help the customer clean up the temporary job site if there is an accident. A copy of the this agreement shall be included in the notification required by Condition 17.A. of this license.
14. Pursuant to 10 CFR Parts 30.11, 40.14, 70.14, and Condition 10 of this license, the licensee is exempted from the requirements of 10 CFR Parts 30.35, 40.36 and 70.25 to establish decommissioning financial assurance.
15. Notwithstanding the requirements in 10 CFR Parts 30.32(i), 40.31(j), and 70.22(i), the licensee is not required to establish an emergency plan. Before taking possession of licensed material at a temporary job site in quantities requiring an emergency plan, the licensee shall either:
- (1) Obtain NRC approval of an evaluation demonstrating that an emergency plan is not required pursuant to 10 CFR Parts 30.32(i), 40.31(j), and 70.22(i); or

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- (2) Submit written confirmation to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I, ATTN: Director, Division of Nuclear Materials Safety, 475 Allendale Road, King of Prussia, Pennsylvania 19406, that the licensee personnel have been trained and will follow the provisions of an existing emergency plan approved by the NRC or an Agreement State for the temporary job site.
16. If approved by the Radiation Safety Officer specifically identified in this license, the licensee may take reasonable action in an emergency that departs from conditions in this license when action is immediately needed to protect public health and safety and no action consistent with all license conditions that can provide adequate or equivalent protection is immediately apparent. The licensee shall notify the NRC before, if practicable, and in any case, immediately after taking such emergency action using reporting procedure specified in 10 CFR Part 30.50(c).
17. A. At least 14 days before initiating activities at a temporary job site, the licensee shall notify, in writing, the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I, ATTN: Director, Division of Nuclear Materials Safety, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The notification shall include the following information:
- (1) Estimated type, quantity, and physical/chemical form(s) of material;
 - (2) Specification of site location;
 - (3) Description of project activities including waste management and disposition;
 - (4) Estimated project start date and duration; and
 - (5) Identification of and information on how to contact key project personnel.
- B. Within 30 days of completing activities at each job site location, the licensee shall notify, in writing, the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I, ATTN: Director, Division of Nuclear Materials Safety, 475 Allendale Road, King of Prussia, Pennsylvania 19406, of the temporary job site status and disposition of all licensed material used.
18. The licensee shall maintain records of information important to decommissioning each temporary job site at the applicable job site pursuant to 10 CFR Parts 30.35(g), 40.36(f), and 70.25(g). The records shall be made available to the customer upon request. At the completion of activities at a temporary job site, the licensee shall transfer these records to the customer for retention.
19. Licensed material shall not be used in or on human beings.
20. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.

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- C. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.
- E. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2) and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- G. Tests for leakage and/or contamination, including leak test, sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
21. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
22. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
23. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
06-30556-01

Docket or Reference Number
030-35316

Amendment No. 01

24. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated February 20, 2000
- B. Letter dated May 27, 2000



For the U.S. Nuclear Regulatory Commission

Date September 28, 2004

Sattar Lodhi, Ph.D.
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406

85140782

REPORT OF PROPOSED ACTIVITIES IN NON-AGREEMENT STATES, AREAS OF EXCLUSIVE FEDERAL JURISDICTION, OR OFFSHORE WATERS

(Please read the instructions before completing this form)

Estimated burden per response to comply with this mandatory collection request: 15 minutes. This notification is required so that NRC may schedule inspection of the activities to ensure that they are conducted in accordance with requirements for protection of the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0013), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME OF LICENSEE <i>(Person or firm proposing to conduct the activities described below)</i> 3. ADDRESS OF LICENSEE <i>(Mailing address or other location where licensee may be located)</i>	2. TYPE OF REPORT <input type="checkbox"/> INITIAL <input type="checkbox"/> CHANGE 4. LICENSEE CONTACT AND TITLE 5. TELEPHONE NUMBER <i>(Include Area Code)</i> 6. FACSIMILE NUMBER <i>(Include Area Code)</i>
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7. ACTIVITIES TO BE CONDUCTED UNDER THE GENERAL LICENSE GIVEN IN 10 CFR 150.20

WELL LOGGING LEAK TESTING AND/OR CALIBRATIONS TELETHERAPY/IRRADIATOR SERVICE
 PORTABLE GAUGES OTHER (Specify) ⇒ _____
 RADIOGRAPHY ⇒ _____ REGISTERED AS USER OF PACKAGING (CERTIFICATES OF COMPLIANCE NUMBERS)

8. CLIENT NAME, ADDRESS, CITY/COUNTY, STATE, ZIP CODE	9. ACTUAL PHYSICAL ADDRESS OF WORK LOCATION <i>(Street and Number or other location. Give as complete an address or directions as possible.)</i>
10. CLIENT TELEPHONE NUMBER <i>(Include Area Code)</i>	11. WORK LOCATION TELEPHONE NUMBER <i>(Include Area Code)</i>

12. DATES SCHEDULED	13. NUMBER OF WORK DAYS	14. ADD	15. DELETE	16. LOCATION REFERENCE NUMBER
FROM _____ TO _____				NUMBER TO BE ASSIGNED BY NRC

LIST ADDITIONAL WORK SITES ON SEPARATE SHEET(S) TO INCLUDE ALL INFORMATION CONTAINED IN ITEMS 9-16 ABOVE.

17. LIST RADIOACTIVE MATERIAL, WHICH WILL BE POSSESSED, USED, INSTALLED, SERVICED, OR TESTED
(Include description of type and quantity of radioactive material, sealed sources, or devices to be used.)

18. AGREEMENT STATE SPECIFIC LICENSE WHICH AUTHORIZES THE UNDERSIGNED TO CONDUCT ACTIVITIES WHICH ARE THE SAME, EXCEPT FOR LOCATION OF USE, AS SPECIFIED IN ITEM 9 ABOVE. <i>(One copy of the specific license must accompany the initial NRC Form 241.)</i>	LICENSE NUMBER	STATE	EXPIRATION DATE
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19. CERTIFICATION (MUST BE COMPLETED BY APPLICANT)

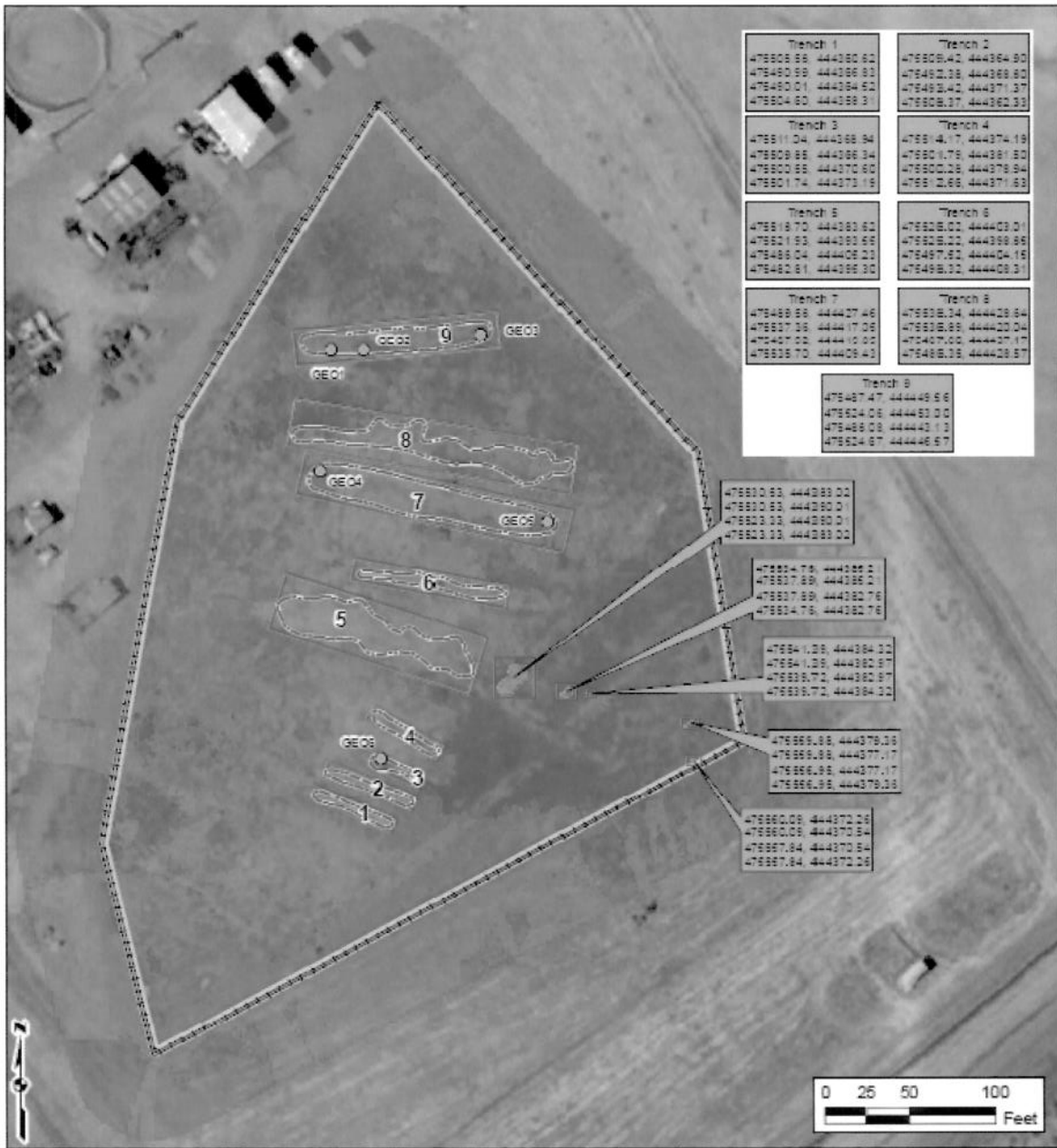
I, THE UNDERSIGNED, HEREBY CERTIFY THAT:

- All information in this report is true and complete.
- I have read and understand the provision of the general license 10 CFR 150.20 printed on the instructions of this form; and I understand that I am required to comply with these provisions as to all byproduct, source, or special nuclear material which I possess and use in non-Agreement States or offshore waters under the general license for which this report is filed with the U.S. Nuclear Regulatory Commission.
- I understand that activities, including storage, conducted in non-Agreement States under general license 10 CFR 150.20 are limited to a total of 180 days in calendar year. With the exception of work conducted in off-shore waters, which is authorized for an unlimited period of time in the calendar year.
- I understand that I may be inspected by NRC at the above listed work site locations and at the Licensee home office address for activities performed in non-Agreement States or offshore waters.
- I understand that conduct of any activities not described above, including conduct of activities on dates or locations different from those described above or without NRC authorization, may subject me to enforcement action, including civil or criminal penalties.

CERTIFYING OFFICER - RSO or Management Representative <i>(Name and Title)</i>	SIGNATURE	DATE
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WARNING: False statements in this certificate may be subject to civil and/or criminal penalties. NRC regulations require that submissions to the NRC be complete and accurate in all material respects. 18 U.S.C. Section 1001 makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

FOR NRC USE ONLY	REVIEWING OFFICIAL. <i>(Typed/Printed Name and Title)</i>	SIGNATURE	DATE	TOTAL USAGE -- DAYS TO DATE
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Trench 1 475808.88 444388.82 475490.88 444388.82 475490.01 444384.82 475804.80 444388.82	Trench 2 475808.40 444384.80 475492.38 444388.80 475492.40 444371.37 475808.37 444382.33
Trench 3 475811.04 444388.84 475809.88 444388.34 475800.88 444370.80 475801.74 444370.18	Trench 4 475814.17 444374.18 475801.79 444381.80 475800.38 444378.84 475812.68 444371.83
Trench 5 475819.70 444388.80 475811.83 444388.88 475488.04 444408.30 475482.81 444388.80	Trench 6 475828.02 444403.01 475823.22 444388.88 475497.82 444404.18 475498.32 444408.81
Trench 7 475838.88 444427.48 475837.38 444417.08 475487.02 444410.00 475838.70 444428.43	Trench 8 475838.34 444428.84 475832.88 444422.04 475487.02 444427.17 475838.32 444428.87

475830.88 444388.82 475830.88 444390.0 475832.32 444390.0 475832.32 444388.82	475834.78 444388.82 475837.88 444388.82 475837.88 444382.76 475834.78 444382.76
475841.28 444388.82 475841.28 444388.82 475835.72 444388.87 475835.72 444388.82	475855.88 444378.38 475855.88 444377.17 475856.88 444377.17 475856.88 444378.38
475860.08 444372.24 475860.08 444370.84 475867.84 444370.84 475867.84 444372.24	

Legend □ Trench/ Surface Soil Removal Area ● Geophysical Anomaly Location --- Area of subsidence or vegetation change ~ Fence Line	Drive Over Gamma Survey (Z - Score) -1.82 - 0.00 0.00 - 3.00 3.00 - 4.00 4.00 - 18.61	Trench/Surface Soil Removal Areas Course 1 Course 2 Course 3 Course 4 Backing, Noting (Course 1) Backing, Noting (Course 2) Backing, Noting (Course 3) Backing, Noting (Course 4)	SURFACE SOIL AND TRENCH EXCAVATION LOCATIONS		
			SITE RW-06 KIRTLAND AIR FORCE BASE ALBUQUERQUE, NEW MEXICO		
			12/08	PROJECT No. 04-5200.06	
			Calibra Services 30 E. Mount Royal Ave. Baltimore, MD 21202	Air Force Center for Engineering and the Environment	

