ASPECTS MANAGEMENT PLAN

ID	Aspect	Subject Matter Expert(s)
1	**Air Emissions**	Jason Braxton

Discussion

Air emission are a significant aspect on Redstone Arsenal. There are approximately 150 significant and 170 insignificant air emission sources. Based on calculations for potential air emission Redstone Arsenal is considered a major source and requires a Title V Permit.

Air emission include the following aspects, air emissions, air emissions of Nitrogen Oxides (NOx), air emissions of Ozone Depleting Chemicals (ODC), air emissions of Particulate Matter (PM), air emissions of Sulfur Oxides (Sox), air emissions Hazardous Air Pollutants (HAPs), air emissions Volatile organic compounds (VOCs).

Emissions is the term used to describe the gases and particles which are put into the air or emitted by various sources.

Air emissions predictions, permitting, and reporting are critical aspects of any facility startup, modification, and everyday operations. Air emission were not subdivided and will not be subdivided until the EMS has matured.

Because of legal requirements and requirements of our Title V Permit, The Arsenal is required to self report most any violation of the laws and regulations or permit requirements. This is the responsibility of the US Army Garrison Redstone.

Air Emissions are an aspect of the environment that could have a significant impact at Redstone Arsenal and will be managed using the Environmental Management System.

What has been done to make people aware of Air Management? To make people aware of air management air compliance inspections are conducted annually and semi-annual self reporting compliance summary reports are required from each source operator.

What can we do to increase awareness?
1. Run adds in the Redstone Rocket describing how You should set your thermostat to get the maximum efficiency out of your HVAC unit thus reducing air emissions.
2. Turn lights off when not in use.
3. Do not leave your car idling - If your not in your vehicle turn it off
4. Tell a compelling story about air pollution and how people were killed.

Donora is a town in Pennsylvania, about 20 miles south of Pittsburgh on the Monongahela river. The town was the scene of the infamous Donora Smog of 1948. Between October 26, and October 31, 1948 an air inversion trapped industrial effluent (air pollution) from the American Steel and Wire plant and Donora Zinc Works. In three days, 20 people died... After the inversion lifted, another 50 died, including Lukasz Musial, the father of baseball great Stan Musial. Hundreds more finished the rest of their lives with damaged lungs and hearts. But another 40 years would pass before the whole truth about Donora's bad air made public-health history.

Smog is a type of air pollution; the word smog is a portmanteau of smoke and fog. The Great Smog of 1952 darkened the streets of London and killed approximately 4,000 people in the short time of 4 days (a further 8,000[12] died from its effects in the following weeks and months). Initially a flu epidemic was blamed for the loss of life. In 1956 the Clean Air Act introduced smokeless zones in the capital. Consequently, reduced sulfur dioxide levels made the intense and

Impacts or possible impacts

- Could expose people, plants and animals to toxic contamination.
- Permitting requirements.
- Requirements of addition control equipment.

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- Operational requirement for additional equipment.
- Adds to Emission Inventory
- Emergency planning necessary
- Property damage (acid rain on buildings, statues, etc)Impacts

Goals

Maintain compliance with all Federal, State, and Army laws and regulations.

Reduce Greenhouse Gases

Prepare baseline of GHG emissions for scope 1 and 2 emissions for FY 2008 and for scope 3 GHG emissions When funding is available.

Report comprehensive GHG emission inventory for FY 2010 by September 31, 2011, we did the GHG emission inventory and Redstone was under the thershold limit (25,000 metric tons CO2-e) for reporting. GHG emissions must be reported annual when you go above the deminius lever of 25,000 and annually thereafter on March 31.

Reduce GHG emissions through reduction of energy intensity by (1) 3% annually through FY 2015 or (2) 30% by FY 2015 (baseline 2003).

Establish agency-wide GHG emission percentage reduction targets by FY 2020 (baseline FY 2008) for:
Scope 1 and scope 2 GHG emissions by FY 2020 (due January 4, 2010).
Scope 3 GHG emissions (due June 2, 2010).

Measurable Targets

Complete the air emission inventory by June 16, 2012 (2 weeks before due date).

Conduct a 100% compliance inspection by August 22, 2012 which is prior to submission of the Annual Compliance Certification (ACC).

Submit all reports, certifications, permits and renew all Temporary Authorizations to Operate (TAO) prior to the date/expiration date.

By September 31, 2011 determine the carbon footprint of Redstone Arsenal. (Need to measure before we determine how much to reduce). We did the GHG emission inventory and Redstone was under the threshold limit (25,000 metric tons CO2-e) for reporting. GHG emissions must be reported annual on March 31 when you go above the de minimis level of 25,000.

Conduct a complete emergency generator inventory by September 1, 2009. (done)

Complete an air EPAS checklist by September 1, 2009. (done)

Report comprehensive GHG emission inventory for FY 2010 by September 31, 2011, and annually thereafter by March 31. (Done)

Reduce GHG emissions through reduction of energy intensity by (1) 3% annually through FY 2015 or (2) 30% by FY 2015 (baseline 2003).

Establish agency-wide GHG emission percentage reduction targets by FY 2020 (baseline FY 2008) for:
Scope 1 and scope 2 GHG emissions by FY 2020 (due September 31).

Letters of Instructions

Legal Requirements

Clean Air Act - 42 U.S.C. 7401 et seq. (1970)

The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes EPA to establish

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National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

One of the goals of the Act was to set and achieve NAAQS in every state by 1975 in order to address the public health and welfare risks posed by certain widespread air pollutants. The setting of these pollutant standards was coupled with directing the states to develop state implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards. The Act was amended in 1977 and 1990 primarily to set new goals (dates) for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines.

Section 112 of the Clean Air Act addresses emissions of hazardous air pollutants. Prior to 1990, CAA established a risk-based program under which only a few standards were developed. The 1990 Clean Air Act Amendments revised Section 112 to first require issuance of technology-based standards for major sources and certain area sources. Major sources are defined as a stationary source or group of stationary sources that emit or have the potential to emit 10 tons per year or more of a hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. An area source is any stationary source that is not a major source.

For major sources, Section 112 requires that EPA establish emission standards that require the maximum degree of reduction in emissions of hazardous air pollutants. These emission standards are commonly referred to as "maximum achievable control technology" or "MACT" standards. Eight years after the technology-based MACT standards are issued for a source category; EPA is required to review those standards to determine whether any residual risk exists for that source category and, if necessary, revise the standards to address such risk.

40 Code of Federal Regulations (CFR) 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, and 97

Clean Air Act Amendments of 1990 (CAAA90). This act, Public Law (PL) 101-549 (42 U.S. Code (USC) 7401-7671q), is currently the Federal legislation regulating the prevention and control of air pollution. It is composed of seven major titles that address various aspects of the national air pollution control program:
1. Title I describes air pollution control requirements for geographic areas in the United States with respect to the National Ambient Air Quality Standards (NAAQS).
2. Title II deals mostly with revised tailpipe emission standards for motor vehicles. These requirements compel automobile manufacturers to improve design standards to limit CO, hydrocarbon, and NOx emissions. Oxygenated gasoline will be required in cities with the worst ozone and CO nonattainment. Reformulated gasoline and gasoline with reduced Reid vapor pressure is used in ozone nonattainment areas.
3. Title III potentially contains the most costly requirement of the CAAA90. The major elements of Title III deal with hazardous air pollutants through control of routine emissions, and contingency planning for accidental releases.
4. Title IV addresses acid deposition control and applies only to commercial utilities that produce electricity for sale.
5. Title V outlines the requirement of having states issue Federally enforceable operating permits to major stationary sources. The permits are designed to enhance the ability of the U.S. Environmental Protection Agency (USEPA), state regulatory agencies, and private citizens to enforce the requirements of the CAAA90. Permits will also be used to specify operation and control requirements for stationary sources.
6. Title VI limits the emissions of chlorofluorocarbons (CFC), halons, and other halogenated chemicals that contribute to the destruction of stratospheric ozone. These requirements closely follow the control strategies recommended in June 1990 by the second meeting or parties to the Montreal Protocol. Also, procurement of ozone depleting substances is restricted by Federal agency acquisition policies
7. Title VII describes civil and criminal penalties that may be imposed for violation of new and existing air pollution control requirements. This title also gives authority to the USEPA to issue field citations for many types of violations.

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The Department of Justice, Office of Legal Counsel decision issued 16 July 1997 stipulates the USEPA is administratively authorized under the CAA to assess civil penalties against Federal agencies for violations of the CAA. States on the other hand, do not have the authority to assess civil penalties against Federal agencies for violations of the CAA [Revised June 1998]. Because of this all state violations are sent to the US EPA Region 4 for enforcement.

The Federal Employees Clean Air Incentives Act – This act, dated 2 December 1993 (Public Law 103-172), was designed to improve air quality and reduce traffic congestion by having Federal agencies encourage their employees to commute by means other than single-occupancy vehicles. The legislation permitted the head of each agency to establish programs to promote initiatives such as transit passes, furnishing space, facilities, or services to bicyclists, and provide nonmonetary incentives such alternative work schedules, flextime, telework, flexiplace, and related parking and shuttle arrangements [Added April 2005].

EO 13150, Federal Workforce Transportation – This EO, dated 21 April 2000, was enacted to help reduce Federal employees' contribution to traffic congestion and air pollution and to expand their commuting alternatives. Federal agencies are required to implement mass transportation fringe benefit programs under this EO [Added April 2005].

Executive Order (EO) 13423, Strengthen Federal Environmental, Energy, and Transportation Management. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation’s energy security and environmental performance by achieving goals outlined in the EO. In relation to air emissions management, if an agency operates a fleet of at least 20 motor vehicles, the agency, relative to agency baselines for fiscal year 2005 [Added January 2007]:
1. reduces the fleet’s total consumption of petroleum products by 2 percent annually through the end of fiscal year 2015,
2. increases the total fuel consumption that is non-petroleum-based by 10 percent annually, and
3. uses plug-in hybrid (PIH) vehicles when PIH vehicles are commercially available at a cost reasonably comparable, on the basis of life-cycle cost, to non-PIH vehicles.
Additionally, agencies must reduce greenhouse gas emissions of the agency, through reduction of energy intensity by:
1. 3 percent annually through the end of fiscal year 2015, or
2. 30 percent by the end of fiscal year 2015, relative to the baseline of the agency’s energy use in fiscal year 2003.
This EO revokes the following EOs:
1. Executive Order 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition of September 14, 1998;
2. Executive Order 13123, Greening the Government through Efficient Energy Management of June 3, 1999;
3. Executive Order 13134, Developing and Promoting Biobased Products and Bioenergy of August 12, 1999, as amended;
4. Executive Order 13148, Greening the Government through Leadership in Environmental Management of April 21, 2000; and
5. Executive Order 13149, Greening the Government through Federal Fleet and Transportation Efficiency of April 21, 2000.

EO 13432: Cooperation among Agencies in Protecting the Environment With Respect to Greenhouse Gas Emissions from Motor Vehicles, Nonroad Vehicles, and Nonroad Engines. This EO, dated 14 May 2007, endorses the coordinated and effective exercise of the authorities of the President and the heads of the Department of Transportation, the Department of Energy, and the Environmental Protection Agency to protect the environment with respect to greenhouse gas emissions from motor vehicles, nonroad vehicles, and nonroad engines, in a manner consistent with sound science, analysis of benefits and costs, public safety, and economic growth [Added July 2007].

C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

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CAA Section 118(a) requires that each agency and employee of the Federal government comply with all Federal, State, interstate and local requirements respecting the control and abatement of air pollution in the same manner and the same extent as any non-governmental entity [Added April 2005].

The primary mechanisms regulating air pollutant emissions are the state air quality regulations. These regulations will normally follow the Federal guidelines for state programs and will have many similar features. However, depending on the type and degree of air pollutant problems within the state/region, the individual regulations will vary. As an example, ozone problems are widespread in California; therefore, various local authorities in that state have stringent VOC emission requirements. The State of North Dakota has no such problem and, therefore, has fewer and less stringent VOC regulations.

A permit is normally required for new, expanded, or modified sources of air pollutants. There are Federal, state, and local permits required for various sources. Large sources, and activities as a whole, may require a permit to operate. States review permit applications for construction or operation of many sources. Open burning permits are typically handled locally.

Some state regulations apply directly to some activities and operations without requiring a permit. At a minimum, state regulations should be reviewed for the following activities:
1. fugitive dust emissions
2. control of particulate emissions from the transportation of refuse or materials in open vehicles
3. certification requirements for boiler operators
4. emissions and emission control requirements for the operation of existing fossil fuel-fired steam generators
5. open burning
6. vehicle exhaust emissions testing
7. spray painting of vehicles, buildings, or furniture
8. certification of vehicles transporting VOC liquids
9. paving of roads and parking lots
10. toxic air pollutants
11. operation of cold cleaners, degreasers, and open-top vapor degreasers
12. vapor control requirements for fuel pumps.

Facility administrators are responsible for ensuring that all federally owned government vehicles subject to a state I/M program are tested/inspected in accordance with the appropriate I/M program requirements. As stated in Section I, the government vehicle must comply with the I/M program in effect for the area where the vehicle is primarily operated. The program area where the vehicle is primarily operated is usually the program area where the government vehicle is garaged. Thus, no two program areas can compel testing of any one government vehicle. If the Federal agency or facility wishes to submit a government vehicle to I/M program requirements in a program area other than (and in lieu of) the one where the government vehicle is garaged, the Federal agency, or facility should retain mileage records that substantiates the program area in which the government vehicle primarily operates [Added April 2005].

In relation to vehicle emissions testing of government vehicles, under CAA section 118(c) each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government shall comply with all applicable provisions of a valid inspection and maintenance program established under the provisions of subpart 2 of part D or subpart 3 of part D except for such vehicles that are considered military tactical vehicles. (NOTE: subpart 2 of part D concerns additional provisions for ozone nonattainment areas and subpart 3 of part D concerns additional provisions for CO nonattainment areas.) Each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government having jurisdiction over any property or facility shall require all employees which operate motor vehicles on the property or facility to furnish proof of compliance with the applicable requirements of any vehicle inspection and maintenance program established under the provisions of subpart 2 of part D or subpart 3 of part D for the State in which such

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property or facility is located (without regard to whether such vehicles are registered in the State). The installation shall use one of the following methods to establish proof of compliance [Added April 2005].
(1) presentation by the vehicle owner of a valid certificate of compliance from the vehicle inspection and maintenance program;
(2) presentation by the vehicle owner of proof of vehicle registration within the geographic area covered by the vehicle inspection and maintenance program (except for any program whose enforcement mechanism is not through the denial of vehicle registration);
(3) another method approved by the vehicle inspection and maintenance program administrator [42 U.S.C. 7418].

Alabama State regulations
ADEM Admin. Code r.335-3
Division 3
Air Pollution Control Program
http://www.adem.state.al.us/regulations/regulations.htm
(effective date - September 30, 2008)
This Division prescribes regulations to protect and enhance the public health and welfare through the development and implementation of coordinated statewide programs for the prevention, abatement, and control of air pollution

Other Requirements -

A. U.S. Army Regulations (ARs) and Policies
AR 200-1, Environmental Protection and Enhancement. This AR, effective 27 December 2007, supersedes AR prior versions of AR 200-1. In relation to air resources is the policy of the Army to [Revised October 2007]:
1. Comply with applicable Federal, State and local air quality regulations, permit requirements, and overseas Final Governing Standards (FGS).
2. Identify and implement cost-effective pollution prevention measures that will reduce toxic or criteria air emissions.
3. Eliminate dependency on ozone depleting substances (ODS).
The major program goal for air resources is to achieve and maintain air quality standards to protect human health and the environment, while minimizing mission impacts.

AR 200-1 addresses environmental responsibilities of all Army organizations and agencies. Specifically, this regulation applies to:
1. Active Army, Army National Guard/ Army National Guard of the United States, and United States Army Reserve.
2. Tenants, contractors, and lessees performing functions on real property under jurisdiction of the Department of the Army (for example, Army and Air Force Exchange Service (AAFES), Defense Commissary Agency (DECA)).
3. Activities and operations under the purview of the Army even when performed off installations.
4. Formerly used defense sites (FUDS) and other excess properties managed by the Army.

The terms “Army environmental programs” and “Army Environmental Program” must be read in context. All Army organizations, regardless of their organizational level or chain of command, have environmental responsibilities as part of their functions; these environmental responsibilities must be incorporated into the planning, programming, budgeting, and execution of their respective missions. Each organization must program and fund its environmental activities from the appropriate account of the proponent’s operating budget, not necessarily an environmental account. Being mindful of the context in which requirements are articulated will help define the scope of the “program” being addressed and will preclude inappropriate resourcing decisions or expectations.

Contracts to operate Government-owned facilities will reference AR 200-1 and will designate by specific citation the applicable provisions [Added October 2007].

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Training Requirements

All boiler, wood cyclone collector operating personnel conducting opacity emission must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources. This includes training on reading the opacity of smoke coming out of a stack and annually passing a test showing the ability to correctly read the stack. The training records are kept both the individual and their supervisor.

To protect the ozone layer, no person repairing or servicing motor vehicles for payment can service a motor vehicle air-conditioner (MVAC) in any way that affects the refrigerant unless they have been trained and certified and are using approved equipment.

Additionally, persons who maintain, service, or repair appliances, except MVACs, and persons who dispose of appliances, except for small appliances, room air conditioners, MVACs, and MVAC-like appliances are required to be certified through an approved technician certification program. The servicing of appliances containing CFCs and halons is required to be done in a manner to prevent emissions (40 CFR 82.34(a), 82.34(b), 82.42(a) through 82.42(c), and 82.150 through 82.166) [Revised December 1997].

Technicians who test, maintain, service, repair or dispose of halon-containing equipment are required to meet specific training requirements. (40 CFR 82.270(c))[Added March 1998]. The training records are kept both the individual and their supervisor.

Awareness

EMD web Page:
Home Page
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/air/clean%20air.html
Terry Hazle checked the page on 11/14/2011 and it is OK for awareness.

Newspaper:
Title: Redstone Chips in to Reduce Air Pollution
Date: 17 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\003.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Title V, Major Source Operating Permit

The following Annual and Semiannual Title V Permit Compliance Summary Reports for:
- Small Fuel Oil Boilers
- Large Fuel Oil Boilers
- Small Natural Gas Boilers
- Large Natural Gas Boilers
- Woodworking Operations and Carpentry Shops
- Gasoline Dispensing Facilities
- Bulk Gasoline Plant
- Refrigerants

- Fuel Oil Sulfur Content
- Emergency Diesel Generators

Air Permit Database – this database is used to track all of the various stages of air permits and all Title V reports due to the Alabama Department of Environmental Management and the Environmental Protection Agency.

Boiler Database – this database is used by the Installation Support Contractor (Chugach) Lead Boiler Mechanic to track recordkeeping requirements associated with the boilers.

Required Permits

Title V - Major Source Operating Permit
Issuance Date: August 4, 2008
Effective Date: July 7, 2008
Expiration Date: July 6, 2013

The Air Program Manager maintains a database to track all permit application.

Currentally working on a Title V modification.

Required Plans

Risk Management Plan for Water Treatment Plant 1
Expiration Date: December 15, 2010
The Risk Management Plan Manager is responsible for keeping this plan current.
Risk Management Plan Manager and the EMD CAA Manager keep a current copy of this plan.

Risk Management Plan for Water Treatment Plant 3
Expiration Date: January 19, 2011
The Risk Management Plan Manager is responsible for keeping this plan current.
Risk Management Plan Manager and the Environmental Management Division (EMD) Clean Air Act Manager (CAA) keeps a current copy of this plan.

Required Records

Air Records and Reports

General

1. Compliance Certification - A compliance certification shall be submitted annually by September 5th of each year.
(a) The compliance certification shall include the following:
(1) The identification of each term or condition of this permit that is the basis of the certification;
(2) The compliance status;
(3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Record Keeping Requirements);
(4) Whether the method(s) or other means used to assure compliance provided continuous or intermittent data;
(5) Such other facts as the Department may require to determine the compliance status of the source;
(b) The compliance certification shall be submitted to:
Alabama Department of Environmental Management
Air Division
P.O. Box 301463
Montgomery, AL 36130-1463
(c) and to: Air and EPCRA Enforcement Branch EPA Region IV 61 Forsyth Street, SW Atlanta, GA 30303

2. Reporting Requirements
(a) Reports to the Department of any required monitoring shall be submitted at least every 6 months. All instances of deviations from permit requirements must be clearly identified in said reports. All required reports must be certified by a responsible official consistent with Rule 335-3-16-.04(9).

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(b) Deviations from permit requirements shall be reported within 48 hours or 2 working days of such deviations, including those attributable to upset conditions as defined in the permit. The report will include the probable cause of said deviations, and any corrective actions or preventive measures that were taken.

3. Emission Testing Requirements - Each point of emission which requires testing will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised. The Air Division must be notified in writing at least 10 days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations. To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

(a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.

(b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedures requires probe cleaning).

(c) A description of the process(es) to be tested including the feed rate, any operating parameters used to control or influence the operations, and the rated capacity.

(d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances. 4. Air Emission Inventory - An Air Emission Inventory and Annual emission fees shall be remitted each year according to the fee schedule in ADEM Admin. Code R. 335-1-7-.04.

4. Submission of Information:

(a) The permittee must submit to the Department, within 30 days or for such other reasonable time as the Department may set, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon receiving a specific request, the permittee shall also furnish to the Department copies of records required to be kept by this permit.

5. Certification of Truth, Accuracy, and Completeness:

(a) Any application form, report, test data, monitoring data, or compliance certification submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

6. Equipment Maintenance or Breakdown:

(a) In the case of shutdown of air pollution control equipment (which operates pursuant to any permit issued by the Director) for necessary scheduled maintenance, the intent to shut down such equipment shall be reported to the Director at least twenty-four (24) hours prior to the planned shutdown, unless such shutdown is accompanied by the shutdown of the source which such equipment is intended to control. Such prior notice shall include, but is not limited to the following:

(i) Identification of the specific facility to be taken out of service as well as its location and permit number;

(ii) The expected length of time that the air pollution control equipment will be out of service;

(iii) The nature and quantity of emissions of air contaminants likely to occur during the shutdown period;

(iv) Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period;

(v) The reasons that it would be impossible or impractical to shut down the source operation during the maintenance period.

(b) In the event that there is a breakdown of equipment or upset of process in such a manner as to cause, or is expected to cause, increased emissions of air contaminants which are above an applicable standard, the person responsible for such equipment shall notify

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the Director within 24 hours or the next working day and provide a statement giving all pertinent facts, including the estimated duration of the breakdown. The Director will be notified when the breakdown has been corrected.

7. Recordkeeping Requirements:
(a) Records of required monitoring information of the source shall include the following:
(i) The date, place, and time of all sampling or measurements;
(ii) The date analyses were performed;
(iii) The company or entity that performed the analyses;
(iv) The analytical techniques or methods used;
(v) The results of all analyses; and
(vi) The operating conditions that existed at the time of sampling or measurement.
(b) Retention of records of all required monitoring data and support information of the source for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by the permit.

8. Chemical Accidental Prevention Provisions
If a chemical listed in Table 1 of 40 CFR Part 68.130 is present in a process in quantities greater than the threshold quantity listed in Table 1, then:
(a) The owner or operator shall comply with the provisions in 40 CFR Part 68.
(b) The owner or operator shall submit one of the following:
(i) A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR Part 68 § 68.10(a) or,
(ii) A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan.

9. Title VI Requirements (Refrigerants)

(a) The responsible official shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the US EPA and the Department as required.

Woodworking Operations and Carpentry Shops Buildings 3615, 3775N, and 5412

1. Records of the required weekly visual inspections shall be maintained and should be readily available for inspection for a period of five years. These records shall include the date and results of the visual inspections. If visible emissions greater than normal are observed, the records shall include the date and time of the initial observation, a description of the corrective actions taken, the date and time of the initial corrective action attempt, and the results of the follow-up visual inspection. During weeks that this source is not in operation and this weekly visible observation is not required, it shall be recorded that the source was not in operation.

Gasoline Dispensing Facilities Buildings 3234, 3639, and 4828

1. The Gasoline Dispensing Facilities Manager shall maintain written records of the monthly throughput quantities in gallons in these units for a minimum of five years after the date on which the documents were made. These records will be made available to the Department upon request.

Bulk Gasoline Plant – Tank Farm

1. Records of the amount of gasoline loaded to and unloaded from the bulk gasoline plant shall be maintained.

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Small Natural Gas Boilers (Appendix A in Title V Permit)

1. These sources are subject to no additional specific requirements other than those listed in the General Permit Provisos of the Title V Permit.

Small Fuel Oil Boilers (Appendix B in Title V Permit)

1. Records of the sulfur content of the fuel oil combusted must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
2. Records of total rolling 12-month fuel oil consumption for Boilers B-7291-1, B-7105-1, B-7105-2, B-7770-2, Portable Boiler No. 3 (CB-200-100), and Portable Boiler No. 4 (CB-200-100) must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
3. Records of total rolling 12-month fuel oil consumption for boilers B-8977-1, B-8977-2, and B-8028-1 must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
4. Records of the required daily visual inspections shall be maintained and shall be readily available for inspection for a period of 5 years after the date of the observation. These records shall include the date and results of the visual inspections. If visible emissions greater than normal are observed, the records shall include the date and time of the initial observation, a description of the corrective actions taken, the date and time of the initial corrective action attempt, and the results of the follow-up inspection.
5. Records of boiler inspections and maintenance performed shall be maintained for a period of at least five years following the inspection or maintenance.
6. Boilers 4832-1, 4832-2, 5563-1, 5563-2, 5564-1, 6101, 7701, 7804-3, 8716-2, Portable Boiler No.1, Portable Boiler No. 2 and Clamshell Boiler have no additional requirements other than those in the General Provisos.

Large Natural Gas Boilers (Appendix C in Title V Permit)

1. Records of the daily fuel usage must be kept in a permanent form suitable for these boilers for inspection. The records shall be retained for at least five (5) years from the date of generation and available upon request.
2. Records of boiler inspections and maintenance performed on these boilers shall be maintained for a period of at least five years following the inspection or maintenance.

Large Fuel Oil Boilers (Appendix D in Title V Permit)

1. Records of the sulfur content of the fuel oil combusted must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
2. Records of monthly and rolling 12-month fuel oil consumption for boilers B-8977-1, B-8977-2, and B-8028-1 must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
3. Records of total rolling 12-month fuel oil consumption for Boilers B-7291-1, B-7105-1, B-7105-2, B-7770-2, Portable Boiler No. 3 (CB-200-100), and Portable Boiler No. 4 (CB-200-100) must be kept in a form suitable for inspection. These records shall be retained for at least five years following the date of generation and shall be made available upon request.
4. Records of the required daily visual inspections shall be maintained and shall be readily available for inspection for a period of 5 years after the date of the observation. These records shall include the date and results of the visual inspections. If visible emissions greater than normal are observed, the records shall include the date and time of the initial observation, a description of the corrective actions taken, the date and time

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of the initial corrective action attempt, and the results of the follow-up inspection.
5. Records of boiler inspections and maintenance performed shall be maintained for a period of at least five years following the inspection or maintenance.
6. Records of the daily fuel usage must be kept in a permanent form suitable for inspection. The records shall be retained for at least two (5) years from the date of generation and available upon request.
7. Reports containing the following information must be submitted to the Department on a semi-annual basis:

- Calendar dates covered in the reporting period,
- If compliance with the fuel oil sulfur content limit is determined based on certification by the fuel oil supplier, the report must include the name of the supplier, and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c. In addition, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period,
- If compliance with the fuel oil sulfur content limit is determined based on shipment fuel sampling, the report must include each 30-day average sulfur content calculated during the reporting period, ending with the last 30-day period,
- Any reasons for non-compliance with the fuel oil sulfur content limit, and
- A description of any corrective action taken.

The compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. The compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

Peak Shaving Generator System

1. The source is subject to the applicable requirements of 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines to include the Notification, Reporting, and Recordkeeping requirements in §63.6645(a,g,h), §63.6650(a-f), §63.6655(a,b,d), and §63.6660(a,b,c) to include Table 6 and Table 7.
2. The operator shall keep records of the monthly pressure drop measurements and the catalyst inlet temperature data for a period of at least five (5) years. These records shall be kept in a form suitable for inspection and must be made available immediately upon request.
3. The EMD CAA Manger shall submit a semi-annual Compliance Report in accordance with 40 CFR 63.6650(b).
4. The operator shall submit an immediate startup, shutdown, and malfunction report if actions addressing a startup, shutdown, or malfunction were inconsistent with the SSMP. This report must contain a description of the actions taken for the event, and must be submitted by fax or telephone within two (2) working days after starting actions inconsistent with the SSMP. A report in written format and containing the information found in 63.10(d)(5)(ii) must be submitted within seven (7) working days after the end of the event unless alternative arrangements have been made with the Department.
5. Records of monthly and rolling twelve-month total hours of operation for each generator, and rolling twelve-month total hours of operation for all four generators shall be kept in a form suitable for inspection for a period of at least 5 years following the date of generation, and shall be made available immediately upon request.
6. Records of monthly and rolling 12-month total natural gas usage shall be kept in a form suitable for inspection for a period of at least 5 years following the date of generation, and shall be made available immediately upon request.

Monitoring/Measuring Requiremens

Federally Enforceable Provisos

Compliance:

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1. The permittee shall comply with all conditions of ADEM Admin. Code 335-3. Noncompliance with this permit will constitute a violation of the Clean Air Act of 1990 and ADEM Admin. Code 335-3 and may result in an enforcement action; including but not limited to, permit termination, revocation and reissuance, or modification; or denial of a permit renewal application by the permittee.

2. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.

3. Operation of Capture and Control Devices:

(a)All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.

4. Obnoxious Odors

(a) This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.

5. Fugitive Dust:

(a) Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

(b) Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne:

By the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;

(c) By reducing the speed of vehicular traffic to a point below that at which dust emissions are created;

By paving;

(d) By the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions; or

(e) By any combination of the above methods which results in the prevention of dust becoming airborne from the road surface.

(f) Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

6. Emission Testing Requirements:

(a) Each point of emission which requires testing will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.

(b) The Air Division must be notified in writing at least 10 days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

(c) To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

(d) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.

(e) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedures requires probe cleaning).

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(f) A description of the process(es) to be tested including the feed rate, any operating parameters used to control or influence the operations, and the rated capacity.
(g) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.
(h) A pretest meeting may be held at the request of the source owner or the Air Division. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.
(i) All test reports must be submitted to the Air Division within 30 days of the actual completion of the test unless an extension of time is specifically approved by the Air Division.

7. Payment of Emission Fees

(a) Annual emission fees shall be remitted each year according to the fee schedule in ADEM Admin. Code R. 335-1-7-.04.

8. Title VI Requirements (Refrigerants)
(a) Any facility having appliances or refrigeration equipment, including air conditioning equipment, which use Class I or Class II ozone-depleting substances as listed in 40 CFR Part 82, Subpart A, Appendices A and B, shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82, Subpart F.
(b) No person shall knowingly vent or otherwise release any Class I or Class II substance into the environment during the repair, servicing, maintenance, or disposal of any device except as provided in 40 CFR Part 82, Subpart F.

9. Visible Emissions
a Unless otherwise specified in the Unit Specific provisos of this permit, any source of particulate emissions shall not discharge more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate emissions greater than 40%. Opacity will be determined by 40 CFR Part 60, Appendix A, Method 9, unless otherwise specified in the Unit Specific provisos of this permit.

Provisos for Woodworking Operations and Carpentry Shops:
B3615-1, B3775N-1, B5412-1

1. Emission Monitoring:

(a) As an indicator of compliance with the particulate and opacity emission limits, weekly visual observations of the stack shall be conducted by personnel certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If visible emissions greater than normal are observed, the facility shall investigate and initiate any necessary corrective actions within 4 hours. After any corrective actions, an additional observation shall be performed in order to verify that emissions are reduced to normal.
(b) In the event that a week goes by without the operation of a source, a weekly visual inspection shall not be required.

Provisos for Gasoline Dispensing Facilities - Stage 1:
3234-A, 3234-B, 3234-C, 3639-A, 3639-B, 4828

1. Emission Standards:
(a) The Manager shall not transfer, cause , or allow the transfer of gasoline from any gasoline tank truck into these units unless the tanks are equipped with a submerged fill pipe and the vapors displaced form the storage tanks during filling are processed by vapor control system in accordance with ADEM Admin. Code R. 335-3-6-.07(4).
(b) The Manager shall not permit the transfer of gasoline between a gasoline tank truck and these units unless the gasoline tank truck complies with ADEM Admin. Code R. 335-3-6-.20 and the vapor control system is connected and operating in accordance with ADEM Admin

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Code R. 335-3-6-.07(4).
(c)The Manager shall not cause or allow gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation of the gasoline to the atmosphere.

2. Emission Monitoring:
(a) The Manager shall inspect these units during each loading and unloading of tank truck or trailer for visible liquid leaks.

Provisos for Bulk Gasoline Plant:
5697

1. Emission Standards:
(a) The Manager shall not permit the unloading of gasoline into stationary storage tanks unless each tank is equipped with a vapor balance system as described in ADEM Admin. Code R. 335-3-6-.05(6) and approved by the director; and
(i) each tank is equipped with a submerged fill pipe, approved by the Director; or
(ii) each tank is equipped with a fill line whose discharge opening is not over 18 inches from the bottom of the tank.
(b) The Manager shall not permit the unloading of tank trucks or trailers at a bulk gasoline plant unless each tank truck or trailer is equipped with a vapor balance system as described in ADEM Admin. Code R. 335-3-6-.05(6) and complies with ADEM Admin. Code R. 335-3-6-.20(3)
(c)The Manager shall not allow the transfer of gasoline between tank truck or trailer and stationary storage tank unless:
(i) The transfer is conducted in accordance with the “Emissions Standards” above, and
(ii) The vapor balance system is in good working order and is connected and operating; and
(iii) Gasoline tank truck or trailer hatches are covered at all times during unloading operations; and
(iv) There are no leaks in the tank trucks’ and trailers’ pressure/vacuum relief valves and hatch covers, or the truck tanks or storage tanks, or associated vapor and liquid lines during unloading; and
(v) The pressure relief valves on above-ground storage vessels and tank trucks or trailers are set to release at no less than 4.8 kPA (0.7 psia) or the highest possible pressure (in accordance with state or local fire codes or the National Fire Prevention Association guidelines); and
(vi) The gasoline truck or trailer has a valid Department Air Sticker as required by Rule 335-3-6-.20(4) attached and visibly displayed.
(d) The manager shall not permit the loading of gasoline into tank trucks or trailers that are returning with vapors from gasoline dispensing facilities affected by ADEM Admin. Code R. 335-3-6-.07 unless each tank truck or trailer and the stationary storage tank is equipped with a vapor balance system as described in ADEM Admin. Code R. 335-3-6-.06(6) and complies with ADEM Admin. Code 335-3-6-.20(3) and
(i) equipment is available at the bulk gasoline plant to provide for the submerged filling of each tank truck or trailer; or
(ii)each tank truck or trailer is equipped for bottom filling.
(e) The manager shall not permit the disposal of waste gasoline in sewers, open containers, or in a manner that would result in evaporation.

Provisos for Small Natural Gas Boilers (Appendix A):
Absorbers 4543-3, 4543-4 Boilers 112-1, 112-2, 115-1, 130, 131, 133, 135, 376, 1500, 3145, 3148, 3220, 3328, 3424, 3443, 3467, 3623, 3707-1, 3707-2, 4140, 4543-1, 4543-2, 4546, 4816, 4835, 5298-1, 5298-2, 6263, 6264, 7010-1, 7010-2, 7011, 7012, 7153-1, 7153-2, 7549-1, 7549-2, 7631, 7650, 7741-1, 7741-2, 7804-2 Hot Water Heaters 130, 3145, 3145-2, 3148, 3224

1. Emission Standards:
(a) These boilers shall burn natural gas only.

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2. Emission Monitoring:
(a) These sources are subject to no additional specific requirements other than those listed in the General Permit Provisos.

Provisos for Small Fuel Oil Boilers (Appendix B):
Boilers 115-2, 4100-1, 4100-2, 4832-1, 4832-2, 5540, 5563-ISP-1, 5564-ISP-2, 5564-ISP-3, 6101, 6260, 7291-2, 7770-1, 7770-2, 7804-1, 7804-3, 7855-1, 7855-2, 8716, 8874-1, 8874-2, 8977-1, 8977-2, Portable 1, Portable 2, Portable 3, Portable 4, Clamshell

1. Emission Standards:
(a) These units shall burn only natural gas and No. 2 fuel oil. The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
(b) Boilers B-8977-1, B-8977-2, and B-8028-1 shall consume no more than a total of 1,100,000 gallons of No. 2 fuel oil in any consecutive 12-month period.
(c) Boilers B-7291-1, B-7105-1, B-7105-2, B-7770-2, Portable Boiler No. 3 (CB-200-100), and Portable Boiler No. 4 (CB-200-100) shall consume no more than a total of 1,100,000 gallons of No. 2 fuel oil in any consecutive 12-month period.

2. Emission Monitoring:
(a) Periodic inspections of these units shall be performed once every year to include inspections of tubes, burners, and control valves, to ensure the boilers operate as designed.
(b) Daily visual observations of the stacks associated with these units shall be conducted by personnel certified in accordance with 40 CFR 60, Appendix A, Method 9, if fuels other than natural gas are being utilized. If visible emissions greater than normal are observed, the facility shall initiate any necessary corrective actions. After any corrective actions, an additional observation shall be performed in order to verify that emissions are reduced to normal.
(c) Boilers 4832-1, 4832-2, 5563-1, 5563-2, 5564-1, 6101, 7701, 7804-3, 8716-2, Portable Boiler No.1, Portable Boiler No. 2, and Clamshell Boiler have no additional requirements other than those in the General Provisos.

Boilers 4832-1, 4832-2, 5563-1, 5563-2, 5564-1, 6101, 7701, 7804-3, 8716-2, Portable Boiler No.1, Portable Boiler No. 2 and Clamshell Boiler
1. Have no additional requirements other than those in the General Provisos.

Provisos for Large Natural Gas Boilers (Appendix C):
5221-1, 5221-2, 7668-1, 7668-2, 7668-4

1. Emission Standards:
(a) These boilers shall burn natural gas only.

2. Emission Monitoring:
(a) These boilers shall perform periodic inspections at least once every year to include inspections of tubes, burners, and control valves, to ensure the boilers operate as designed.

Provisos for Large Fuel Oil Boilers (Appendix D):
7105-1, 7105-2, 7291-1, 8028-1, 8028-2

1. Emission Standards:
(a) These units shall burn only natural gas and No. 2 fuel oil. The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
(b) Boilers B-8977-1, B-8977-2, and B-8028-1 shall consume no more than a total of 1,100,000 gallons of No. 2 fuel oil in any consecutive 12-month period.
(c) Boilers B-7291-1, B-7105-1, B-7105-2, B-7770-2, Portable Boiler No. 3 (CB-200-

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100), and Portable Boiler No. 4 (CB-200-100) shall consume no more than a total of 1,100,000 gallons of No. 2 fuel oil in any consecutive 12-month period.

2. Emission Monitoring

(a) Periodic inspections of this unit shall be performed once every year to include inspections of tubes, burners, and control valves, to ensure the boilers operate as designed.

(b) Daily visual observations of the stack associated with this unit shall be conducted by personnel certified in accordance with 40 CFR 60, Appendix A, Method 9, if fuels other than natural gas are being utilized. If visible emissions greater than normal are observed, the facility shall investigate and initiate any necessary corrective actions within 4 hours. After any corrective actions, an additional observation shall be performed in order to verify that emissions are reduced to normal.

Provisos for Primary #2 Peak Shaving Generator System (Consisting of Four, 4-Stroke Lean Burn Natural Gas Fired 1085 hp Generators, Each Equipped with Oxidation Catalytic Silencer):

1. Applicability:

(a) The peak shaving generator system is subject to the applicable requirements of 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.
These sources are subject to the applicable requirements of Subpart A of 40 CFR Part 63, "General Provisions" as listed in Table 1 of 40 CFR 63 Subpart ZZZZ.

2. Emission Standards:

(a) The facility must reduce CO emissions by 93 percent or more; or limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O2.

(b) The facility must maintain the catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent loads plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and maintain the temperature of each stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450°F and less than or equal to 1350°F.

(c) The total hours of operation for the four generators shall not exceed 2500 hours in any consecutive 12-month period.

(d) The total natural gas usage for the four generators shall not exceed 19,000,000 ft3 in any consecutive 12-month period.

(e) The total NOx emissions from each generator shall not exceed 4.08 lb/MMBtu, as determined by methods found in 40 CFR 60, Appendix A.

3. Emission Monitoring:

(a) The pressure drop across the catalyst must be measured at least once per month.

(b) The operator must install and maintain a continuous parameter monitoring system for each RICE in order to continuously monitor the catalyst inlet temperatures in accordance with 40 CFR 63.6625(b). The catalyst inlet temperature data must be reduced to 4-hour rolling averages.

(c) The operator shall ensure the immediate replacement or repair of continuous monitoring system (CMS) parts to correct "routine" or otherwise predictable CMS malfunctions. The permittee shall keep the necessary parts for routine repairs of the affected equipment readily available.

(d) CO emission tests are to be conducted semiannually following the date of initial compliance testing. After 2 consecutive compliant tests, the Permittee may reduce the frequency of testing to annually. If the results of any subsequent test indicate that a RICE is not in compliance, or if the Permittee deviates from any operating limitation, semi-annual testing will be resumed.

Provisos for Emergency Diesel Generators (Appendix E):
111, S-120, 3685, 4193

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1. Applicability:
(a) These units are subject to the applicable requirements of 40 CFR Part 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines".

2. Emission Standards:
(a) These units must be certified according to 40 CFR Part 89 for the same model year and maximum engine power.
(b) These units must be installed and configured according to the manufacturer's specifications.
(c) The permittee must install a non-resettable hour meter prior to startup of engines.
(d) These units must use diesel fuel that meets the requirements of 40 CFR 80.510(a).
(e) Beginning October 1, 2010, these units must use diesel fuel that meets the requirements of 40 CFR 80.510(b).
(f) The facility must operate and maintain these units according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.
(g) Any operation of these units, other than emergency operation, maintenance, and testing is prohibited. Maintenance checks and readiness testing is limited to 100 hours per year.

3. Emission Monitoring:
(a) This source is subject to no additional specific requirements other than those listed in the General Permit Provisos.
Recordkeeping and Reporting Requirements
(b) This source is subject to no additional specific recordkeeping and reporting requirements other than those listed in the General Permit Provisos.

Link to 2009 Air EPAS:

T:\DATA\M. Wassell Air Files\2009 Air EPAS.xls

Calibration

There is no equipment requiring calibration under Air Emissions Aspects.

What Significant Impacts Are

Emission increases that cause or contribute to a violation of any National Ambient Air Quality Standard (NAAQS) or adversely impact Air Quality Related Values (AQRVs) (such as visibility) would be a significant impact to the environment.

Any air emission source falling under a National Emissions Standards for Hazardous Air Pollutants (NESHAPS). These are emissions standards set by the USEPA for an air pollutant not covered by National Ambient Air Quality Standard (NAAQS) that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness. The standards for a particular source category require the maximum degree of emission reduction that the EPA determines to be achievable, which is known as the Maximum Achievable Control Technology (MACT). These standards are authorized by Section 112 of the Clean Air Act and the regulations are published in 40 CFR Parts 61 and 63. Any air emission that exceeds these standards would be a significant impact to the environment.

Any emission source that the state considers Trivial or insignificant (Criteria Pollutant emissions < 5 TPY, Hazardous Air Pollutants emissions < 1000 lb/yr) would not be a significant impact to the environment.

Any air emission source that the state will permit, either with or without control equipment, which meets the Prevention of Significant Deterioration (PSD) of Air Quality standards (every case is different depending upon the source and the emissions) would not be a significant impact to the environment.

Non Compliance with Clean Air Act or related regulations.

Responsible Person(s)

Garrison Commander Responsibilities per AR200-1

a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of
n. installation-wide corrective actions.
o. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.
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q. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14.
r. Maintain a public affairs program that encourages public involvement.
s. Ensure that the installation master plan incorporates environmental considerations.
t. Identify environmental requirements, forward through command channels, and maintain auditable records.
u. Execute the environmental budget to meet critical requirements.
v. Maintain an efficient and well-trained environmental staff.
w. Hold tenant units accountable for complying with the policies and standards of the installation.
x. Signs the annual compliance statement required by the Title 5 permit.

The Director of Public Works (DPW) Responsibilities
a. The operations of various maintenance shops (i.e., carpenters, refrigeration)
b. The operation and maintenance of all fuel burners (boilers, emergency generators, peak shaving generators).
C. Supervises the Chief, Environmental Management Division

The Chief, Environmental Management Division, supports the Garrison Commander in carrying

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out the following responsibilities.
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
n. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.12 AR 200-1 • 28 August 2007
o. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14, AR 200-1 • 28 August 2007
p. Work with public affairs office to encourages public involvement.
q. Ensure that the installation master plan incorporates environmental considerations.
r. Identify environmental requirements, forward through command channels, and maintain auditable records.
s. Execute the environmental budget to meet critical requirements.
t. Maintain an efficient and well-trained environmental staff.
u. Work with tenants for compliance with the policies and standards of the installation.
v. Sign all correspondence on environmental matters.
W. Informs and seeks the help of the Garrison Commander when and out of control condition is discovered that cannot be brought under control without his help.

The Chief, EMD, Compliance Branch Responsibilities
a. Management of the Air Quality program.
b. The collection of data required by all reporting requirements.
c. Preparation of all reports under this aspect.
d. Preparation of all permits under this aspect.
e. Identifications of resources necessary to meet the goals of this aspect.
f. Identification of all persons, by name and position, on Redstone Arsenal with responsibilities for compliance under this aspect.
g. Auditing for compliance under the laws, regulations and other requirements of this aspects.
h. Preparation of Corrective Action Plans for non compliance issues.

The EMD Air Quality Program Manager Responsibilities

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a. Administer the various air quality programs to ensure compliance with air permit conditions and to meet other applicable requirements.
b. Maintain, modify, and renew the Major Source Operating Permit (Title V Permit) as needed.
c. Coordinate and assist contractors in the preparation of the annual air emissions inventory.
d. Inspect both permitted and non-permitted facilities and sources to verify compliance with permit conditions and to verify that permit-exempt status is being maintained.
e. Submit reports to the Alabama Department of Environmental Management (ADEM), the Environmental Protection Agency (EPA), and the Department of Army (DA) to document compliance with permit conditions and overall air pollution control programs.
f. Complete and submit permit applications for new source permits, permit modifications for existing sources, air emission inventories, air permit reports, and maintain program files.
g. Provide and assist with completing forms related to air quality.
h. Budget and coordinate payment of fees for new permits and air emission fees.
i. Coordinate emission source test performed by a licensed subcontractor.
j. Review copies of all recordkeeping data and notify emissions source custodians of any compliance issues.
k. Review project plans to identify issues related to air quality and communicate pertinent regulatory requirements.
l. Evaluate new equipment to determine permit requirements.
m. Develops and tracks an annual budget.
n. Respond to non-routine or one-time requests for information from regulatory agencies.
o. Gather additional air emissions information for regulatory reports on a case-by-case basis.
p. Keep up-to-date with ADEM and EPA rules and regulations and provide regulatory guidance to managers and supervisors on air quality related issues.
q. Maintain records of ADEM, EPA internal and external EPAS site inspections (both routine annual inspections and targeted inspections).
r. Provide advice on pollution prevention in areas that impact air quality.

The DPW Master Planning Division Project Engineers and the Engineering Division Project Engineers Responsibilities
a. Providing all data requested by the EMD Air Quality Manager to prepare the Air Construction Permit Application for their projects which involve air emission sources.
b. Ensuring any new or replacement air emission source sources have air permit applications submitted to ADEM at least 10 days prior to the start of construction.
c. Ensure before operating any source that requires a construction permit that a Temporary Authorization to Operate is obtained.
d. Taking precautions to prevent fugitive dust emanating from plant roads, grounds, and stockpiles.

The Chugach Refrigerant Shop Manager is responsible for complying with all requirements of 40 CFR Part 82, Subpart F.

The EMD Risk Management Plan Manager is responsible for maintaining and submission of the Clean Air Act (112r) Risk Management Plan.

The Woodworking and Carpentry Shops Shop Managers at Buildings 3615, 3775N, 5412 are responsible for all woodworking monitoring and recordkeeping requirements.

The Gasoline Dispensing Facilities Mangers at buildings 3234, 3639, and 4828 are responsible for all Gasoline Dispensing Facilities monitoring and recordkeeping requirements.

The Tank Farm Manager at the Bulk Gasoline Plant Tank 5697 is responsible for all Bulk Gasoline Plant monitoring and recordkeeping requirements.

The Chugach Lead Boiler Mechanic is responsible for all of the following boilers except the two boilers at Fox Army Health Center building 4100 monitoring and recordkeeping requirements. The Lead Boiler Mechanic at Fox Army Health Center building 4100 is responsible for the 2 boilers located at that facility.

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The Chugach Peak Shaving Generator (PSG) System Operator is responsible for the PSG monitoring and recordkeeping requirements.

The Chugach Generator Shop Manager is responsible for Emergency Diesel Generators monitoring and recordkeeping requirements.

The Electroplating Shop Manager at building 5432 is responsible for tracking amp-hours of plating for the Air Emissions Inventory.

The Range POCs are responsible for tracking the following for the Air Emissions Inventory:
a. type and weight of explosives used at their individual range
b. engine test cell hours of operation, quantity, and type of fuel used and horsepower of engines tested
c. amount and type of propellant tested
d. number and type of rocket motors tested
e. amount and type of ammunition used
f. type and quantity of materials burned
g. Number of smoke grenades used
h. hours of operation of diesel fired water pump

The Firefighter Training Coordinator is responsible for tracking the type and amount of fuel burned for training for the Air Emissions Inventory.

The International Specialty Products (ISP) Environmental and Safety Manager is responsible for tracking the amount of raw products used and the amount material produced in their operations for the Air Emissions Inventory.

The EMD Landfill Manager is responsible for tracking the daily waste volume, permitted daily waste volume; and distance of unpaved roads for the Air Emissions Inventory.

The University of Alabama in Huntsville (UAH) Research Scientist at the UAH Astrophysics Propulsion Lab building 6230 is responsible for tracking the number of firings and the weights of the propellants fired per test in the Light Gas Gun for the Air Emissions Inventory.

The EMD Hazardous Materials Database Manager is responsible for tracking the miscellaneous chemical use and paint use for the Air Emissions Inventory.

The Morel Welfare and Recreation (MWR) Auto Skills Center Manager at building 3615 is responsible for tracking paint use at that facility for the Air Emissions Inventory.

The EMD Forester is responsible for

a. Tracking the number of acres burned during prescribed burning operations for the Air Emissions Inventory.
b. Taking precautions to prevent fugitive dust emanating from plant roads, grounds, and stockpiles.

The Chief EMD Installation Restoration Branch is responsible for tracking the operational data of the remediation systems for the Air Emissions Inventory.

The Chugach Drinking and Industrial Water Treatment Manager are responsible for tracking the amount of chlorine used and the volume of water treated for the Air Emissions Inventory.

The Waste water treatment Plant operator is responsible for tracking the amount of waste water treated for the Air Emissions Inventory for the Air Emissions Inventory

The Chugach Welding Shop Manager is responsible for tracking the hours of welding operations by Chugach for the Air Emissions Inventory.

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The RTTC Environmental and Safety Manager is responsible for tracking the hours of welding operations at RTTC for the Air Emissions Inventory.

The EMD Pollution Prevention Manager is responsible for tracking the amount of used oil recycled and the type and amount of solvent used in the degreasers.

If there any problems if fulfilling any of these responsibilities the EMD Air Quality Manager shall be informed immediately.

Resources

Environmental resources required for Air Emissions on Redstone Arsenal

Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38538
Branch Chief - 52 Hours - $2,949
Garrison's Clean Air Act Manager hours - 1691 hours- $95,930

Source Operators Labor Hours - 2175 hours
POL Operators Labor Hours - 263 hours
Contractor/Consultant support to Garrison Air Pollution Manager hours - 2080 hours
Environmental Database Hours - 80 hours - $4,000

Contracts required by law or Title V Permit:
$65,000 - Air Emissions Inventory
$50,000 - Green House Gas Inventory
$45,000 - Modifications to Titlt V permit (assume 15 new permits)
$20,000 - comply with new regulations for DLSME NESHAP
$6,000 - Annual Permit Fee

Total Contracts cost required by law - $186,000

Contracts required for Sustainability:

$30,000 Significant Deterioration Study
$4,000 Training to stay current with regs

Assumptions and calculations for the above can be found in the Division Chief, EMD office.

Dollars for various air program functions are identified in the Environmental Management Division's Environmental Program Requirement Database.

Sustainability

Climate change is the single biggest challenge facing our planet. Redstone Arsenal and the US Army are committed to addressing that challenge through environmental leadership and a sustainable future for all. In our vision of a sustainable installation, a clean and healthy environment goes hand-in-hand with strong community engagement, a thriving economy and opportunity for all residents. People want action and they want the knowledge and support needed to make real changes in their own lives. We will use leed standards in planning buildings to accelerate our work to significantly reduce our release of greenhouse gases to the atmosphere and make substantive positive changes to our local air quality. We will increase our use of electric power vehicles to further our reliance on petroleum products and reduce our gaseous emissions. Air Emissions

In our vision of a sustainable installation, clean and healthy air environment goes hand-in-hand with strong community engagement, a thriving economy, and opportunity for all our community. Air Emissions sustainability on RA means that whatever emissions are being emitted on RA are having a net zero or positive effect on the “triple bottom line” according to the way they have been defined in this report.

RA’s biggest air emissions producers in order of amount produced are prescribed burnings,

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International Specialty Products (This facility is a manufacturing site for the production of micropowder™ (iron pentacarbonyl and carbonyl iron powders) for the advanced material market.), boilers, gasoline storage tanks, emergency generators, and test areas. The impacts for this aspect as it pertains to the mission, the community, and the environment are:

Air pollution can damage trees, crops, other plants, lakes, and animals. In addition to damaging the natural environment, air pollution also damages buildings, monuments, and statues. It not only reduces how far you can see in national parks and cities, it even interferes with aviation.

Breathing polluted air can make your eyes and nose burn. It can irritate your throat and make breathing difficult. In fact, pollutants like tiny airborne particles and ground level ozone can trigger respiratory problems, especially for people with asthma. Today, nearly 30 million adults, and children in the United States have been diagnosed with asthma. Asthma sufferers can be severely affected by air pollution. Air pollution can also aggravate health problems for the elderly and others with heart or respiratory diseases.
Some toxic chemicals released in the air such as benzene or vinyl chloride are highly toxic and can cause cancer, birth defects, long term injury to the lungs, as well as brain and nerve damage. And in some cases, breathing these chemicals can even cause death.
Other pollutants make their way up into the upper atmosphere, causing a thinning of the protective ozone layer. This has led to changes in the environment and dramatic increases in skin cancers and cataracts (eye damage).
Air pollution isn't just a threat to our health, it also damages our environment. Toxic air pollutants and the chemicals that form acid rain and ground-level ozone can damage trees, crops, wildlife, lakes, and other bodies of water. Those pollutants can also harm fish and other aquatic life.
Increased air emissions means stricter permit regulations including more monitoring and recordkeeping requirements

•Exposure of people, plants, and animals to possible toxic contamination.
•Administration for permitting requirements.
•Requirements of control equipment.
•Operational requirement for equipment.
•Adds to the air emission inventory which means we pay more air emission fees to the Alabama Department of Environmental Management (ADEM)
•Emergency planning
•Property damage (acid rain on buildings, statues, etc)

The questions we want to answer about this aspect are:

1.Can we keep doing what we are doing now and be sustaining under (A) current conditions and (B) in 20 years if we had zero (0) growth on RA?

(A)Yes according to the latest data from the City of Huntsville we meet the EPA National Ambient Air Quality Standards (NAAQS). At present, Huntsville is classified as an attainment area for all criteria pollutants. However, the Environmental Protection Agency (EPA) promulgated a more stringent standard for ground-level ozone in March 2008, and Huntsville does not currently meet this standard. The standard was lowered from 0.08 ppm, which equates to a standard of 0.084 ppm due to rounding, to 0.075 ppm (parts per million). Compliance with the standard is determined based on evaluation of three years of air quality data – Huntsville's relevant three-year average currently stands at 0.078 ppm, slightly higher than the new federal standard. Consequently, Huntsville was included on the list of recommended non-attainment areas submitted by the State to EPA in March 2009. Factors affecting ozone attainment for the City of Huntsville include nearby coal burning power plants located in Colbert County and Stephenson; large industries in the City of Decatur; and most notably the lack of transportation initiatives to decrease emissions from motor vehicles.

Ozone (O3) is a gas composed of three oxygen atoms. It is not usually emitted directly

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into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. In order to control ozone emissions NOx and VOC emissions must be controlled.

When an area becomes a non-attainment area stricter emission standards are incorporated in the region in order to return the area to an attainment area. As long as RA follows the non-attainment emission regulations we will be sustainable.
(B) Yes, in 20 years if we had zero (0) growth on RA air emissions would decrease due to pending stricter EPA regulations, technological advances, and conservation and is considered to be sustainable

2.Is the way we are managing this aspect sustaining the current mission, community, and environment?

Yes, currently we have staff and procedures in place to regulate current levels of air emissions and meet all permitting and environmental requirements.

GOALS:
•Maintain compliance with all Federal, State, and Army laws and regulations.
•Reduce Greenhouse Gases
•Keep emissions as low as possible without impacting the Mission

ACTIONS:

•Conserve energy
•Recycle paper, plastic, glass bottles, cardboard, and aluminum cans. (This conserves energy and reduces production emissions.)
•Keep boilers and generators well maintained to reduce air emissions
•Plant deciduous trees
•Lower the thermostat
•Use low-VOC or water-based paints, stains, finishes, and paint strippers
•Buy ENERGY STAR products
•Use the Leadership in Energy & Environmental Design (LEED) green building certification system when constructing buildings
•Use low NOx burners on the boilers
•Put stage 2 vapor recovery system on the gasoline dispensing facilities.

Contracts required for Sustainability: $30,000- Significant Deterioration Study

Travel and training to stay current with regs - $3,000

How does Air Emission affect sustainability in:

Mission - Sustain emissions of criteria pollutants and GHG as low as possible without impacting the mission of Redstone and complying with all federal and state regulations. Reduction Targets to be announced in the future.

Community – Although Madison County is currently in attainment of the National Ambient Air Quality Standards (NAAQS), the recent dramatic population growth may threaten this classification. Sustain emissions of criteria pollutants and GHG as low as possible to avoid impacting the National Ambient Air Quality Standards in Madison County.

Environment - Sustain emissions of criteria pollutants and GHG as low as possible to avoid impacting the National Ambient Air Quality Standards. Reduction Targets to be announced in the future.

Consequences

Not following operational controls would cause not complying with environmental regulations. The regulatory program involves self reporting. Any violations of the

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regulation eventual require that we identify what regulation we violated. If make the decision not to notify the regulators consider that to be lying and then will pursue criminal charges. Otherwise depending upon the violation we would only be subject to civil violations and most likely would result in fines.

United States Army, Garrison-Redstone Arsenal signs Consent Agreement and Final Order (CAFO) to settle Clean Air Act (CAA) Violations: On May 22, 2006. The violations were for:
1. Improper permitting procedures relative to new boilers installed for new construction projects. We did not submit construction permits or New Source Performance Standards Reviews (NSPS) to ADEM for several boilers installed after 1999.
2. Weekly visual observation records were not kept in accordance with the RSA Title V Permit at the Woodworking Operation, Building 3615.
3. The RSA Title V Annual Certification certified that it was in compliance with the record keeping requirements at the Woodworking Operation, Building 3615 when it was not in compliance.
4. Constructing/installing boiler different from that requested in construction permit, requesting authorization to operate stating that it was constructed as proposed in the construction permit, and operating the unit after expiration of the permit without requesting an extension.

Redstone paid a penalty of $32,414 and $203,000 for a supplemental environmental project (SEP). The SEP falls within the Pollution Reduction category and involves the replacement of two existing boilers with high efficient natural gas boilers. The SEP will result in the reduction of several hazardous air pollutants including Nitrogen Oxide, Sulfur Dioxide, Carbon Monoxide and Volatile Organic Compounds. The Alabama Department of Environmental Management referred the matter to EPA after conducting an inspection of the facility located in Redstone. On May 12, 2005, Region 4 issued a Notice of Violation to Redstone alleging Title V violations.

Redstone is currently under investigation for violation of administrative permitting issues with peak shaving generators. No harm was done to the environment but that doesn't negate the violation.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

What has been done to make people aware of Air Management?
What can we do to increase awareness?
Update Measureable Targets and set 2012 targets.

11 December, 2009

I, Terry Hazle, did an annual management review of the Air Emission Aspect in the database. The subject expert, Mike Wassell, has been keeping the database update. We are adding a sustainability Tab to the database. The section will list a plan for sustainability for the aspect and the goals will be incorporated into the EMS goals.

Management review

Top management shall review the organization's environmental management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental policy and environmental objectives and targets. Records of the management reviews shall be retained.

Chief, EMD is the person designated to review the EMS.

Input to management reviews shall include

a) results of internal audits and evaluations of compliance with legal requirements and

with other requirements to which the organization subscribes,

Redstone Arsenal had an EPAS during the last year. We also had two inspection from the regullatory community during the last year (ADEM and Region 4 EPA). No violations were identifiedy during the inspections.

B) communication(s) from external interested parties, including complaints,

Redstone is still settling a compliant or violation that began in 2007. It concerned some management requirements under the Clean Air regulations. This violation is expected to be completed in CY 2010 with Redstone paying a fine.

C) the environmental performance of the organization,

The environmental performance of the organization has been good. No violations were cited by the regulatory agencies. Interal audits and inspections are point to better compliance with the air regulations.

D) the extent to which objectives and targets have been met.

Complete the air emission inventory by June 16, 2010 (2 weeks before due date).
Air emissions inventory was done on June 19, 2010.

Conduct a 100% compliance inspection by August 22, 2010 which is prior to submission of the Annual Compliance Certification (ACC).

Submit all reports, certifications, permits and renew all Temporary Authorizations to Operate (TAO) prior to the date/expiration date.

By October 1, 2009 determine the carbon footprint of Redstone Arsenal. (Need to measure before we determine how much to reduce).
(Received the Greenhouse Gas Inventory on February 23, 2009)
Next GHG Inventory is due on June 16, 2011 (2 weeks before due date).

Conduct a complete emergency generator inventory by September 1, 2009. (done)

Complete an air EPAS checklist by September 1, 2009. (done)

Targets of goals were met and new goals have been established.

E) status of corrective and preventive actions,

There are no corrective or preventive actions identified for this aspect (outside of requirements listed in the EMS).

F) follow-up actions from previous management reviews,

There were no follow-up actions from the previous management review.

G) changing circumstances, including developments in legal and other requirements related to its environmental aspects, and

There are no changing circumstances being noted in this report. They will be listed in the next report.

H) recommendations for improvement

There are no recommendations for this aspect for this aspect.

Signed
//Terry Hazle// 11 December 2010.

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Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
2	**Clean Water**	Ramzi Makkouk

Discussion

Clean water is an environmental element of land management which is a service occuring on Redstone Arsenal. There is a large percentage of Redstone Arsenal covered by water. There are many laws and regulations related to clean water. All this means increase risk of significant environmental impact therefor Clean Water is determined to be a significant environmental aspect for Redsone Arsenal that will be managed an part of the RSA Environmental management system.

Impacts or possible impacts

- Expose People, plants and animals to toxic contamination.
- Permitting requirements
- Requirements of addition control equipment
- Cleanup requirements
- Emergency planning necessary
- Increase need and operations for facilities to clean and treat

Goals

Comply with laws and regulations.

Prevent pollution to water resources on Redstone Arsenal.

Measurable Targets

Submit discharge monitoring reports by the 28th day of each month.

Develop and complete a compliance checklist on stormwater permit requirements by 20 September, 2011 (Needs to compelete the BMP and stormwater mgmt plan) (Completed)

Permit calls for reduction of pollutants. By June 1 2008, develop list of pollutants to be reduced.

The well know pollutants are Arsenic, DDT and Polychlorinated Biphenyls(PCBs) and monitoring is required per permit reporting requirements.
However, we monitor for the chemicals stored or utilized on post to ensure there are no contaminants in our stormwater runoff. Therefore, I have no control over what is being stored in the arsenal buildings.

A list of all equipment needing calibrating will be done by July 30, 2011.(completed)

borrow pit by Jan 1 2010(Completed)

NPDES PERMIT RENEWAL APPLICATION BY FEB 2010(Completed)

Annual report by March 2010 MS4(Completed)

Commuity outreach/training for industrial and commercial operators by December 2011(completed)

Inspection project for construction sites.(Completed)

Annual report by March 2011 MS4(Completed)
Industrial Stormwater Management Plan by Dec 2011.(Completed)
Municipal Stormwater Management Plan by Dec 2011.(Completed)

A list of all equipment needing calibrating will be done by December 2012.(completed)

Conduct an environmental workshop for the industrial, residential and commercial areas within our urbanized area by December 2012. (Completed)

Complete an enforcement of Stormwater Management Program Policy by August 2012. (Completed)

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Modify NPDES permit by May 2013.

Letters of Instructions

Legal Requirements

40 CFR Part 122-503

CWA Title III Section 301, 302, 303, 304, 305, and 307

CWA Title IV Section 402 and 405

33 U.S.C. 1251 et seq. (1972)
The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. Clean Water Act became the Act's common name with amendments in 1977.

Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. We have also set water quality standards for all contaminants in surface waters.

The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972. As amended in 1977, the law became commonly known as the Clean Water Act (CWA).

The 1977 amendments:

Established the basic structure for regulating pollutants discharges into the waters of the United States.
Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry.
Maintained existing requirements to set water quality standards for all contaminants in surface waters.
Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.
Funded the construction of sewage treatment plants under the construction grants program.
Recognized the need for planning to address the critical problems posed by nonpoint source pollution.
Subsequent amendments modified some of the earlier CWA provisions. Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of treatment plants built under the program. Changes in 1987 phased out the construction grants program, replacing it with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund. This new funding strategy addressed water quality needs by building on EPA-state partnerships.

Over the years, many other laws have changed parts of the Clean Water Act. Title I of the Great Lakes Critical Programs Act of 1990, for example, put into place parts of the Great Lakes Water Quality Agreement of 1978, signed by the U.S. and Canada, where the two nations agreed to reduce certain toxic pollutants in the Great Lakes. That law required EPA to establish water quality criteria for the Great Lakes addressing 29 toxic pollutants with maximum levels that are safe for humans, wildlife, and aquatic life. It also required EPA

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to help the States implement the criteria on a specific schedule.

State Requirements:
The following requirements are applicable to any industrial facility wishing to discharge pollutants into waters of the State of Alabama:

No person shall discharge pollutants into waters of the state without first having obtained a valid NPDES permit or coverage under a valid General NPDES Permit

No person, required to apply for a storm water discharge permit by 40 CFR 122.26 (1994), shall discharge pollutants into waters of the state without first having applied for a valid NPDES permit or coverage under a valid General NPDES Permit. New dischargers shall obtain a valid NPDES permit or coverage under a valid General Permit prior to conducting any activity for which application for a storm water discharge permit is required by 40 CFR 122.26 (1994).

State Indirect Discharge (SID) Permit Information
An industrial facility is required to apply for a SID permit if it meets one or more of the following definitions for a Significant Industrial Discharger or Significant Industrial User:

All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 (1994) and 40 CFR Chapter I, Subchapter N (1994);

All industrial users that discharge an average of 25,000 gallons per day or more of process wastewater (excluding sanitary wastewater, non-contact cooling water, and boiler blowdown) to a publicly owned treatment works;

All industrial users that discharge an average quantity of process wastewater (excluding sanitary wastewater, non-contact cooling water, and boiler blowdown) that makes up five percent or more of the average dry weather organic or hydraulic capacity of the publicly owned treatment works;

All industrial users that discharge an average organic loading that makes up five percent or more of the design capacity of the publicly owned treatment works;

All industrial users that discharge to a privately owned treatment works; or

Any industrial user that is determined by the Director to have a reasonable potential to adversely affect the operation of the publicly owned treatment works or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)(1994).

The software program, accessible at either http://www.gatechstormwater.com provides assistance in the development of a Best Management Practices (BMP) Plan or Storm Water Pollution Prevention Plan (SWPPP) for facilities. However, it is the facility's responsibility to comply with all state and federal requirements. If you have any questions, please contact the Industrial Section of ADEM at (334) 270-5669.

ADEM Regulations

335-6-1 General Provisions

335-6-7 National Pollutant Discharge Elimination System (NPDES) Best Management Practices, Registration Requirements, Technical Standards and Guidelines, Construction and Operation Requirements, Waste/Wastewater and Waste Product Treatment, Storage, Handling, Transport, and Disposal/Land Application, Nutrient Management, and Animal Mortality Management Requirements for Owners and Operators of Animal Feeding Operations (AFOs) and Concentrated Animal Feeding Operations (CAFOs)

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335-6-9 Surface Mining Rules

335-6-10 Water Quality Criteria

Other requirements:

•The Federal Water Pollution Control Act. This act, commonly known as the Clean Water Act (CWA), as amended February 4, 1987, 33 U.S. Code (USC) 1251-1387, Public Law (PL) 100-4, governs the control of water pollution in the nation. The act's primary objective is to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters. The CWA regulates priority pollutants, including various toxic pollutants; conventional pollutants, such as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease, and pH; and non-conventional pollutants, including any pollutant not identified as either conventional or priority [Revised October 2001].

•The Federal Facility Compliance Act (FFCA). This act, dated 6 October 1992, amends the Solid Waste Disposal Act (SWDA) and addresses requirements for Federally owned treatment works (FOTW) under 42 USC 6939(e) (PL 102-386). The FFCA establishes a conditional domestic sewage exclusion for industrial discharges to an FOTW. This allows an FOTW to accept hazardous wastes, provided that certain conditions are met and the wastes are not acutely hazardous.

•EO 12088, Federal Compliance with Pollution Standards. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 [Revised October 2002].

Add new regs on post-construction

Training Requirements

Training for municipal operators.

Laboratory must maintain accreditation for all analytes tested.

For DMR-QA Study 32, Chugach Chemistry lab has received an Acceptable performance evaluation for all parameters they test for per permit requirements. (2 November 2012)

ADEM has a surface water conferences annually that is good for the subject matter expert to go to to keep up with the environmental regulations.

Awareness

EMD Web Page:
Stormwater Program
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/water/stormwater.html
Terry Hazle checked the page on 11/14/2011. This page is OK for cleanwater awareness, but the permit page is in need of an update. The wastewater permit needs to be update on the web page also.

Newspaper:
Title: Waste Ruins My Taste
Date: 26 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\023.pdf

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Title:Waste Ruins My Taste
Date: 16 June 2010
Location: T:\DATA\Correspondence\EMS Training Documents\026.pdf

Title: Grow Your Knowledge About Lawn Care for Environment
Date: 30 June 2010
T:\DATA\Correspondence\EMS Training Documents\029.pdf

Title: Toxins Tick Off Turtles
Date: 21 July 2010
Location: T:\DATA\Correspondenc\EMS Training Documents\036.pdf

Title: Waste Ruins My Taste
Date: 28 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\040.pdf

Title: Waste Ruins My Taste
Date: 27 October 2010
Location: T:\DATA\Correspondence\EMS Training Documents\042.pdf

Title: Waste Ruins My Taste
Date: 1 December 2010
Location: T:\DATA\Correspondence\EMS Training Documents\044.pdf

Title: Waste Ruins My Taste
Date: 12 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\018.pdf

Title: Waste Ruins My Taste
Date: 19 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\020.pdf

Title: Toxins Tick Off Turtles
Date: 1 December 2010
Location: T:\DATA\Correspondence\EMS Training Documents\045.pdf

Title: Waste Ruins My Taste
Date: 8 December 2010
Location: T:\DATA\Correspondence\EMS Training Documents\046.pdf

Title: Toxins Tick Off Turtles
Date: 23 February 2011
Location: T:\DATA\Correspondence\EMS Training Documens\048.pdf

Title: Toxins Tick Off Turtles
Date: 9 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\055.pdf

Title: Grow Your Knowledge About Lawn Care For Environment
Date: 22 June 2011
Location: T:\DATA\Correspondence\EMS Training Documents\063.pdf

Title: Waste Ruins My Taste
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\070.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect.

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The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Operational controls are according to the requirements of the Best Management Practices Plan. The clean water subject mater expert is responsible for maintianing the best management pratice plan.

Permits

SOP FOR SAMPLING AND ANALYSIS FOR CHUCACH

STORMWATER COMPLIANCE INSPECTION CHECKLIST

FACILITY: ----------
BUILDING: ----------
CONTACT/TITLE:----------
OTHER PARTICIPANTS:----------
CONTACT/PHONE NUMBER:----------
NPDES PERMIT # AL ----------
SID IU ----------
POTW AL----------
INSPECTION DATE(S):----------
DISCHARGE TYPE: MAJ 0 MIN 0 GEN 0 SID 0

Section A: Areas Evaluated During Inspection (Check only those areas evaluated)
Permit X Compliance Schedules X Storm Water X Records/Reports X Laboratory X
Combined Sewer Overflow X Laboratory X
Facility Site Review Operations & MaintenanceSanitary Sewer Overflow
Effluent / Receiving Waters Sludge Handling/DisposalSmall Municipal Separate Storm Sewer Systems (SMS4)
Flow Measurement Pretreatment
Self- Monitoring Program Pollution Prevention

Areas InspectedYesNoN/ADescription and Location of Problem Corrective Action / Date
1.Records
(A)ADEQUATE RECORDS MAINTAINED OF:
(1)SAMPLE DATE, TIME LOCATION
(2)ANALYSIS DATE, TIME
(3)ANALYTICAL METHODS
(4)EPA/ADEM APPROVED ANALYTICAL METHODS USED
(5)ANALYST
(6)LAB EQUIPMENT CALIBRATION AND MAINTENANCE
(7)BEST MANAGEMENT PRACTICES (BMP) INSPECTION
(8)RAINFALL DATA
(B)COMMERCIAL LAB USED FOR REPORTED ANALYSES
NAME: LOCATION:
©RECORDS RETAINED FOR AT LEAST 3 YEARS
(D)COPY OF PERMIT AVAILABLE
(E)CORRECT NAME AND MAILING ADDRESS OF PERMITTE
2.OPERATIONS AND MAINTENANCE
(A)ALL NECESSARY TREATMENT UNITS IN SERVICE
(B)BMP 0 SPCC 0 CBMPP 0 PLAN AVAILABLE AND CURRENT 0

©ADEQUATE CONTAINMENT FOR PRODUCT AND WASTE MATERIALS
(D)BMP MEASURES ADEQUATE
(E)ALL DISCHARGES ARE PERMITTED
(F)SLUDGES AND SOLIDS ADEQUATELY DISPOSED
SLUDGE/SOLIDS PRODUCTED LBS/DAY:
DISPOSAL METHOD: OFFSITE LF ONSITE LF
INCIN 0 SLUDGE LAGOON 0 LAND
APPLIED 0
OTHER
(G)POLLUTION PREVENTION(2) / SOURCE REDUCTION PLAN &/OR PRACTICES P2

Required Permits

National Pollutant Discharge Elimination Systems Permit - AL 0000019
Issue Date: August 5, 2005
Expiration Date: August 31, 2010 (We are still operating on the existing permit until the new permit is issued)

General NPDES Permit Number ALR040033
Issue Date: January 31, 2011
Expiration Date: January 31, 2016

Borrow Area # Five
Issue Date: November 13, 2006
Expiration Date: January 1, 2010 resubmitted?

Required Plans

Best Management Practices (BPM) Plan - Required by permit
Last update - December 2011 (Industrial Permit)
Last update - December 2011 (Municipal Permit)
Clean Water subject expert is responsible for maintaining the BMP

Required Records

Records required are in accordance with NPDES Number AL 0000019 Section B posted on EMD web page.

Annual Report for municipal permit submitted to the ADEM by March 10th. Includes:
- The status of compliance with permit conditions.
- assessment of appropiateness of BMPs
- measurable goals of each of the minimum control measures.
- results of information collected and analyzed
- summary of stormwater activity you plan to undertake
- proposed changes to your SWMP

The clean water subject mater expert is responsible for ensuring the above records are submitted on time.

Construction BMPs and NOR'sfrom contractors.

Chugach maintenance records on OWS

Records for DMR's maintained on ADEM WEB SITE.

Records for inspection checklist from BMP's for crucial tenants

Monitoring/Measuring Requiremens

All monitoring is to be done in accordiance with NPDES Number AL0000019 Section A posted on EMD Web Page.

The clean water subject matter expert is responsible for ensuring that all monitoring reqired by the permit is done.

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STORMWATER COMPLIANCE INSPECTION CHECKLIST

FACILITY: ----------
BUILDING: ----------
CONTACT/TITLE:---------- OTHER PARTICIPANTS:----------
CONTACT/PHONE NUMBER:----------
NPDES PERMIT # AL ---------- SID IU ---------- POTW
AL----------
INSPECTION DATE(S):---------- DISCHARGE TYPE: MAJ 0 MIN 0 GEN 0 SID 0

Section A: Areas Evaluated During Inspection (Check only those areas evaluated)
Permit Compliance SchedulesStorm
Water
Records/Reports LaboratoryCombined Sewer Overflow
Facility Site Review Operations & MaintenanceSanitary Sewer Overflow
Effluent / Receiving Waters Sludge Handling/DisposalSmall Municipal Separate Storm Sewer
Systems (SMS4)
Flow Measurement Pretreatment
Self- Monitoring Program Pollution Prevention

Areas InspectedYesNoN/ADescription and Location of Problem Corrective Action / Date
1.Records
(A)ADEQUATE RECORDS MAINTAINED OF:
(1)SAMPLE DATE, TIME LOCATION
(2)ANALYSIS DATE, TIME
(3)ANALYTICAL METHODS
(4)EPA/ADEM APPROVED ANALYTICAL METHODS USED
(5)ANALYST
(6)LAB EQUIPMENT CALIBRATION AND MAINTENANCE
(7)BEST MANAGEMENT PRACTICES (BMP) INSPECTION
(8)RAINFALL DATA
(B)COMMERCIAL LAB USED FOR REPORTED ANALYSES
NAME: LOCATION:
(C)RECORDS RETAINED FOR AT LEAST 3 YEARS
(D)COPY OF PERMIT AVAILABLE
(E)CORRECT NAME AND MAILING ADDRESS OF PERMITTE
2.OPERATIONS AND MAINTENANCE
(A)ALL NECESSARY TREATMENT UNITS IN SERVICE
(B)BMP 0 SPCC 0 CBMPP 0 PLAN AVAILABLE AND CURRENT 0

(C)ADEQUATE CONTAINMENT FOR PRODUCT AND WASTE MATERIALS
(D)BMP MEASURES ADEQUATE
(E)ALL DISCHARGES ARE PERMITTED
(F)SLUDGES AND SOLIDS ADEQUATELY DISPOSED
SLUDGE/SOLIDS PRODUCTED LBS/DAY:
DISPOSAL METHOD: OFFSITE LF ONSITE LF
INCIN 0 SLUDGE LAGOON 0 LAND
APPLIED 0
OTHER
(G)POLLUTION PREVENTION(2) / SOURCE REDUCTION PLAN &/OR PRACTICES P2

Calibration

Instrument Type	Manufacturer	Model	Serial	Propety ID	Last Service	Next Service
Chromatograph	Varian	450/GC 220	MSGC0808B140	MS 01084A185	December 2012	December 2013
Chromatograph	Varian	3900 GC/ Saturn 2100T	MS101970	/06146CMSI-21	December 2012	December 2013
Autosampler	Teledyne Tekmar	Stratum	XPCUS07269001	A184	23July 2012	July 2013
Autosampler	PAL System	Combi-Pal	1212016	A185616	December 2012	December 2013
ICP	Teledyne Leeman	Prodigy ICP	7057	None Assigned	December 20102	August 2013

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Balance	Mettler Toledo	X560 1M	1125441862	CMSI-1896	November 2012	November 2013
Balance	Mettler Toledo	AT261	1116020338	CMSI-1086	November 20102	November 2013
Balance	Mettler Toledo	XP504	1129412263	A18524	November 2012	November 2013
Spectrophotometer	Hach	DR-2800	1151144	CMSI-1960	September 2012	September 2013
Spectrophotometer	Thermo	Geneysis 6	2M7K220002	A18437	August 2012	August 2013
Reactor	Hach	DRB-200	1155829	CMSI-1978	September 2012	September 2013
Colorimeter	Hach	Pocket Colorimeter II	No Serial	CMSI-2455	September 2012	September 2013
Titrator	Hach	Autocat 9000	689R073N004	CMSI-2456	September 2012	September 2013
Turbidimeter	Hach	2100Q	10010C000686	CMSI-0136	September 2012	September 2013

What Significant Impacts Are

Any project that would cause deteroation of waters on Redstone Arsenal is a violation of the Clean Water Act and it would cause a significant impact to the environment.

Any violation of Clean Water Act or related regulations? None

Responsible Person(s)

Garrison Commander Responsibilities per AR200-1
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of
n. installation-wide corrective actions.
o. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.
p. 12 AR 200-1 • 28 August 2007
q. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14.
r. Maintain a public affairs program that encourages public involvement.
s. Ensure that the installation master plan incorporates environmental considerations.
t. Identify environmental requirements, forward through command channels, and maintain auditable records.
u. Execute the environmental budget to meet critical requirements.
v. Maintain an efficient and well-trained environmental staff.

w. Hold tenant units accountable for complying with the policies and standards of the installation.
x. Signs the annual compliance statement required by the Title 5 permit.

•Directorate of Public Works (DPW) is responsible for operating and maintaining the wastewater treatment plant, including operation training and certification and sludge management. Additionally, they are responsible for the operation of the laboratory associated with the wastewater treatment plant, or providing oversight if the laboratory is a contract operation. They are also responsible for managing maintenance of oil/water separators. Another responsibility is the maintenance of washracks and servicing of the grit trap.

The Chief, Environmental Management Division, supports the Garrison Commander in carrying out the following responsibilities.
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
n. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.12 AR 200-1 • 28 August 2007
o. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14, AR 200-1 • 28 August 2007
p. Work with public affairs office to encourages public involvement.
q. Ensure that the installation master plan incorporates environmental considerations.
r. Identify environmental requirements, forward through command channels, and maintain auditable records.
s. Execute the environmental budget to meet critical requirements.
t. Maintain an efficient and well-trained environmental staff.
u. Work with tenants for compliance with the policies and standards of the installation.
v. Sign all correspondence on environmental matters.

The Chief, EMD, Compliance Branch is responsible for;
* Management of the Clean Water Act.

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* The collection of data required by all reporting requirements.
* Preparation of all reports under this aspect.
* Preparation of all permits under this aspect.
* Identifications of resources necessary to meet the goals of this aspect.
* Identification of all persons, by name and position, on Redstone Arsenal with responsibilities for compliance under this aspect.
* Auditing for compliance under the laws, regulations and other requirements of this aspects.
* Preparation of Corrective Action Plans for non compliance issues.

The EMD Stormwater Program Manager (Clean water subject expert) is responsible for monitoring wastewater discharges and stormwater quality at the installation to ensure compliance with applicable wastewater and stormwater NPDES permits. The EMD Stormwater Program Manager also supports the preparation of the NPDES permits, stormwater pollution prevention plan, and submits monitoring reports to regulators. Additionally, they are responsible for the grit from washracks and sludge from oil/water separators if it is hazardous waste.

Resources

Administration Overhead Cost (Chief's Office) - 819 Hours - $38538
Branch Chief - 52 Hours - $2,756
Program Manager - 1404 Hours- $30,226
Total GIS support hours is approximately 260 hours - $12,350

Contract requirements
76K/yr for lab services which includes sampling and data entry

Sustainability

Consequences

Paying regulatory Fines.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Move Brian Mason email to the journal section.(Completed)
Write results of targets for 2010. (Completed)
Set 2012 targets.(Completed)
What was done to make people aware of what was required for this aspect (training, public ads)? Posted an educational articles in the Rocket and utilizing the electronic board for posting an environmental awareness message for Redstone Community that reads "Keep Redstone Community Beautiful…Don't Litter…Report Violations to Garrison Environmental Office at 955-8501."
Update calibration records.(Completed)
Check to see if we did the required annual report to ADEM by March 10th.(Completed)

Location

Top Three Issues

Top Three Successes

ID	Aspect	Subject Matter Expert(s)
3	**Restoration**	Terry Delapaz

Discussion

Contamination of soil and groundwater are products of Redstone Arsenal that were associated with operations that go back to 1942 when hazardous materials and waste were not properly managed. There are environmental related laws and regulations that require the restoration of the soil and groundwater. The environmental impacts of the contamination are siginificant. The cost of doing this is hugh. Restoratioin is an aspect of the environment that has been determined to be siginificant and will be managed as a part of Redstone's Environmental Management System.

Restoration includes the following aspects:
Soil cleanup
Groundwater cleanup
RCRA cleanup
CERCLA cleanup

Impacts or possible impacts

- Reduces exposure of people, plants and animals to toxic contamination
- Returns property (land) to availability of use
- Complies with laws and regulations

Goals

Protect and sustain the health of the people in the Redstone Community.

Protect and sustain the Environment of the Redstone Arsenal and surronding area.

Comply with all laws.

Manage the restoration program that supports and sustains the missions of Team Redstone.

Measurable Targets

-Develop and complete a regulatory checklist based on laws and regulations for the aspect of Soil/Groundwater Contamination by September 20, 2009.

- Remove all the recovered Hazardous Waste in permitted storage on Jan 1, 2009 by the end of September 1, 2009

- Redstone will meet with EPA, ADEM and AEC to try to hammer out a Federal Facility Agreement by December 1, 2009.

- The Redstone Tier I team has set measurable goals for the cleanup of Redstone Arsenal and they are tracking the success of those goals.

Letters of Instructions

Legal Requirements

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. This act was amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, 42 USC 9601-11050, 10 USC 2701-2810 et. al. This act has four basic elements. The first element is the establishment of an information gathering and analysis system for the characterization of contaminated sites. This information is used in the development of the USEPA’s National Priorities List (NPL). The second element is the establishment of Federal authority to respond to hazardous substance emergencies and cleanup leaking sites. The third element is the creation of a trust fund to pay for removal and remedial actions. The fourth element makes persons who are responsible for hazardous substance releases liable for cleanup and restitution costs.

Community Environmental Response Facilitation Act. This act, PL 102-426, amends CERCLA. It requires that, prior to the termination of Federal activities on any real property owned by the Federal Government, agencies must identify real property where no hazardous substance was stored, released, or disposed of. The purpose is to identify property that

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offers the greatest opportunity for reuse and redevelopment.

EO 12580, Superfund Implementation. This EO, dated 23 January 1987, mandates the development of the National Response Team (NRT) and redelegates authority for various functions related to Superfund from the President to other Federal agencies.
Federal Facilities Compliance Act (FFCA). Section 107 of the FFCA of 1992 amended the Resource Conservation and Recovery Act (RCRA) by adding a new section 3004(y) that requires the USEPA to propose, after consulting with the Department of Defense (DoD) and appropriate State officials, and then to finalize regulations that identify when conventional and chemical military munitions become hazardous waste subject to Subtitle C of RCRA, and that provide for the safe storage and transportation of such waste. Such regulations are to assure the protection of human health and the environment [Added April 2003].

DoD 6055.9-STD, Ammunition and Explosives Safety Standards. This standard, dated 01 July 1999, is implemented by 40 CFR 266.205(a)(1)(iii). It is issued under the authority of DoD Directive 6055.9, DoD Explosives Safety Board (DDESB), and DoD Component Explosives Safety Responsibilities, July 29, 1996. It establishes uniform safety standards applicable to ammunition and explosives, to associated personnel and property, and to unrelated personnel and property exposed to the potential damaging effects of an accident involving ammunition and explosives during their development, manufacturing, testing, transportation, handling, storage, maintenance, demilitarization, and disposal. These ammunition and explosives safety standards shall be considered minimum and greater protection shall be afforded when practicable. They apply whenever any explosives, propellants, or similar energetic materials are present on DoD-owned or -leased facilities. [Added April 2003].

Under RCRA, USEPA may authorize a State or Territory, instead of the Federal government, to administer and enforce the RCRA hazardous waste program. While the regulations adopted by a State or Territory have to be at least as stringent as the Federal regulations, RCRA allows States and Territories to impose standards that are more stringent than those in the Federal program. Therefore, compliance requirements may differ from State to State or Territory. In the 12 February 1997 Federal Register, page 6625, the USEPA strongly encourages States to adopt 40 CFR 266, Subpart M for regulating military munitions, the USEPA acknowledges that States may adopt requirements with respect to military munitions that are more stringent or broader in scope than the Federal requirements [Added April 2003].

The waste munitions requirements in 40 CFR 266, Subpart M are not considered as part of the Hazardous and Solid Waste Amendments (HSWA). Therefore, although USEPA retains enforcement authority under RCRA sections 3008, 3013, and 7003, they are not Federally enforceable in an authorized State until the necessary changes to a States' authorization have been approved by USEPA. For a more detailed explanation, see the Military Munitions Rule preamble, page 6648, part V. State Authority of the 12 February 1997 Federal Register (FR),

Some states have adopted the equivalent of 40 CFR 266 Subpart M and have incorporated these requirements into their state HW program but have not yet been authorized by USEPA to incorporate these rules into the federal RCRA program. As of September 2002, 31 states have adopted 40 CFR 266 Subpart M rules. Of these, 21 have been authorized by USEPA to implement those rules as part of the federally authorized RCRA program. Eleven states have not received USEPA authorization, but may still implement these rules on the strength of their state statutory authority. [Added April 2003].

The Resource Conservation and Recovery Act (RCRA). RCRA of 1976, which amended the Solid Waste Disposal Act, addresses nonhazardous (Subtitle D) and hazardous (Subtitle C) waste management activities. The Hazardous and Solid Waste Amendments (HSWA) of 1984 strengthened RCRA’s waste management provisions and added Subtitle I, which governs underground storage tanks (USTs). This section addresses Subtitle C requirements. See Solid Waste Management for Subtitle D requirements and Storage Tank Management for Subtitle I requirements [Revised March 2000].

The Federal Facility Compliance Act (FFCA) of 1992. This act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive

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requirements relating to RCRA solid and hazardous waste laws and regulations. Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, addresses the issue of munitions, and discusses waste discharges to Federally owned treatment works (FOTWs).

Under RCRA, USEPA may authorize a State or Territory, instead of the Federal government, to administer and enforce RCRA, including waste military munitions (WMM). While the regulations adopted by a State or Territory have to be at least as stringent as the Federal regulations, RCRA allows States and Territories to impose standards that are more stringent than those in the Federal program. Therefore, compliance requirements may differ from State to State or Territory. The definitions of when military munitions become WMM and the Designated Disposition Authority (DDA) Evaluation Process apply at all activities. These requirements are not dependent upon a State or Territory's adoption of the Federal MR or adoption of other State or Territory standards [Revised January 2003].
Other requirements
The following list of statutory requirements apply to environmental cleanup:
a. 42 USC 9601; 40 CFR 300; Section 120, Part 1910, Title 29, Code of Federal Regulations (29 CFR 1910.120);
Executive Order (EO) 12580; and 42 USC 6901, Sections 3004u, 3004v, and 3008h; Section 2701, Title 10 United States Code (10 USC 2701); DOD 7000.14-R; DODI 4715.7, for all but overseas installations; DODI 4715.8; Engineer Regulation (ER) 200-3-1, formerly Used Defense Site (FUDS) Program Policy; Charter for the Formerly Used Defense Sites Program, 31 October 2003; and Office of the Assistant Secretary of the Army for Installations and Environment (OASA (I&E)) Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) (DASA (ESOH)) memorandum, 18 June 2004, subject: The Army Environmental Compliance-related Cleanup Program Eligibility. The Army environmental cleanup programs include the Army DERP at active, closing, and realigning installations; DERP at FUDS properties; and compliance-related cleanup (CC) at active and excess installations, including those overseas.
Appendix A
(1) Defense Environmental Restoration Program (DERP) cleanups (Installation Restoration Program (IRP), Military Munitions Response Program (MMRP), base realignment and closure (BRAC), FUDS) address hazardous substances, pollutants and contaminants, and military munitions sites, consistent with the provisions of 42 USC 9601, et seq.
(CERCLA); 40 CFR 300 (National Oil and Hazardous Substances Pollution Contingency Plan); EO 12580; and 42
USC 6901, Sections 3004u, 3004v, and 3008h for activities that resulted in contamination prior to 17 October 1986 at non-permitted sites.
……
(2) Compliance related cleanup (CC) addresses cleanup requirements that are legally mandated but not eligible for funding under the Army DERP. The program focuses on the remediation of contamination at Army overseas facilities (it does not include actions to remedy contamination that are covered by environmental annexes to operations orders and similar operational directives), and on the cleanup of contamination resulting from operations that have occurred since 17 October 1986. This includes sites at Active Army, Army Reserve, Army National Guard (ARNG) Federally owned facilities, as well as cleanup at non-Federally-owned, Federally-supported (State-owned, State-operated) ARNG 38 AR 200-1 • 28 August 2007 facilities. CC does not include initial response actions to address spills, but does include follow-on response action, if required.

B. The DERP is supplemented by the DOD Management Guidance for the Defense Environmental Restoration Program (DERP), September 2001. The DERP Management Guidance defines eligibility and addresses sites in the following three program categories:

(1) The IRP includes response actions to address releases of hazardous substances, pollutants and contaminants (as defined in CERCLA); petroleum, oil, lubricants (POL); DOD-unique materials; hazardous wastes (HW); and low-level radioactive materials or low-level radioactive wastes (LLRW). The IRP also includes military munitions (including munitions and explosives of concern (MEC), see glossary) or munitions constituents (MC) at a relatively small number of sites where the following three conditions all exist:
(a) The release occurred prior to 30 September 2000.

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(b) The release is at a site that is not an operational range, an active munitions demilitarization facility, an active waste military munitions (WMM) treatment or disposal unit, or FUDS.
© The site was identified or included in the Army Environmental Data Base-Restoration (AEDB-R) or Formerly Used Defense Sites Management Information System (FUDSMIS) prior to 30 September 2000, and was not classified as "response complete."

(2) The MMRP addresses munitions responses at active or BRAC installations where the release occurred prior to 30 September 2002, and the release is at a site that is not a FUDS, an operational range, an active munitions demilitarization facility, or an active WMM treatment or disposal unit that operated after 30 September 2002, and the site was not identified or included in the AEDB-R prior to 30 September 2000.

(3) Building demolition/debris removal (BD/DR) addresses the demolition and removal of unsafe buildings and structures at facilities or sites that are or were owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the DOD.

Resource Conservation and Recovery Act (RCRA), P.L. 98-616
This is the Federal law that governs the disposal of solid waste. Subtitle D of this act, as last amended in November 1984, Public Law (PL) 98-616, 42 U.S. Code (USC) 6941-6949a, establishes Federal standards and requirements for state and regional authorities respecting solid waste disposal. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941).
RCRA (pronounced rick-rah) gave EPA the authority to control hazardous waste from the cradle-to-grave. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous wastes.
The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. RCRA focuses only on active and future facilities and does not address abandoned or historical sites (see CERCLA).

HSWA (pronounced hiss-wa)¶The Federal Hazardous and Solid Waste Amendments are the 1984 amendments to RCRA that required phasing out land disposal of hazardous waste. Some of the other mandates of this strict law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

Federal Facility Compliance Act (FFCA), October 6, 1992
This Act provides for a waiver of sovereign immunity with respect to federal, state, and local procedural and substantive requirements relating to the Resource Conservation and Recovery Act (RCRA) solid and hazardous waste laws and regulations at federal facilities. Federal agencies are responsible for compliance and government agents or employees are subject to criminal sanctions under any federal or authorized state solid or hazardous waste law. In addition, EPA is authorized to issue Administrative Orders to Federal agencies and may, as are authorized states, levy fines in the event of non-compliance (42 U.S.C. 6961). It also directs the Environmental Protection Agency to make annual inspections of facilities owned or operated by the United States which treat, store, or dispose of hazardous waste to insure compliance with applicable regulations. Authorized states may also conduct inspections to insure compliance with authorized State hazardous waste programs (42 USC 6927©). Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, and discusses waste discharges to federally owned treatment works

Code of Federal Regulations, Part 260-279 Title 40

DOD 4500.9-R Chapter 204

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Code of Federal Regulations Parts 171-178 Title 49 - Deals with transportation of hazardous materials including hazardous waste

AR 200-1, dated 21 February 1997
Environmental Protection & Enhancement
This regulation provides a brief overview of environmental programs and requirements. It does not provide a complete listing of requirements or detailed guidance on complying with environmental laws and regulations. In addressing environmental issues, readers must consult the applicable laws, regulations, and guidance documents referenced in this regulation. This regulation supplements Federal, state, and local environmental laws for preserving, protecting, and restoring the quality of the environment. It also integrates pollution prevention, natural and cultural resources, and the National Environmental Policy Act (NEPA) into the Army Environmental Program.

---------- ADEM requirements ----------
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, LAND DIVISION - HAZARDOUS WASTE PROGRAM, DIVISION 14, ADEM Admin. Code R. 335-14-x-.xx

ADEM 335-6

ADEM 335-7

Solid waste management unit or SWMU includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. Units subject to regulation under 335-14-5, 335-14-6, 335-14-7, or 335-14-8 are also solid waste management units. SWMU's include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

SWMU corrective action facility for the purposes of 335-14-5-.08 means a facility which is subject to the requirements of 335-14-5-.06(12) for the corrective action of Solid Waste Management Units, and has been issued a permit or an enforceable document (as defined in 335-14-8-.01(1)(c)7.) in accordance with 335-14-8 or an order pursuant to Section 3008(h) of RCRA.

335-14-5-.06 Releases from Solid Waste Management Units…….

(12) Corrective action for solid waste management units.
(a) The owner or operator of a facility seeking a permit for the treatment, storage, or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.
(b) Corrective action will be specified in the permit in accordance with 335-14-5-.06 and 335-14-5-.19. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and land use controls as required by 335-14-5-.06(12)(f).
(c) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a

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case-by-case basis..
(d) 335-14-5-.06(12) does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing or disposing of hazardous wastes that are not remediation wastes.
(e) The owner or operator must maintain a detailed estimate of the cost of corrective action required by rules 335-14-5-.06(11), 335-14-5-.06(12)(b), and 335-14-5-.06(12)(c). The cost estimate must be in accordance with 335-14-5-.08(10). Financial assurance must be provided in accordance with 335-14-5-.08(11).
(f) Where corrective actions will result in hazardous constituents remaining in place at a facility in concentrations exceeding those appropriate for unrestricted use, the owner or operator must:
1. Establish appropriate land-use controls designed to minimize exposure to hazardous constituents remaining in place and to limit inappropriate uses of the contaminated areas of the facility; and
335-14-5-.07
5-55
2. include the following notice in any deed, mortgage, deed to secure debt, lease, rental agreement, or other instrument given or caused to be given by the owner or operator which creates an interest in the facility or the contaminated area of the facility: This property has been cleaned up to standards less stringent than those required for unrestricted use due to the presence of substances regulated under state law. Certain uses of this property may require additional cleanup. Contact the property owner or the Alabama Department of Environmental Management for further information concerning this property.; and
3. submit documentation of compliance with the requirements of the Uniform Environmental Covenants Program in ADEM Admin. Code div. 335-5.
Author: Stephen C. Maurer; Stephen A. Cobb; Steven O. Jenkins; C. Edwin Johnston; Metz Duites; Michael B. Champion; Vernon H. Crockett; Bradley N. Curvin; Theresa A. Maines; Tracy P. Strickland.
Statutory Authority: Code of Alabama 1975, §§ 22-30-11, 22-30-12 and 22-30-16.
History: June 8, 1983.
Amended: April 9, 1986; September 29, 1986; August 24, 1989; December 6, 1990; April 2, 1991; January 25, 1992; January 5, 1995; March 27, 1998; April 2, 1999; March 31, 2000; April 13, 2001; March 15, 2002; April 17, 2003; May 27, 2004; March 31, 2005; April 3, 2007; March 30, 2010.

Training Requirements

-RCRA Initial training (within 6 months of assignment of duties) and annual refresher training

-Department of Transportation (DOT) training (initial and refresher every 2 years)

-RCRA Corrective Action training (not mandatory, but essential)

-OSHA Training (first responder)(HAZWOPER) (not mandatory, but recommended)

-Financial Liabilities Training (mandatory by AEC)

-RACER Training (if you prepare/review government estimates for RCRA/CERCLA cleanup sites)

Awareness

The Army has held four public meetings to talk about the contamination. The first was in October 2003 at Whitesburg Baptist Center, and the second was held there two years later. The third meeting was held in November 2007 at the Thomas W. Davidson Senior Center, and the fourth in October 2008 at the Farley Community Church on Bell Road.

A fifth public meeting is being planded for the 4 quarter of CY2011.

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The Restoration branch has prepared the followin fact sheets to distribute at public meeting and when some ask about the program.

Redstone Arsenal Fact Sheet - Issue 28, August 2011 - Worker and Vistor Health and Safety Restrictions of Redstone Wells and Springs for Drinking Water Use.

Redstone Arsenal Fact Sheet - Issue 27, September 2010 - Worker Safety During Remediation of RSA-122 Dismantled Lewisite Manufacturing Plants Site

Redstone Arsenal Fact Sheet - Issue 25, October 2007 - Regrouping of Redstone Arsenal Installation Restoration Program Sites for Streamlining Site Cleanup

Restone Arsenal Fact Sheet - Issue 23, Revised october 2007 - Questions and Answers about Perchlorate

Redstone Arsenal Fact Sheet - Issue 22, October 2003 - Making Cleanup Decisions Using a Groundwater-Unit Approach

Redstone Arsenal Fact Sheet - Issue 21, Revised October 2007 - Site Access Control Program

Redstone Arsenal Fact Sheet - Issue 21, October 2003 - Site Access Control Program

Redstone Arsenal Fact Sheet - Issue 20, October 2003 - Updating the Administrative Record File For Time-Critical Removal Actions, Non-Time-Critical Removal Actions And Treatability Studies at Redstone Arsenal, Madison County, Alabama

Redstone Arsenal Fact Sheet - Issue 19, October 2001 - Update of OU-10 On-and Off-Arsenal Environmental Activities

Redstone Arsenal Fact Sheet - Issue 18, May 2001 - Update of OU-10 On-and Off-Arsenal Environmental Activities

Redstone Arsenal Fact Sheet - Issue 16, October 2000 - Facts about Arsenic and Its Health Effects

Redstone Arsenal Fact Sheet - Issue 16, Revised October 2005 - Questions and Answers about Arsenic

Redstone Arsenal Fact Sheet - Issue 15, July 2000 - Questions and Answers about Fencing Select Arsenal Sites

Redstone Arsenal Fact Sheet - Issue 15, Revised May 2001 - Questions and Answers about Fencing Select Arsenal Sites

Redstone Arsenal Fact Sheet - Issue 14, June 2000 - Update of RARE North Plant (OU-10) On-and Off-Site Environmental Activities

Redstone Arsenal Fact Sheet - Issue 13, September 1999 - Public Participation Opportunities In the Environmental Program

Redstone Arsenal Fact Sheet - Revised October 2007 - Public Participation Opportunities In the Environmental Program

Redstone Arsenal Fact Sheet - Revised November 2009 - Public Participation Opportunities In the Evironmental Program

Redstone Arsenal Fact Sheet - Issue 12, Revised January 2007 - Questions and Answers about TEC

Redstone Arsenal Fact Sheet - Issue 12, September 1999 - Questions and Answers about TCE

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Redstone Arsenal Fact Sheet - Issue 11, September 1999 - Public Meeting Update of RARE North Plant (OU-10) Activities

Redstone Arsenal Fact Sheet - Issue 10, October 1997 - Directorate of Environmental Management and Planning; Public Meeting and Comment Period Announced for Proposed Plans for RSA-10, RSA-49 and RSA-55/54

Redstone Arsenal Fact Sheet - Issue 9, June 1997 - Directorate of Environmental Management and Planning; Update on Clean-up Activities at RSA-142

Redstone Arsenal Fact Sheet - Issue 8, March 1997 - Directorate of Environmental Management and Planning; U.S. Army Missile Command (MICOM) TRC Holds Meeting in March for Update

Redstone Arsenal Fact Sheet- Issue 7, September 1996 - Directorate of Environmental Management and Planning; U.S. Army Missile Command (MICOM) EMP beings restoration projects under the new TERC

Redstone Arsenal Fact Sheet - Issue 6, June 1995 - Interim Remedial Action at SWMU RSA-142

Redstone Arsenal Fact Sheet - Issue 5, October 1994 - Corrective Measures at RSA-10

Redstone Arsenal Fact Sheet - Issue 4, October 1994 - Corrective Measures at RSA-49

Redstone Arsenal Fact Sheet - Issue 3, May 1994 - Corrective Measures at Unit 3/Area F

Redstone Arsenal Fact Sheet - Issue 2, May 1994 - Corrective Measures at Unit 2

Redstone Arsenal Fact Sheet - Issue 1, July 1993 - Corrective Measures at Units 1 & 2/Area F and RSA-G

EMD Web Page:
Restoration Home Page
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/res/emd_res.html
The web page was checked on 11/14/2011 and up to date for environmental awareness.

Newspaper:
Title: Public Comment Period - May 19-June 18, 2010
Date: 2 June 2010
Location: T:\DATA\Correspondenc\EMS Training Documents\024.pdf

Title: Explosive Destruction System To Destroy Old Munitions
Date: 7 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\031.pdf

Title: Experts to Destroy Mortar Rounds
Date: 13 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\032.pdf

Title: New Way to Destroy Old Munitions
Date: 21 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\035.pdf

Title: Public Comment Period - May 19-June 18, 2010
Date: 26 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\022.pdf

Title: Planning Under Way for Old Ordance Clean Up
Date: 30 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\050.pdf

Title: Army Monitoring Groundwater
Date: 26 September 2011
Location: T:\DATA\Correspondence\EMS Training Documents\051.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

_____

- RSA 200-6 Hazardous Waste Management
- RSA 200-7 Access Control
- Site Specific Health and Safety Plans
- RCRA Corrective Action Plan
- Release Assessment Work Plan
- Interim Measures Work Plan
- RCRA Facility Investigation Work Plan
- Closure Plan
- Sampling Plan

Redstone, EPA, ADEM, and Army have not yet come together on a Federal Facilites Agreement, however, the tier I team is operating under timelines for completing actions as if they had a signed FFA in place.

Required Permits

None for CERCLA Actions

Following may be required for RCRA Actions
- UIC
- NPDES

HAZARDOUS WASTE
FACILITY PERMIT
PERMITTEE: U.S ARMY GARRISON -REDSTONE
ADDRESS:HUNTSVILLE, MADISON COUNTY
PERMIT NUMBER:AL7 210 020 742
UNITS PERMITTED: 9) HAZARDOUS WASTE STORAGE UNITS (2) THERMAL TREATMENT UNITS (SUBPART X OB Unit and SUBPART X OD Unit)
SOLID WASTE MANAGEMENT UNIT (SWMU) CORRECTIVE ACTION
ISSUANCE DATE: SEPTEMBER 30,2010
EXPIRATION DATE: SEPTEMBER 29, 2020

The Permittee shall request a permit modification whenever changes in operating plans or facility design affect any plan (e.g., closure, groundwater monitoring, post-closure, or corrective action) required or referenced by this permit. The Permittee must submit a written request for a permit modification pursuant to the requirements of ADEM Admin. Code Rule 335-14-8-.04(2) at least 60 calendar days prior to the proposed change in facility design or operation.

The CMI Plan shall be submitted along with a request for permit modification pursuant to ADEM Admin. CodeR. 335-14-8-.04(2), and shall include any applicable fees pursuant

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to ADEM Admin. CodeR. 335-1-6. This modification will serve to incorporate the proposed final remedy, including all procedures necessary to implement and monitor the remedy, into this permit.

A groundwater monitoring well shall not be removed from any monitoring program specified in this permit without an approved permit modification pursuant to Permit Condition I.J.

Required Plans

All sites are requied to have
-Installation Wide Work Plan
-Site Specific Health and Safety Work Plans
-RCRA Corrective Action Plan
-Release Assessment Work Plan
-Interim Measures Work Plan
-RCRA Facility Investigation Work Plan
-Closure Plan
-Sampling Plan
-RCRA Installation Action Plan
-Redstone Arsenal Installation Action Plan
-Corrective Measures Implementation Plan

Required Records

Groundwater Monitoring Records -

Monitoring/Measuring Requiremens

Monitoring for compliance will be done using checklist based on laws and regulations. We are looking at the U.S. TEAM Guide at the present to see if it meets this requirement. The Compliance branch chief and Restoration branch chief have this requirement added ot their annual performance standards.

-EPAS Inspections
-RCRA Facility Assessments
-Weekly inspections
-ADEM Annual Inspection
5-year reviews or as specified in RODs or Decision Documents

Calibration

What Significant Impacts Are

Allowing people to come into contact with soil that is contaminated with hazardous materials without proper knowledge and engineering controls on Redstone Arsenal is a significant impact to the environment.

The spillage of any hazardous material onto the soils of Redstone Arsenal that are not removed and properly disposed would be a significant impact to the environment.

Allowing erosion of soils to runoff into the streams on Redstone Arsenal would be a significant impact to the environment.

Removing contaminats from the soil and groundwater would be a positive significant impact.

Returning land back to benifical use without any restricitions would be a positive significant impact.

Responsible Person(s)

1. DUSD(I&E). The DUSD(I&E), under the authority, direction, and control of the USD(AT&L) and in addition to the responsibilities assigned to the former Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)) in Reference (c), shall:

a. Protect human health and the environment by executing the responsibilities and exercising the authorities of the Secretary of Defense in sections 2701-2708 and 2810 of

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title 10, United States Code (U.S.C.) (Reference (m)), and E.O. 12580 (Reference (o)), as delegated to the DUSD(ES) in Reference (c), and by implementing:

(1) Sections 9601-9675 of title 42, U.S.C. (formally titled the "Comprehensive Environmental Response, Compensation, and Liability Act of 1980" and hereafter referred to as "CERCLA" (Reference (p))).

(2) Part 300 of title 40, Code of Federal Regulations (CFR) (formally titled the "National Oil and Hazardous Substances Pollution Contingency Plan" and hereafter referred to as the "NCP" (Reference (q))).

(3) Sections 6901-6999k of Reference (p) (formally titled the "Solid Waste Disposal Act" but commonly known as the "Resource Conservation and Recovery Act of 1976" and hereafter referred to as "RCRA").

b. Oversee DERP execution, including developing DERP policy and guidance, conducting program reviews, and evaluating DoD Component DERP execution based on the goals and metrics in section 9 of Enclosure 3.

c. Propose updates to DoD 7000.14-R (Reference (r)) to the Under Secretary of Defense (Comptroller) (USD(C)/Chief Financial Officer (CFO), DoD, through the USD(AT&L).

d. Maintain the DERP information system established pursuant to Reference (c) that is the central source for all site and programmatic information; issue annual and ad hoc data calls as required.

e. Coordinate with other Federal agencies and with State, Indian tribal, and territorial governments regarding DERP issues related to their authorities.

f. Respond to congressional requests for information. Pursuant to Reference (c) and in accordance with section 2706 of Reference (m), prepare and issue the Defense Environmental Programs Annual Report to Congress (DEP ARC) (formerly known as the "DERP Annual Report to Congress").

g. Pursuant to Reference (c) and in accordance with DoD fiscal and DERP policy and guidance, comment on and compile the program objective memorandum (POM) for the FUDS Environmental Restoration Account (ERA) and the Defense-Wide ERA, which includes non-Base Realignment and Closure (BRAC) funding for the DUSD(I&E), the Defense Logistics Agency (DLA), and the Defense Threat Reduction Agency. Prepare the budget exhibits for the budget estimate submission (BES) and President's Budget; submit the POM and budget exhibits to the Director, Cost Assessment and Program Evaluation (DCAPE), and the USD(C)/CFO through the Select and Native Programming Data Input System (SNaP).

h. Pursuant to Reference (c), comment on the DoD Component ERA and BRAC Account POM and budget submissions.

i. Oversee the DoD Cleanup Committee (established in Reference (c) as the "Environmental Security Cleanup Committee") and issue its charter.

j. Negotiate and sign agreements to support DERP execution, as appropriate, with other organizations (e.g., the Agency for Toxic Substances and Disease Registry (ATSDR) and the Environmental Protection Agency (EPA)).

k. Review and, if appropriate, concur on Federal facility agreements (FFAs).

l. Provide guidance and oversight of the Defense and State Memorandum of Agreement (DSMOA) program, and of the lead agent for the DSMOA program (the Secretary of the Army) as designated in Reference (c), to ensure program effectiveness.

m. Provide oversight, including guidance, planning, programming, and budgeting of the lead

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agent for the FUDS program (the Secretary of the Army).

n. Evaluate third-party site (TPS) claims when multiple DoD Components are involved and determine which DoD Component will take the lead for cleanup.

o. Review and, if appropriate, approve in writing DoD Component use of:

(1) The act of war provision described in subparagraph 2.d.(8) of Enclosure 3. The DUSD(I&E) will review the DoD Component's rationale for the exclusion to ensure consistency with the DERP combat operations exclusion pursuant to section 2710(d)(2) of Reference (m) and the act of war defense pursuant to section 9607(b)(2) of CERCLA.

(2) Environmental regulators classification of unexploded ordnance (UXO) as a CERCLA hazardous substance or a RCRA statutory waste, other than as described in subparagraph 3.b.(2) of Enclosure 3.

(3) ERA for building demolition and debris removal (BD/DR), pursuant to subparagraph 3.c.(2)(b) of Enclosure 3.

(4) An authority for cleanup other than CERCLA or RCRA, pursuant to subparagraph 4.a.(1)(a)2. and 3. of Enclosure 3.

(5) Property transfers within the DoD that do not conform to the procedures in subparagraphs 10.b.(1)(a) and (b) of Enclosure 3.

2. CHAIR, DoD EXPLOSIVES SAFETY BOARD (DDESB). The DDESB Chair, under the authority, direction, and control of the DUSD(I&E) and in addition to the responsibilities in DoDD 6055.9E (Reference (s)), shall review and approve munitions response explosives safety submissions (MRESS) and munitions response chemical safety submissions (MRCSS) required as part of environmental restoration activities to address munitions and explosives of concern (MEC), in accordance with DoDI 6055.16 and DoD 6055.09-M (References (t) and (u)).

3. HEADS OF THE DoD COMPONENTS WITH DERP RESPONSIBILITIES. The Heads of the DoD Components with DERP responsibilities, under the oversight of the DUSD(I&E) and in addition to the responsibilities in Reference (c), shall:

a. Execute DERP pursuant to Reference (c), sections 2700-2710 of Reference (m), DERP policies and guidance, this Manual, and consistent with applicable statutes (e.g., CERCLA) and regulations at installations or facilities under their jurisdiction. The DoD Components shall protect human health and the environment by exercising those Presidential authorities in sections 9601-9675 of CERCLA and in accordance with the NCP, subject to the concurrent authority of USD(AT&L) and DUSD(I&E).

b. Plan, program, and budget the ERA and BRAC Accounts to execute DERP to meet DoD goals and metrics pursuant to section 9 of Enclosure 3 and in accordance with DoD fiscal and DERP policy and guidance. Prepare the POM and the budget exhibits for the BES and President's Budget; submit to the DCAPE, and the USD(C)/CFO through the SNaP process.

c. Monitor DERP execution and progress and collect and maintain data and documentation by site. Submit updated data to the DERP information system as requested by the DUSD(I&E).

d. Respond to DUSD(I&E) data calls and other requests for information.

e. Forward negotiated FFAs to the DUSD(I&E), the DoD Deputy General Counsel for Environment and Installations (DoD GC(E&I)), and the other Heads of the DoD Components with DERP responsibilities for review and concurrence pursuant to paragraph 6.f. of Enclosure 3. Pursuant to Reference (c), negotiate and sign other types of Federal and State restoration agreements, as appropriate.

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f. Forward a memorandum and supporting documentation to the DUSD(I&E) for review and approval any DoD Component's use of:

(1) The Act of War ineligibility provision, pursuant to subparagraph 2.d.(8) of Enclosure 3.

(2) Environmental regulators classification of UXO as a CERCLA hazardous substance or a RCRA statutory waste, except as described in subparagraph 3.b.(2) of Enclosure 3.

(3) ERA for BD/DR, pursuant to subparagraph 3.c.(2)(b) of Enclosure 3.

(4) An authority for cleanup other than CERCLA or RCRA, pursuant to subparagraphs 4.a.(1)(a)2. and 3. of Enclosure 3.

(5) Property transfers within the DoD that do not conform to the procedures in subparagraphs 10.b.(1)(a) and (b) of Enclosure 3.

g. Serve as the lead agent at DERP sites pursuant to Reference (p); execute lead agent responsibilities; and, pursuant to Reference (c), select preferred alternatives and sign decision documents (DDs).

h. Pursuant to Reference (c), coordinate with Federal, State, Indian tribal, and territorial environmental agencies to execute response actions at DERP sites under the DoD Component's authority.

i. Execute responsibilities as required in agreements between the DoD and other organizations to support DERP execution.

j. Determine the sequence for funding actions at sites by evaluating the relative-risk to human health and the environment posed by chemical contamination and military munitions at each DERP site; use the DUSD(ES) Primer,(Reference (v) hereafter referred to as the "Relative Risk Site Evaluation (RRSE) Primer") or part 179 of title 32, CFR (Reference (w), hereafter referred to as the "Munitions Response Site Prioritization Protocol (MRSPP"), as appropriate pursuant to subparagraph 4.b.(3) of Enclosure 3.

k. Meet all public participation requirements for the environmental restoration process in accordance with Reference (c).

l. Defend TPS claims arising from the alleged ownership, operation, or arrangement for disposal of hazardous substances by their DoD Components in accordance with Reference (c).

4. SECRETARY OF THE ARMY. The Secretary of the Army, in addition to the responsibilities in section 3 of this enclosure, shall:

a. Act as the lead agent for DSMOA pursuant to paragraph 5.8.2.1. of Reference (c), subject to DUSD(I&E) oversight pursuant to paragraph 1.l. of this enclosure. This shall include:

(1) Ensuring that the DSMOA program is operated consistent with policy and guidance.

(2) Interacting with the State and territorial regulatory community on overall management of cooperative agreements (CAs) and DSMOA program funding.

(3) Negotiating DSMOAs for DUSD(I&E) signature; coordinating with all participating DoD Components; notifying the DoD Components of the costs of each CA in a timely manner to enable the DoD Components to plan, program, and budget accordingly; and reporting on program progress.

b. Act as the lead agent for ATSDR pursuant to paragraph 5.8.2.2. of Reference (c). Pursuant to section 9604(i)(6) of CERCLA, ATSDR is responsible for conducting public health

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assessments at all sites on or proposed for the National Priorities List (NPL).

c. Act as the lead agent for and identify to the DUSD(I&E) funding required for the FUDS program, subject to the oversight of the DUSD(I&E) and in accordance with paragraph 1.m. of this enclosure. This shall include:

(1) Maintaining an inventory of all FUDS, tracking activities at FUDS, and reporting program progress.

(2) Determining eligibility of property and projects for FUDS program action and conducting environmental restoration activities at eligible properties on behalf of the DoD Components.

(3) Implementing FUDS policy and guidance and reviewing program execution.

(4) Meeting all public participation requirements for the environmental restoration process at FUDS in accordance with Reference (c).

5. DoD GC(E&I). The DoD GC(E&I), under the authority, direction, and control of the General Counsel of the Department of Defense, shall:

a. Provide legal advice and counsel to OSD organizations and, as appropriate, other DoD Components regarding environmental restoration issues.

b. Serve as the legal advisor to the DoD Cleanup Committee.

Garrison Commander
- As garrison commander is consider the landowner for regulatory purposes. Signs all permits and and environmental agreements, approve record of decision (ROD)/decision documents (DDs) for environmental response actions within delegated approval authority.
- Hold tenant units accountable for complying with the policies and standards of the installation.
- Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.

Director, Director of Public Works - Joe Davis - Supervisory control over Chief, Environmental Management Division

Chief, Environmental Management Division - Terry Hazle - Assists the commander in the following:
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
B. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
C. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
D. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan.
E. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
F. Maintain appropriate environmental records as required by law.
G. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).

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H. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
i. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
J. Assess the long-term resource impacts of all environmental agreements. Coordinate resource implications for agreements through command channels to IMCOM prior to approval.
K. Ensure that non-DOD HM (that is, HM owned and/or used by non-DOD entities) is not stored, treated, or disposed of on the installation unless approved by the ASA (I&E), his or her designee, or higher authority.
L. Signs all environmental cleanup related letters to other federal agencies, state agencies or DOD organizations.
i. Serves as a tier II member of the Alabama Restoration Partnering Group.

Chief, Environmental Compliance Division - Mike Stierwalt -
- Manages the Personel in Environmental Compliance Branch responsible for cleanup of the soils and groundwater that is not eligible for DERA funds.
- Serves as a key staff advisor to the Command Group, project managers, directorates, and all command activities in establishing the U.S. Army Garrison - Redstone position and requirements for dealing with installation contamination and restoration.
- Serves as a key staff advisor for guidance and assistance to installation activities on environmental protection policies and procedures.
- Reviews and approve NEPA documents for environmental effects from contamination.
- Manages a program for cleanup of spills and documentation

Environmental Protection Specalist/Engineer in Compliance Branch -West_
- Plans, develops, organizes, administers, evaluates, and coordinates soil and groundwater restoration for all areas of an installation that is not funded by DERA (RCRA).
- For all assigned IRP projects, reviews and makes determination of the suitability of the contractors site specific Work Management Plan, Field Sampling and Analysis Plan (FSAP), Chemical Data Acquisition Plan (CDAP), Contractor Quality Control (CQC) Plan Safety, Health, and Emergency Response Plan (SHERP).
- Makes recommendations on significant modifications to establish methods, procedures or approaches to solve extremly complex problems.
- Makes recommendations on how the contractor should correct any omission or flaws in the plans.
- Performs Quality Assurance for assigned projects.
- Reviews, negotiates and coordinates the complex effects of unknown and/or unanticipated hazards encountered during a remediation project and recommends modifications to the contractors SHERP to ensure the health and safety of hazardous site workers and surrounding communities are not compromised.
- Evaluates changes necessitated by site conditions, or design errors and omissions.
- Analyzes the intent of plans and specifications to determine whether such features were in fact, excluded from the contract requirements.
- Does inspections for assigned environmental removal/ remediation (HTRW) work sites to review contractor performance and direct changes as necessary to achieve compliance with approved Work Plans, applicable regulations/technical guidance, and all other aspects of the contract.

Chief, Environmental Restoration Division - Terry Delapaz -
- Manages the personel in the Restoration Branch, responsible for cleanup of the soils and groundwater that is eligible for DERA funds.
- Serves as the Chair of the Tier I Redstone Restoration Team.
- Serves as a key staff advisor to the Command Group, project managers, directorates, and all command activities in establishing the U.S. Army Garrison - Redstone position and requirements for dealing with installation contamination and restoration.
- Develops and executes the Installation Action Plan that is funded by DERA.
- Serves as a key staff advisor for guidance and assistance to installation activities on environmental protection policies and procedures.

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- Reviews and approve NEPA documents for environmental effects from contamination.
- Assist the Garrison Commander in the following duties:
a. Organize and chair the installation Technical Review Committee/Restoration Advisory Board (TRC/RAB)

Environmental Protection Specalist - Troy Pitts
- Oversee the access control to contaminated sites on Redstone Arsenal
- Inspects and records the access control devices on all CERCLA sites on Redstone Arsenal.

_____
IRP

•The IC will organize and chair the installation TRC/RAB, when required (AR 200-1, para 1-27). The IC will be responsible for all IRP projects on the installation.

•The EC will:
* monitor proposed actions and programs within their commands
* task the appropriate staff with preparation of Eas and EISs and development of public involvement
* assure that appropriate environmental documentation is prepared and forwarded to the appropriate proponent
* initiate the preparation of necessary environmental documentation and assess the environmental consequences of proposed programs and projects
* coordinate appropriate environmental documents and public affairs initiatives with MACOM, HQDA agencies, and state and Federal regulatory agencies
* assist in the review of environmental documents prepared by the DoD and other Army or Federal agencies, as requested
* ensure that proposals for real property transaction concerning installations included in the IRP will be immediately reported through channels to HQDA (ENVR-E)
* assign an On-scene Coordinator/Remedial Project Manager (OSC/RPM) for all ongoing IRP projects on the installation.

•OSC/RPM will act as the Ics representative on all IRP matters and perform the duties described in 40 CFR 300.33(b). The OSC/RPM will also:
* coordinate with the National Guard Bureau (NGB); U.S. Army Reserve Command (USARC), other Major Commands, U.S. Army Environmental Center (USAEC), and the Corps of Engineers:
* on all proposals for removal and remedial action
* on the installation's POC for regulatory agencies
* on monitoring the activities of contractors as requested
* on reviewing, and comment on draft reports prepared by USAEC or the Corps of Engineers on IRP activities
* on reviewing response plans and recommendations for IRP response actions and proposed future actions
* ensure that currently operating facilities are not and do not become sources of hazardous materials contamination
* ensure that USEPA, state, regional, and local officials have adequate opportunity for timely review and comment on proposed activities, developing, implementing and maintaining a community relations program for IRP activities that meets all regulatory guidelines
* establish an administrative record of the installation that is included or proposed for inclusion on the National Priorities List (NPL).

•The USEPA will establish and recommend sites for inclusion on the NPL.

•The PAO will establish the necessary supporting Public Awareness Programs.

USACE Support to program: The US Army Environmental Center (AEC) is the program manager for the Army’s DERP. Corps of Engineers Districts support the execution of the IRP and MMRP for many installations. The EM CX stand ready to support AEC, and Corps HQs, Divisions and Districts.

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CX support to program: The EM CX does not execute response actions but assists the AEC and USACE at all levels in their performance of Army IRP activities. Technical specialists are assigned for numerous EM CX-related topics. AEC and USACE Divisions and Districts may access various CX technical specialists and other services through designated CX Points of Contact, specifically assigned for each USACE Division and District, or the Army IRP Program Support Manager.

The CX is involved in activities supporting the program including representation on Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP), Interstate Technology and Regulatory Council (ITRC), Environmental Data Quality Workgroup (EDQW) and other Army and multi agency work groups that provide guidance and input to the execution of the program. The EM CX provides cost engineering support for development and review of environmental liability estimates for remedial and compliance projects. In addition the CX staff provides cost engineering along with environmental expertise for the development and maintenance of the Remedial Action Cost Engineering Requirements (RACER) cost estimating software. This includes development and maintenance of models, assemblies, and line items. The CX also is involved with the CERCLA five year review program for Army installations, to include execution of the reviews, quality assurance review of five year reviews completed by others, archiving completed reviews and tracking recommendations and their implementation. The CX has numerous training courses, and workshops available.

Corps of Engineers, Huntsville Center is responsible for providing program management, technical review, and safety support for site activities that involve chemical warfare munitions. They are a member program management team for the Interim Measures for the 17 suspected chemical warfare sites. They provide assistance in the development and review of project deliverables in relation to the interim measures program to include the siting and design of necessary facilities. They are responsible for the oversight of the recovery action for chemical agent contaminated material and chemical warfare munitions. They are providing assistance in the development of a cost to complete analysis for the interim measures program. They are also assisting in the coordination of the on-site real time air monitoring and chemical agent sampling with Chemical, Biological, Radiological, Nuclear, and High Yield Explosives Analytical Remediation Activity (CARA) and Edgewood Chemical Biological Center (ECBC)

Chemical Material Agency is responsible for providing program management and technical support for site activities that involve recovered chemical warfare materials and potential chemical agent contaminated media. They are a member of the program management team for the Interim Measures for the 17 suspected chemical warfare sites. They provide assistance in the development and review of project deliverables in relation to the interim measures program to include the siting and design of necessary facilities. They are responsible for the management and oversight of the destruction of recovered chemical warfare material on Redstone Arsenal. They are managing and staffing the historic records review and the production of a document that summarizes the review.

CARA- Chemical, Biological, Radiological, Nuclear, and High Yield Explosives Analytical Remediation Activity is responsible for assistance with field activities at sites with the probability of encountering chemical agent. They provide assistance in the development and review of project deliverables in relation to air monitoring and laboratory analysis for chemical agent. The will conduct air monitoring and laboratory analysis in support of investigation activities at sites that are suspect of containing chemical agent. They will provide explosives, ordnance, and disposal personnel to support field activities at sites where there is a potential of encountering munitions and explosives of concern. They provide support and execution of the destruction of recovered chemical warfare munitions.

ECBC- Edgewood Chemical Biological Center is responsible for assistance with field activities at sites with the probability of encountering chemical agent. They provide assistance in the development and review of project deliverables in relation to air

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monitoring and laboratory analysis for chemical agent. The will conduct air monitoring and laboratory analysis in support of investigation activities at sites that are suspect of containing chemical agent.

Resources

Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38538

Resources needed to restore the Redstone Arsenal is contained in two documents. One is the RCRA Installation Action Plan for Redstone Arsenal and the other is the Redstone Arsenal - Installation Action Plan. The later is the plan for those contaminated sites that qualify for DERA funding and the first plan is for those sites that are restored using OMA money. OMA money is controled by the southeast Regional Office of IMCOM and the DERA money is controlled by the Army Environmental Command. Both plans are for 10 years. Plans may be examined at the Garrison Environmental Office on the 3rd floor of building 4488.

Enviromental Database hours - 200 hours.

Garrison cost for the management of the restoration program is calculate by Chief of the Restoration Branch and submitted to the Army Environmental Center as a requset for funds. Funds are paid from the Army Environmental Restoration Account. Funds are sent as a TAD to the Garrison Resources Management Office for use by the Restoration Branch.

Sustainability

Consequences

Consequences of not restoring the land would mean that there is no control for potection of human health or the environement with possible harm to the community, the mission or the environment.

Not cleaning up the installation in accordance with the Redstone Resource and Conservation Recovery Act Permit could lead to fine, peanlities and possible criminal responsibility and a loss of our ability to generate, treate, store, and handle hazardous waste causing an inbility of many organizations on Redstone Arsenal to perform the mission on Redstone Arsenal.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

What did we do to make people aware of the restoration program? What can we do?
Change required permits to RCRA permit required.

Location

All sites are identified in the Garrisons Geographical Information System that is a ARCGIS driven program. Site boundries are part of this identifications

The detail of each restoration site is kept in a database developed and maintained by the Garrison Environmental Management Division called Redstone Sites. Maps, descriptions, correspondence with regulators, cost, and just about any other informatioin that would be needed to manage the restoration of the site is included in this database.

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
4	**Hazardous Waste Management**	Dan Seaver, Brian Mason, Austin York

Discussion

Hazardous Waste Management is an environmental element of many different processes on Redstone Arsenal. There are many environmental laws and regulations are associated with Hazardous Waste Management. Hazardous Waste Management is a significant environmental aspect that will be managed as part of the Redstone Arsenal Environmental Management System.

Impacts or possible impacts

- Expose People, plants and animals to toxic contamination
- Permitting requirements
- Cleanup requirements and compliance for storage, disposal, and reporting
- Emergency planning necessary
- Recycling, reuse, recovery opportunity
- Need proper and appropriate facilities

Goals

Comply with all federal, state, and local laws and regulations.

Continually reduce the volume of HW generated by Redstone Arsenal and maintain compliance with pertinent HW regulations.

Reference ADEM's RCRA inspection of 22-23 August 2011, all noted deficiencies will be corrected.

Findings:

1. Daily Operational Logs missing per cent chance of rain.

    Corrective Measures: Daily Operational Logs will be changed to add Per cent chance of rain.

Possible Findings (ADEM had to go back and discuss these items):

1. RCRA igloos not inspected when empty.

    Corrective Measures: All RCRA igloos will be inspected weekly regardless if empty. A Key Control Procedure and Written Letter of Instruction for RCRA Igloo Inspections will be developed.

2. Chugach satellite storage area not at or near point of generation.

    Corrective Measures: Will take whatever measures ADEM deems necessary to resolve if this remains an issue with ADEM after their discussion in Montgomery.

3. DLA Dispositon Services Igloos had inadequate aisle space.

    Corrective Measures: DLA Dispositon Services has already agreed to move storage racks to provide additional aisle space.

4. OB/OD Satellite Storage Area - Possible exceedance of 55 gallon storage limit.

    Corrective Measures: Will take whatever mesures ADEM deems necessary to resolve if this remains an isue with ADEM after their discussion in Montgomery.

Measurable Targets

-Develop and complete a regulatory checklist based on laws and regulations for the aspect of Hazardous Waste Management by September 20, 2009 for approprate operations on Redstone Arsenal. Completed. The regulatory checklist was completed in August 2009 and is located under the monitoring tab.

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For the top 20 hazardous wastes by weight; achieve a 5% reduction from the previous year. Work in progress, although the top 20 waste streams vary from year to year.

In an effort to reduce disposal of hazardous waste throughout Chugach facilities I told Arlis Dudley, the person responsible for hazardous waste management at the Chugach 90-day storage facility at building 5423 that all waste lithium and NICAD batteries which normally are sent out for disposal would be offered for sale. I contacted the DRMO and requested them to offer 1964 pounds of used NICAD and lithium batteries for sale. The batteries were offered on Invitation for Bid 33-1002 with a bid opening date of 4 November 2010. No one bidded on the batteries. I will request the DRMO to perform another sales attempt at a later date.

In an effort to reduce generation of hazardous waste I talked to the workers at the Chugach waste paint consolidation area at building 5423 and told them to not mix the non-flammable paint with the flammable paint when consolidating. This will reduce the amount of waste paint that is regulated as hazardous waste.

Letters of Instructions

Legal Requirements

B. Federal Legislation

•The Resource Conservation and Recovery Act (RCRA). RCRA of 1976, which amended the Solid Waste Disposal Act, addresses nonhazardous (Subtitle D) and hazardous (Subtitle C) waste management activities. The Hazardous and Solid Waste Amendments (HSWA) of 1984 strengthened RCRA's waste management provisions and added Subtitle I, which governs underground storage tanks (USTs). This section addresses Subtitle C requirements. See Solid Waste Management for Subtitle D requirements and Storage Tank Management for Subtitle I requirements [Revised March 2000].

Regulations promulgated pursuant to Subtitle C of RCRA (40 CFR 260 through 299) establish a "cradle to grave" system governing hazardous waste from the point of generation to disposal. RCRA hazardous wastes include the specific materials listed in the regulations (commercial chemical products designated with the code P or U, hazardous wastes from specific industries/sources designated with the code K, or hazardous wastes from non specific sources, designated with the code F) or materials that exhibit a hazardous waste characteristic (ignitability, corrosivity, reactivity, or toxicity and designated with the code D).

Regulated entities that generate hazardous waste are subject to waste accumulation, manifesting, and record keeping standards. Facilities generally must obtain a permit either from USEPA or from a state agency that USEPA has authorized to implement the permitting program if they store hazardous wastes for more than 90 days before treatment or disposal. Facilities may operate less- than-90-day tanks or containers of hazardous wastes without a permit. Subtitle C permits contain general facility standards, such as contingency plans, emergency procedures, record keeping and reporting requirements, financial assurance mechanisms, and unit specific standards. RCRA also contains provisions (40 CFR 264, Subpart S and Section 264.101) for conducting corrective actions that govern the cleanup of releases of hazardous waste or constituents from solid waste management units at RCRA treatment, storage, and disposal facilities.

Many operations and organizations may have numerous operations that result in the generation and management of different types of solid and hazardous waste. These operations may be subject to specific parts of RCRA, depending on the type of waste generated, its management (e.g., stored, transported), and its disposal. Most RCRA requirements are not industry specific but apply to any entity that generates, transports, treats, stores, or disposes of hazardous waste. The following are some important RCRA regulatory requirements:

•Identification of Solid and Hazardous Wastes (40 CFR 261) delineates the procedure every generator must follow in determining whether the material in question is considered a hazardous waste or solid waste or is exempted from regulation.

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•Standards for Generators of Hazardous Waste (40 CFR 262) establish the responsibilities of hazardous waste generators. These include obtaining a USEPA identification number, preparing a manifest, ensuring proper packaging and labeling, meeting standards for waste accumulation units, and meeting record keeping and reporting requirements. Providing they meet additional requirements described in 40 CFR 262.34, generators may accumulate hazardous waste for up to 90 days (or 180 or 270 days depending on the amount of waste generated and the distance the waste will be transported).

•Land Disposal Restrictions (LDRs) (40 CFR 268) are regulations prohibiting the disposal of hazardous waste on land without prior treatment. Under the LDR program, materials must meet LDR treatment standards prior to placement in a RCRA land disposal unit (landfill, land treatment unit, waste pile, or surface impoundment). Generators of waste subject to the LDR must provide notification of such to the designated TSD facility to ensure proper treatment prior to disposal.

•Used Oil Management Standards (40 CFR 279) impose management requirements affecting the storage, transportation, burning, processing, and re refining of the used oil. For parties that merely generate used oil, regulations establish storage standards. For a party considered a used oil processor, re-refiner, burner, or marketer (one who generates and sells off specification used oil directly to a used oil burner), additional tracking and paperwork requirements must be satisfied. These requirements are addressed in the section titled POL Management.

•Tanks and Containers, as well as any unit, used to store, treat, or dispose of hazardous waste, are regulated under RCRA. Tanks and containers used to store hazardous waste with a high volatile organic concentration must meet emission standards under RCRA. Regulations (40 CFR 264 265, Subpart CC) require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units. These regulations apply to all facilities that store such waste, including large quantity generators accumulating waste prior to shipment off-site. Storage tanks are addressed in the section titled Storage Tank Management.

•Boilers and Industrial Furnaces (BIFs) that use or burn fuel containing hazardous waste must comply with design and operating standards. BIF regulations (40 CFR 266, Subpart H) address unit design, provide performance standards, require emissions monitoring, and restrict the type of waste that may be burned.

•The Federal Facility Compliance Act (FFCA) of 1992. This act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive requirements relating to RCRA solid and hazardous waste laws and regulations. Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, addresses the issue of munitions, and discusses waste discharges to Federally owned treatment works (FOTWs).

•EO 12088, Federal Compliance with Pollution Standards. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, “Pollution Control Plan” was revoked by EO 13148 [Revised October 2002].

P.L. 98-616, Resource Conservation and Recovery Act (RCRA)
This is the Federal law that governs the disposal of solid waste. Subtitle D of this act, as last amended in November 1984, Public Law (PL) 98-616, 42 U.S. Code (USC) 6941-6949a, establishes Federal standards and requirements for state and regional authorities

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respecting solid waste disposal. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941). RCRA (pronounced rick-rah) gave EPA the authority to control hazardous waste from the cradle-to-grave. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous wastes.

The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. RCRA focuses only on active and future facilities and does not address abandoned or historical sites (see CERCLA).

HSWA (pronounced hiss-wa)¶The Federal Hazardous and Solid Waste Amendments are the 1984 amendments to RCRA that required phasing out land disposal of hazardous waste. Some of the other mandates of this strict law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

Federal Facility Compliance Act (FFCA), October 6, 1992
This Act provides for a waiver of sovereign immunity with respect to federal, state, and local procedural and substantive requirements relating to the Resource Conservation and Recovery Act (RCRA) solid and hazardous waste laws and regulations at federal facilities. Federal agencies are responsible for compliance and government agents or employees are subject to criminal sanctions under any federal or authorized state solid or hazardous waste law. In addition, EPA is authorized to issue Administrative Orders to Federal agencies and may, as are authorized states, levy fines in the event of non-compliance (42 U.S.C. 6961). It also directs the Environmental Protection Agency to make annual inspections of facilities owned or operated by the United States which treat, store, or dispose of hazardous waste to insure compliance with applicable regulations. Authorized states may also conduct inspections to insure compliance with authorized State hazardous waste programs (42 USC 6927(c)). Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, and discusses waste discharges to federally owned treatment works

Part 260-279 Title 40, code of Federal Regulations

DOD 4500.9-R Chapter 204

Parts 171-178 Title 49, Code of Federal Regulations

AR 200-1, dated 21 February 1997
Environmental Protection & Enhancement
This regulation provides a brief overview of environmental programs and requirements. It does not provide a complete listing of requirements or detailed guidance on complying with environmental laws and regulations. In addressing environmental issues, readers must consult the applicable laws, regulations, and guidance documents referenced in this regulation. This regulation supplements Federal, state, and local environmental laws for preserving, protecting, and restoring the quality of the environment. It also integrates pollution prevention, natural and cultural resources, and the National Environmental Policy Act (NEPA) into the Army Environmental Program.

P.L. 101-549, The Clean Air Act Amendments of 1990 (CAAA90)
This act, Public Law (PL) 101-549 (42 U.S. Code (USC) 7401-7671q), is currently the Federal legislation regulating the prevention and control of air pollution. As a result of this act, regulations have been promulgated concerning the control, monitoring, and reporting of emissions from municipal solid waste landfills (MSWLFs).

E.O. 12088, Federal Compliance with Pollution Standards, October 13, 1978

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This EO requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities the agency funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. [Replaced with EO 13148]

The Occupational Safety and Health Act (OSHA)
This act, last amended in November 1990, 29 U.S. Code (USC) 651-678, is a Federal statute that governs the issues related to occupational safety and health. The purpose of this act is to assure every working man and woman in the nation safe and healthful working conditions and to preserve our human resources by, among other things, providing for the development and publication of occupational safety and health standards, providing for an effective enforcement program, and providing for appropriate reporting procedures with respect to occupational safety and health. These procedures will help achieve the objectives of this act and accurately describe the nature of the Occupational Safety and Health Act (29 USC 651(b)(9)(10)(12)).

The Solid Waste Disposal Act of 1965
This act requires that Federal facilities comply with all Federal, state, interstate, and local requirements concerning the disposal and management of solid wastes. These requirements include permitting, licensing, and reporting.

The Hazardous Materials Transportation Act of 1975
This act, as last amended in November 1990, 49 USC 1801- 1819, et al., is the federal legislation that governs the transportation of hazardous materials in the nation. The policy of Congress is to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the nation adequately against the risks to life and property that are inherent in the transportation of hazardous materials in commerce (49 USC 1801).

Hazardous Waste Program: the basics

The rules for ADEM’s Hazardous Waste Program are found in Division 14 of the ADEM Administrative Code, pursuant to Ala. Code §§22-30-1 to 22-30-24. Division 14 regulations contain standards applicable to generators and transporters of hazardous waste and facilities that treat, store or dispose of hazardous waste. Division 14 also sets forth the permitting requirements for treatment, storage and disposal facilities and transporters of hazardous waste and for corrective action at sites where hazardous wastes may have been disposed of without a permit. These rules are at least as stringent as the federal Resource Conservation and Recovery Act (RCRA) regulations administered by the US Environmental Protection Agency (EPA).

ALABAMA Laws and Regulations

The Land Division administers the delegable provision of RCRA. EPA has promulgated regulations that ADEM must follow in administering the provisions of RCRA in the State of Alabama. All federal hazardous waste rules are published in the Federal Register and subsequently Land Division undergoes a rulemaking process to adopt each regulation and any modifications to existing regulations into Division 14 of the ADEM Administrative Code. The Land Division may adopt regulations more restrictive than RCRA in certain instances.

The Hazardous Waste Program is administered within Land Division by the Governmental Hazardous Waste Branch (GHWB) and Waste Programs Branch (WPB) for hazardous waste permitting, compliance inspections and enforcement and hazardous waste corrective action. Hazardous waste transporter permitting and hazardous waste financial assurance is administered by the Environmental Services Branch (ESB).
Solid Waste Program: the basics

The rules for ADEM’s Solid Waste Program are found in Division 13 of the ADEM Administrative Code, pursuant to Ala. Code §§22-27-1 to 22-27-49. Division 13 regulations

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contain standards applicable to the design and operation of solid waste landfills and set forth the permitting requirements for solid waste disposal facilities. Collection and transportation of household solid waste is regulated by the Alabama Department of Public Health.

The Solid Waste Program is administered within Land Division by the WPB for solid waste landfill permitting, compliance inspections and enforcement and corrective action. WPB also inspects illegal solid waste disposal sites and investigates complaints regarding solid waste disposal. Enforcement action is taken as necessary to assure proper disposal of all solid waste in Alabama.

Other requirements -

A. U.S. Army Regulations (ARs) and Policies
•AR 200-1, Environmental Protection and Enhancement. This AR, effective 27 December 2007, supersedes the prior versions of AR 200-1. In relation to hazardous waste, it is the policy of the Army (AR 200-1, para 10-1a):
1. Hazardous waste disposal costs are those costs associated with the collection, treatment, storage, transportation and disposal of hazardous wastes. This includes all Defense Reutilization and Marketing Service (or other contract agent) costs directly related to the packaging and offsite shipment of the wastes. It does not include the disposal of special wastes defined as non-hazardous unless otherwise defined as hazardous by State and local regulations, or country-specific Final Governing Standards (FGS); asbestos; chemical and biological agent waste; radioactive waste; and regulated medical wastes (RMW).
a. Garrisons must directly charge or seek reimbursement from non-Army tenants and activities funded through an operating fund (Defense Business Operating Fund and Army Working Capital Fund), a procurement fund (Procurement of Ammunition, Army), a research and development fund (Research, Development, Test, and Evaluation and Army Test and Evaluation Command activities), and other DOD funded activities (primarily Defense Logistics Agency, Medical Command, and Defense Commissary Agency). Though appropriated funds can be used for a non-appropriated fund activity (Category C), it is subject to the availability of funds of HQ, IMCOM. Special installations will pay for hazardous waste disposal. Excess or expired hazardous materials must be handled in accordance with AR 710-2 and garrison procedures.
b. Hazardous wastes generated under service, facility, maintenance or construction contracts (construction demolition debris, paints, soil disposal, disposal of sand from ranges, sludge from wash racks, oil/water separators, water treatment plants, and so forth.) should not be a separate cost and funded as part of the original contract.
c. The Garrison environmental office will be considered the generator, for funding purposes, of orphan wastes found on post, and wastes from a household hazardous waste collection program.
2. Comply with all applicable Federal, State, and local HW regulations, and FGS.
3. Effectively manage HW and reduce its generation.
4. Minimize the need for Army-owned or operated permitted HW treatment, storage, and disposal facilities.
5. Minimize HW generation through pollution prevention actions, for example, source reduction, material substitution, and recycling/reuse. Where cost effective and timely, implement pollution prevention solutions to reduce or eliminate compliance requirements.
6. Prohibit the storage of HW in underground storage tanks (USTs), except where allowed by FGS.

The Army’s hazardous waste goal is to continually reduce the volume of hazardous waste generated by Army installations, and maintain compliance with pertinent hazardous waste regulations (AR 200-1, para 10-1c).

AR 200-1 addresses environmental responsibilities of all Army organizations and agencies. Specifically, this regulation applies to:
1. Active Army, Army National Guard/ Army National Guard of the United States, and United States Army Reserve.
2. Tenants, contractors, and lessees performing functions on real property under

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jurisdiction of the Department of the Army (for example, Army and Air Force Exchange Service (AAFES), Defense Commissary Agency (DECA)).
3. Activities and operations under the purview of the Army even when performed off installations.
4. Formerly used defense sites (FUDS) and other excess properties managed by the Army.

As used throughout AR 200-1, the term Army National Guard includes the Army National Guard of the United States.

The terms "Army environmental programs" and "Army Environmental Program" must be read in context. All Army organizations, regardless of their organizational level or chain of command, have environmental responsibilities as part of their functions; these environmental responsibilities must be incorporated into the planning, programming, budgeting, and execution of their respective missions. Each organization must program and fund its environmental activities from the appropriate account of the proponent's operating budget, not necessarily an environmental account. Being mindful of the context in which requirements are articulated will help define the scope of the "program" being addressed and will preclude inappropriate resourcing decisions or expectations.

Contracts to operate Government-owned facilities will reference AR 200-1 and will designate by specific citation the applicable provisions [Added October 2007].
B. Department of Defense (DoD) Directives and Instructions
•The Summary of Change for the 28 September 2007 version of AR 200-1 states that this revision of AR 200-1 "Implements applicable portions of ……. DoD 4160-21-M… DoDI 4715.6…" Therefore, the following are no longer cited separately in this checklist:
•DoD 4160.21-M, Defense Material Disposition Manual,
•DoD Instruction (DoDI) 4715.6, Environmental Compliance.

•DoD 6055.9, DoD Explosives Safety Board (DDESB) and DoD Component Explosives Safety Responsibilities. This directive, dated 29 July 1996, outlines the responsibilities of the DDESB and designates the Army as the DoD Executive Agent for DoD emergency response to transportation mishaps involving ammunition and explosives and implements the requirements of DoD 6055.9-STD [Added October 2002].

•DoD 6055.9-STD, DoD Ammunition and Explosives Safety Standards. This standard, dated July 1999 establishes uniform safety standards applicable to ammunition and explosives, to associated personnel and property, and to unrelated personnel and property exposed to the potential damaging effects of an accident involving ammunition and explosives during their development, manufacturing, testing, transportation, handling, storage, maintenance, demilitarization, and disposal [Added October 2002].

•DoD Policy to Implement the EPA's Military Munitions Rule. This policy, dates 1 July 1998, provides detailed information on the DoD interpretation of how EPA's regulations on waste military munitions (40 CFR 264 and 265) [Added October 2002].

•Under Secretary of Defense Memorandum, Revised Pollution Prevention and Compliance Metrics. This memorandum, dated 12 October 2004, publishes the new metrics and definitions with implementation beginning in 2005. The following goals are established in the memorandum [Added January 2005]:
1. Efficiently manage hazardous waste in order to minimize life-cycle costs and future liabilities, protect environmental resources, and enhance operational flexibility
2. Promote efficient investments in pollution prevention to reduce the quantity of hazardous waste, protect strategic environmental

Training Requirements

Permitted TSDF Requirements - The operation of a TSDF is subject to regulation and permitting under Federal and state regulations. These regulations are both administrative and technical in nature. The administrative standards require that various plans be developed to ensure that emergencies can be dealt with, waste received is properly identified, and operating personnel are adequately trained to operate the TSDF and respond to emergencies.

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the 40 CFR Section 264.16 - all persons handling hazardous waste must successfully complete training that teaches them to comply with Section 264.16 requirements.

People who sign manifest must have systematic training that ensures and employee has familiarity with provisions of CFR 49 Chapter I Subpart H - 49 CFR 172-170

Training is required for the implementation of the response plan. (49 CFR 194.117)[Revised April 2005].

(NOTE: No operator is relieved from the responsibility to ensure that all response personnel are trained to meet the OSHA standards for emergency response operations in 29 CFR 1910.120, including volunteers or casual laborers employed during a response who are subject to those standards pursuant to 40 CFR 311.)

Training programs for LBP activities are required to be accredited. (40 CFR 745.225)[October 1996, Reviewed March 2000].

Training records must be maintained for all staff that manages hazardous waste. (40 CFR 262.34(a)(4), 265.16(d), and 265.16(e))[Reviewed October 2001].

Personnel who handle hazardous waste must meet certain training requirements. (40 CFR 262.34(a)(4) and 265.16(a) through 265.16(c))[Reviewed October 2001, Revised July 2004, Revised July 2006]. Training will include,
-contingency plan implementation (emergency procedures, equipment, and systems)
-key parameters for automatic waste feed cut-off system
-procedures for using, inspecting, and repairing emergency and monitoring equipment
-operation of communications and alarm systems
-response to fire or explosion
-response to groundwater contamination incidents
-response to leaks or spills.

(NOTE: For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training, provided that the overall facility training meets all the requirements of this checklist item.)

TSDFs must meet personal training requirements for specific personal. (ADEM Admin. Code R. 335-14-5-.02(7) and 335-14-6-.02(7))[Added April 2006; Revised April 2008].

All who work directly with chemical agents and ammunition are required to receive enough training to enable them to work safely and to understand the relative significance of agent exposures. (DoDD 6055.9, para 4.3; DoD 6055-9 STD, para C11.6.2)[Added April 2003].

Awareness

EMD Web Page
The hazardous waste management page starts at,
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/hazmatwaste/Waste.html
The hazardous waste management page was checked by Terry Hazle on 11/14/2011 by Terry Hazle. Page could use some updating but is OK for awareness.

Newspaper:
Title: Public Comment Period - May 19-June 18, 2010
Date: 2 June 2010
Location: T:\DATA\Correspondenc\EMS Training Documents\024.pdf

Title: Explosive Destruction System To Destroy Old Munitions
Date: 7 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\031.pdf

Title: Experts to Destroy Mortar Rounds
Date: 13 July 2010

Location: T:\DATA\Correspondence\EMS Training Documents\032.pdf

Title: New Way to Destroy Old Munitions
Date: 21 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\035.pdf

Title: Arsenal Acts to Reduce Hazardous Waste
Date: 24 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\007.pdf

Title: Public Comment Period - May 19-June 18, 2010
Date: 26 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\022.pdf

Title: Planning Under Way for Old Ordance Clean Up
Date: 30 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\050.pdf

Title: Army Monitoring Groundwater
Date: 26 September 2011
Location: T:\DATA\Correspondence\EMS Training Documents\051.pdf

Title: Chemical Stockpile Destroyed at Anniston
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\069.pdf

Communications

The Integrated Solid Waste Management Plan was updated on 9 July 2013 to reflect FY12 Diversion Rates.

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Operational Controls are defined in Garrison Regulation RSA 200-6

AMRDEC, RTTC, DOL SOPS (SME needs to come up with a list of these SOPS to list here)

For control of keys to Hazardous Waste storage Igloos, the Key Control SOP is located on T drive: T/Env/IC. Following is SOP:

MEMORANDUM FOR PERSONNEL CONCERNED

SUBJECT: Hazardous Waste Permitted Igloo Key Control SOP

1.Responsibilities:
a.Key Control Officer (KCO) - John Souza – Building 4488, room A-332
(1)Will establish and monitor the key control program for the permitted hazardous waste storage igloos.

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(2)Will issue all keys by igloo number to the organizations requiring long term storage using DA Form 5513.
(3)Will ensure required weekly inspections are completed and documentation is correct for all seven igloos managed by the Environmental Management Division and covered by the permit.

b. Organization Requiring Storage
(1)Will sign out key from KCO using DA Form 5513.
(2)Will ensure igloo is inspected weekly and DRMS Form 1713 is completed for each inspection.
(3)Will fax (876-0887) or email (john.souza1@us.army.mil) a copy of completed DRMS Form 1713 to the Environmental Management Division after each inspection.
(4)Will ensure personnel inspecting igloo have received training required under 40CFR 264.16.
(5)Will indicate familiarity with this memo by signing below the following statement:

"I have read and understand the requirements of section b. of this memorandum"

Signed _____ Date_____

Required Permits

RCRA Storage, Treatment, Disposal of Hazardous Waste Permit - (AL7 210 020 742)

Registration of Hazardous Waste Activity

Construction and Debris Permit for Landfill - (45-03)

HAZARDOUS WASTE
FACILITY PERMIT
PERMITTEE: U.S ARMY GARRISON -REDSTONE
ADDRESS:HUNTSVILLE, MADISON COUNTY
PERMIT NUMBER:AL7 210 020 742
UNITS PERMITTED: 9) HAZARDOUS WASTE STORAGE UNITS (2) THERMAL TREATMENT UNITS (SUBPART X OB Unit and SUBPART X OD Unit)
SOLID WASTE MANAGEMENT UNIT (SWMU) CORRECTIVE ACTION
ISSUANCE DATE: SEPTEMBER 30,2010
EXPIRATION DATE: SEPTEMBER 29, 2020

A modification to the Part B Permit has been prepared identifying AMRDEC as the new operator of the OB/OD facility.

Required Plans

Hazardous Waste Minimization Plan

Integrated Solid Waste Management Plan

Internal Assessment Plan (IAP)

Redstone Arsenal Hazardous Materials/Waste Management Program. Hazardous Materials/Waste Management Plan.

Required Records

Manifest of Hazardous Waste

Weekly 90 Day Storage Areas Inspection Records

Weekly 1 Year Storage Buildings Inspection Records

Waste Profile Sheets

Hazardous Waste Log

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Biennial Hazardous Waste Report

Records of Waste going to C&D Landfill

NEPA documentation for Federal Actions

Environmental Training Records

Monitoring/Measuring Requiremens

Lab Reports of Hazardous Waste Monitoring Well Records

US TEAM Guide

Internal Assessment Plan

The inspection checklist for the hazardous waste container storage areas at the Part B permitted storage igloos is the DRMS Form 1713 which is included in the Part B permit.

The inspection checklist for hazadous waste satellite accumulation areas and 90-day storage facilities is located on the T drive at: T:\DATA\EPAS\Inspection Checklist.

Calibration

1. Calibration of the DLA Distribution Services Facility scales. These are the offical scales that are used to weigh hazardous waste prior to shipping for disposal. Hazardous waste disposal charge is based on the total weight of containers removed from the DLA Distribution Services Facility. The last calibration was performed on 8 February 12, by Weightec. Scales are calibrated annually.

3. Calibration of the Chugach Federal Solution Inc. scales. These are the scales that are used to weigh hazardous waste prior to taking to the DLA Disposition Services Facility. Hazardous waste disposal charge is based on the total weight of containers removed from the DLA Distribution Services Facility. The last calibration was performed on December 26, 2012 next scheduled calibration is dues December 2013. The scales are calibrated annually.

3. HW Storage Areas - All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure they are properly operating in time of emergency.(40 CFR Part 264.33). The equipment at permitted and less than 90-day storage facilities is tested during weekly inspection.

Updated 9 July 2013.

What Significant Impacts Are

Releases to environment of any hazardous waste presents a significant environmental impact.

Not following established laws and regulations is a significant impact to the environment. these include:
- improper storage
- improper handling
- improper recordkeeping

Uncontrolled exposure to hazardous waste could cause a significant impact.

Violation of RCRA or related regulation would be a significant impact.

Responsible Person(s)

RESPONSIBILITIES.

a. The Garrison Commander (IMSE-RED-ZA), is responsible for:

(1) Establishing and conducting hazardous waste procedures IAW AR 200-1.

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(2) Maintaining routine liaison with the DRMO servicing Redstone Arsenal to maintain current information on storage and disposal of hazardous waste.

(3) Serving as chairman of the Environmental Quality Control Council (EQCC).

b. The Chief, Environmental Management Division is responsible for:

(1) Overall management of hazardous waste (as defined in the glossary) and central coordination of the waste management program at Redstone Arsenal.

(2) Assisting in the disposal of hazardous wastes, which fail to meet the handling criterion of DRMO and do not lend itself to recycling or reuse.

(3) Performing or coordinating surveys of hazardous material handling activities and hazardous waste generation sites. These surveys will evaluate waste management practices of generators and will be followed up with guidance or requirements for corrective action where necessary.

(4) Maintaining records and serving as the point of coordination with all federal, state, and local authorities on matters concerning material/waste management.

(5) Ensuring compliance with the laws, procedures, and regulations governing hazardous waste by the activities and tenants of Redstone Arsenal.

(6) Providing guidance to assist generators in obtaining the analysis of hazardous waste and suspected hazardous wastes.

(7) Notifying Commander, US Army MEDDAC, Preventive Medicine Service, of any hazardous waste incident involving personnel exposure.

(8) As a member of the EQCC, will serve as advisor and point of contact on procedural and technical matters for the EQCC.

c. The Director, Directorate of Logistics (IMSE-RED-LG) is responsible for:

(1) Providing on-post transportation of explosive or reactive wastes.

(2) Providing storage space and/or disposal for explosive contaminated reactive waste (Class V).

(3) Serving as a Member of the Environmental Quality Control Council.

d. The Alabama Institute for the Deaf and Blind (AIDB) is responsible for maintaining an adequate supply of Department Of Transportation (DOT) approved Performance Oriented Packaging (POP) containers that meet the UN standard as listed in 49 CFR 178.503.

e. The Chief, Defense Reutilization and Marketing Office (DRMO-Huntsville) is responsible for:

(1) Disposition of all hazardous waste generated at Redstone Arsenal except chemical/biological/nuclear warfare agents, radioactive wastes, waste containing explosives and propellants, and unique or unstable/reactive laboratory waste, and hazardous waste destined for off-site disposal outside of DRMOs contracting responsibilities.

(2) Storing all accepted hazardous waste in Conforming Storage Facilities, inspecting and maintaining inspection logs, and record keeping in accordance with the procedures established in the RSA Part B Hazardous Waste Storage Permit, 15 April 1998.

(3) Properly manifesting all hazardous waste being transported to final disposal sites (except those exempted above in paragraph 5e(1)).

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(4) Accepting accountability of all property identified as hazardous waste (except those exempted above in paragraph 5e(1)) in approved non-leaking, safe to handle containers.

(5) Assisting the Environmental Coordinator (EC) in providing detailed guidance for proper handling and recycling of hazardous waste.

(6) Full participation in any RSA/DA hazardous waste tracking effort.

(7) Serving as a member of the Environmental Quality Control Council.

f. The Chief, Legal Office (AMSAM-L), is responsible for:

(1) Serving as legal counsel for the Environmental Quality Control Council and the EMD.

(2) Reviewing environmental correspondence, permits, contracts, actions, and other documents as required to ensure compliance with applicable regulations and laws.

(3) Assisting in the identification and interpretation of regulatory requirements impacting hazardous waste management.

g. The Chief, Preventive Medicine Service (MCXW-CO), is responsible for:

(1) Providing medical surveillance of all eligible persons with the potential for exposure to hazardous waste.

(2) Serving as a member of the Environmental Quality Control Council.

h. The Chief, Garrison Safety (IMSE-RED-SO), is responsible for:

(1) Providing guidance and assistance to the EC as needed regarding employee safety during the management, treatment, storage, disposal, handling, and cleanup of hazardous waste.

(2) Managing radiological wastes and any wastes that consist of a combination of radiological and hazardous wastes (mixed wastes).

(3) Serving as a member of the Environmental Quality Control Council.

i. The Chiefs of the primary organizational elements are responsible for:

(1) Complying with the provisions and procedures of this regulation.

(2) Appointing points of contact (POCs) to facilitate the management of hazardous waste within their organization and providing a written memorandum to EMD identifying the POC and an alternate. Through the POCs, the Chiefs are responsible for ensuring that hazardous wastes generated by their organizations are managed in an environmentally and legally acceptable manner. This will include ensuring that:

(a) Hazardous wastes are stored and handled as indicated in Appendix A, paragraph 2b (Storage Procedures); and Appendix C, Hazardous Waste Handling and Compatibility.

(b) Hazardous wastes are not stored for more than 3 days at a satellite accumulation point, if the quantity has reached 55 gallons. Hazardous wastes shall not be stored for more than 90 days at an approved 90-day hazardous waste accumulation point.

(c) All hazardous material/hazardous waste is tracked; this includes all such items that are surveyed, acquired, discovered, or otherwise in possession of the

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generator. Tracking and record keeping will ensue from the time of initial possession until the time of turn-in to DRMO or other entity authorized by the EC.

(3) Ensuring that the personnel under their supervision who deal with hazardous waste are trained annually in accordance with the requirements set forth in Appendix D.

(4) Verifying the integrity and security of all waste generated in their areas of responsibility.

(5) Surveying their facilities and providing reports on hazardous waste generation, management, handling and storage as requested by the EC.

(6) Coordinating with the EC regarding all hazardous waste related matters.

(7) Providing detailed guidance through written standing operating procedures (SOPs) for the management of hazardous waste in their areas of responsibility. These SOPs will be coordinated with the EMD before promulgation.

(8) Transferring hazardous wastes to the DRMO in coordination with the EC.

(9) Mitigating any spills of hazardous waste through the procedures established in the Spill Prevention Control and Countermeasure (SPCC) Plan / Installation Spill Contingency Plan (ISCP) for Oil and Hazardous Substances.

(10) Serving as members of the Environmental Quality Control Council, as requested.

j. The EC is responsible for:

(1) Overseeing the hazardous materials/waste storage and tracking operations of assigned organizations.

(2) Supporting the assigned organizations in compliance with matters relating to the management, storage, transportation, treatment, turn-in and disposal of hazardous materials/waste.

(3) Inspecting hazardous material/waste areas and providing assistance to ensure material is being managed in compliance with all federal, state, and DA regulations.

Resources

Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38538
Branch Chief- 104 hours - $5,899
Team Leader - 1040 hours - $58,999
Customer Manager- 1560 Hours - $88,498
Customer Manager- 1560 Hours - $88,498
Permit Manager - 1560 Hours - $88,498

Contractor Support - HMMS- 2080 Hours - $107,000

GIS support 130 hours - $6,187

Environmental Database hours - 80 hours - $4,000

Contracts required by Law or permit:

Chugach Hazardous waste management - $$133,705
Chugach Labaoratory Services - $520,000
Legally mandated Training installation staff - $14,000

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Orphan sites - $200,000
OB/OD Compliance Monitoring (sampling) - 109,000
Monitoring of Hazardous Waste sites - 100,000

Total contract requirements - $1,076,705

Supplies -

Training- 8hr refresher for PM's - $15,000
Sustainability:
6,200- training to stay current with regs

Resources to meet requirements of this aspect are found in the Environmental Management Division, Environmental Program Requirements Database.

Sustainability

Tenants on Redstone Arsenal produce hazardous waste from various work processes which include motor pools, paint shops, metal working shops, refrigeration shops, laboratories, test areas and ranges. Employee's who work in these areas can play importants roles in maintaining sustanability in hazardous waste generations. They have the opportunity to use less hazardous materials which generate hazardous waste. By generating less hazardous waste, you will reduce the need to handle and dispose of hazardous waste. When you dispose less hazadrous waste you are sustaining the earth by using less space in the landfills and not compromising the ability of future generations to use landfills, if needed. You also save money because you pay less for purchasing hazardous materials and less for disposing hazardous waste.

Redstone Arsenal is committed to excellence and stewardship in protecting the environment. Source reduction and waste minimization are prime considerations in areas where hazardous materials are being utilized and sometimes result in hazardous waste. They are also essential elements for controlling pollution to prevent adverse impact to the air, land, and water. The U.S. Army Garrison Redstone and all of the tenants comprising Redstone Arsenal will eliminate waste generation at the source wherever possible without compromising mission objectives. When waste generation occurs, practical measures will be employed to reduce the volume. Practices that are considered waste minimization include recycling, source separation, product substitution, research and development process changes, and the use of less toxic raw materials. It is important that every member of the arsenal community be aware of the environmental and financial impact related to the disposal of hazardous wastes and materials and to help minimize the volumes that are generated.

Waste Minimization includes source reduction and environmentally sound recycling that results in either the reduction in the total volume of hazardous waste, reduction in the toxicity of hazardous waste or both. All of the hazardous waste generating activated on Redstone Arsenal should fully identify all of their waste stream and continue to strive for a percentage reduction in all recurring hazardous waste streams annually. Toxic raw materials should be replaced with non-toxic raw materials whenever appropriate.

Maintain cost effective waste prevention and recycling programs (EO 13423)

Minimize generation of waste and pollutants through source reduction (EO 13514)

For the top 20 hazardous wastes by weight, achieve a 5% reduction from the previous year.

Consequences

The Aberdeen Proving Ground in Maryland is a U.S. Army facility where, among other things, chemical weapons were developed. The Aberdeen Three Case involved three high-level civilian managers at the Aberdeen Proving Ground in Maryland. All three managers were chemical engineers in charge of the development of chemical weapons. In 1989, the three engineers were indicted for a criminal felony, tried and convicted of illegally handling, storing,

and disposing of hazardous wastes in violation of the Resource Conservation and Recovery Act (RCRA). The violations occurred between 1983 and 1986.

U.S. Army Research Facility Agrees to Pay Penalty for Hazardous Waste Violations

Release date: 05/28/2009

Contact Information: Paula Ballentine, (617) 918-1027

(Boston, Mass. – May 28, 2009) – The U.S. Army Cold Regions Research and Engineering Laboratory in Hanover, N.H. will pay $89,500 for violations of federal and state hazardous waste management laws.

Following an EPA inspection in 2007, EPA alleged that the facility failed to determine whether numerous containers held hazardous wastes and failed to properly label hazardous wastes containers. Additionally, EPA alleged that the facility accumulated hazardous waste in an area with a floor drain without taking measures to prevent a leak or spill. The facility is currently in compliance with these RCRA requirements.

Hazardous waste generators must fully evaluate and disclose their waste streams so that proper decisions can be made on how to handle such materials. Conducting hazardous waste determinations and properly labeling containers allows facilities and regulators to safely handle the chemical wastes that are generated, used and stored within a particular facility.

The Cold Regions Laboratory conducts research on the impacts of human activity on the environment in cold regions, as well as the cold effects on construction operations and the maintenance of facilities. Additionally, the facility performs cold-related problem solving for materials used in cold environments and researches the nature and characteristics of snow, ice, frozen ground, and other materials. The facility generates laboratory chemical wastes through these processes.

Federal and state hazardous waste storage and treatment requirements are part of the hazardous waste management laws. These laws govern the generation, treatment, storage and disposal of hazardous wastes and provide EPA with authority for conducting compliance monitoring and enforcement activities.

Kansas City, Kan., August 18, 2009) - The U.S. Department of Veterans Affairs Eastern Kansas Health Care System has agreed to pay a $51,501 civil penalty and spend nearly a half-million dollars on a plan to manage pharmaceutical and chemical wastes, all in an agreement to settle alleged violations of hazardous waste laws at its hospitals in Leavenworth and Topeka, Kan.

The agreement, filed today in Kansas City, Kan., resolves a series of violations noted during inspections of the Dwight D. Eisenhower Veterans Medical Center in Leavenworth in January 2006, and the Colmery O'Neil Veterans Medical Center in Topeka in April 2006.

A three-count complaint filed January 19, 2009, accused DVA of one count of failure to perform hazardous waste determinations; one count of operation of a hazardous waste treatment, storage or disposal facility without a permit; and one count of offering hazardous waste for shipment to a transporter without a manifest and offering hazardous waste to an unregistered transporter.

The complaint alleged that the 2006 inspections by EPA Region 7 staff found multiple violations of the Resource Conservation and Recovery Act, including:

Failure to perform proper hazardous waste determinations at Leavenworth and Topeka.
Failure to properly manage hazardous waste satellite accumulation containers in the Histology Lab and Lab Storage Room at Leavenworth.

Failure to properly mark hazardous waste containers in the Histology Lab storage room, a paint waste storage room and one other room at Leavenworth.
Failure to keep proper emergency information posted near telephones at both facilities.
Failure to document all weekly inspections of hazardous waste storage areas at Leavenworth.
Failure to conduct weekly inspections of an area storing large quantities of acute hazardous waste at Topeka.
Failure to make proper advance arrangements with local fire and police departments and other emergency responders for responding to emergencies at both facilities.
Failure to develop a proper emergency contingency plan for the Topeka facility.
Failure to document a personnel training plan for the Topeka facility.
Failure to store incompatible wastes without proper segregation at Leavenworth.
Unpermitted on-site incineration of some hazardous wastes at both facilities.
Unlawful shipping of hazardous waste between the two facilities without proper manifests, including the transportation of hazardous waste from Leavenworth to Topeka by an unauthorized waste transporter.

Besides paying a $51,501 civil penalty to the U.S. Treasury, the Department of Veterans Affairs Eastern Kansas Health System must spend at least $482,069 on a supplemental environmental project to develop and implement a program to properly identify, segregate and manage its pharmaceutical and chemical wastes at the Leavenworth and Topeka hospitals.

The supplemental environmental project will have at least three phases, including analysis of waste streams present at the facilities, development of current reference material including the implementation of pharmaceutical waste software, and risk assessment to define processes and identify needs.

DVA plans to develop software and hire additional personnel to track all chemicals and pharmaceuticals at both hospitals. This in turn will identify areas where product substitution, employee training and recycling can be implemented, potentially eliminating the disposal of hundreds of pounds of hazardous waste annually at each facility.

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Federal and state hazardous waste storage and treatment requirements are part of the hazardous waste management laws. These laws govern the generation, treatment, storage and disposal of hazardous wastes and provide EPA with authority for conducting compliance monitoring and enforcement activities.

More Information: EPA enforcement of RCRA & Hazardous Waste in New England (www.epa.gov/region1/enforcement/waste/index.html)

Annual Review

I made comments in the Communications area regarding an update of the Integrated Solid Waste Management Plan.

I reviewed this aspect on 27 March 2012 and it appears to be in order.

Performed EPAS survey at Chugach Federal Solutions Inc, facilities on 22-29 Feb 2012. The inspection report is in the EPAS database.

Performed EPAS survey at Phoenix Services Ground Maintenance on 12 March 2012. The inspection report is in the EPAS database.

I inspect the Chugach hazardous waste 90-day storage facility at building 5423 weekly.

The scales at the Chugach hazardous waste 90-day storage facility (building 5423) were last calibrated on Dec 19, 2011. Scales are calibrated quarterly.

The scales at the DLA Distribution Services Facility (building 7216)were last calibrated on

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
6	**Hazardous Material Management**	Brian Mason

Discussion

Hazardous Material Management is an environmental element of many different processes on Redstone Arsenal. There are some environmental regulations that requires the proper management of hazardous materials. Hazardous Material Management has been determind to be a significant environmental aspect that will be managed as part of Redstone Arsenal Environmental Management System.

Redstone Arsenal Hazardous Material Management

Abstract:
Redstone Arsenal has the responsibility of complying with all local, state and federal regulations as applies to the management of Hazardous Materials (HAZMAT). There are several directorates that must be involved in the management of hazardous materials in order to meet compliance goals defined by federal regulations. These include The US Army Garrison Environmental Management Division, Garrison Safety Office, Garrison Fire Services, Department of Logistics and each tenant organization that has responsibilities set out by memorandum of agreement (MOA) within the boundaries of Redstone Arsenal.

Background:
Redstone Arsenal has approximately 60 tenant organizations on post. These organizations hold approximately 16,000 specific hazardous materials comprised of near 70,000 individual containers being currently tracked by the Directorate of Logistics (DOL) Hazardous Material Management System. Approximately 18,000 are considered environmentally critical based on current regulations.

Hazardous Material Management Aspects:

Procurement/Purchasing – Redstone Arsenal tenant organizations are responsible for the purchase of their required hazardous materials and Inventory of all materials received. A Hazardous Material Inventory Receipt Form should be completed upon receipt of hazardous materials. These forms are to include the Organization name, Owner, Name, quantity and volume of material received, storage location and any MSDS information available to include hard copies available to DOL.

Inventory Receipt – Once inventory is received and a Material Inventory Receipt form is filled out, it is the tenant responsibility to provide the Department of Logistics (DOL) with the inventory information. Upon receipt of the inventory receipt form, the DOL hazmat specialists will log the inventory into the HMMS database for tracking. It is the tenant’s responsibility to maintain current and accurate inventory. It is the responsibility of the DOL hazmat specialists to maintain a current and accurate inventory database for all hazardous materials on post.
Inventory Adjustment - Upon the consumption of hazardous material inventory, the owner of the material is required to submit an inventory adjustment form to DOL. The inventory adjustment form must also be provided to DOL in the case that hazardous materials are moved from one storage area to another. This form must contain the bar code tracking number, inventory name, quantity and usage method code. Once the adjustment form is received by the DOL hazardous material specialist, the material usage is documented in the HMMS tracking system and the container is removed from Redstone inventory.

Reporting - The Redstone Garrison Environmental Management Division (EMD) is responsible for all regulatory reporting requirements. The Tier II and TRI (Form R) reports are required to be submitted annually for all hazardous materials currently in inventory as well as all hazardous materials consumed per calendar year within the boundaries of Redstone Arsenal. Because all hazardous material inventory duties are the responsibility of the DOL, the Garrison EMD has requested copies of all hazardous material information for Redstone by the first of February of the following year in order to complete the previous year’s regulatory reporting requirements. It is the responsibility of the Garrison EMD hazardous waste specialist to review all regulatory reporting information provided by DOL to the Garrison EMD to insure completeness and accuracy of information. The delegated EMD

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environmental coordinator is responsible for submission of the completed reports to the proper regulatory bodies.

EPAS requirements – It is the responsibility of the Garrison DOL to provide assistance in conducting annual EPAS inspections to insure that all tenants on Redstone are in compliance with the required hazardous material management duties assigned.

MSDS Control - All hazardous materials in current inventory on Redstone Arsenal should contain manufacturers Material Safety Data Sheets. The tenants of Redstone have the responsibility to acquire MSDS's upon the purchase and receipt of Hazmat and should provide copies of the information to the Garrison DOL hazardous material management specialists. Upon receipt of the MSDS, the DOL hazardous material management specialists will scan the MSDS and input the information into the HMMS database to maintain a current Redstone-wide electronic MSDS database.

Impacts or possible impacts

- Expose People, plants and animals to toxic contamination
- Need for proper and appropriate facilities
- Legal requirements for tracking and reporting
- Possible cleanup requirements
- Emergency planning necessary

Goals

Comply with the regulations for hazardous material management

Asure safe and healthy working conditions for all employees

Promote emergency planning and preparedness

Prevent and/or reduce pollution sources

Measurable Targets

Verify that releases of hazardous material in excess of reportable quantities are reported to the National Response Center (NRC) in accordance with prescribed timeframes.

Ensure that annual inventory reports (Tier II - Hazard Chemical Inventory Reports) are submitted on or before March 1 to the Local Emergency Planning Committee, the Emergency Response Commission, and the Fire Department.

Account for each chemical for which a reporting threshold is exceeded and determine the amounts released to air or water, treated, disposed of or recycled on site, or sent off site for disposal. Report this information via Form R annually on or before July 1st as per Toxic Release Inventory Guidelines.

Verify that each tenant using or storing hazardous materials has a written Hazard Communication Plan by June 1, 2009. (this is a safety goal and not an environmental goal)

Verify and document that tenants have provided employees information and training on hazardous chemicals in their workplace at the time of their initial assignment. (this is a safety goal and not an environmental goal)

Letters of Instructions

Legal Requirements

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)
This act, also known as SARA Title III, was designed to promote emergency planning and preparedness at both the state and local level. It provides citizens, local governments, and local response authorities with information regarding the potential hazards in their community. EPCRA requires the use of emergency planning and designates state and local governments as recipients of information regarding certain chemicals used in the community. EPCRA has four major components:
Emergency planning (Sections 301-303)
Emergency release notification (Section 304)

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Community right-to-know reporting (Sections 311-312)
Toxic chemical release reporting (Section 313).

E.O. 12088, Federal Compliance with Pollution Standards, October 13, 1978
This EO requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities the agency funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. [Replaced with EO 13148]

Pollution Prevention Act of 1990 (PPA)
The goals of PPA were the following: preventing or reducing pollution at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or other release into the environment should be employed only as a last resort and conducted in an environmentally safe manner. Section 6607 of the PPA requires owners or operators of facilities who have to file an annual toxic chemical release form (Form R) under EPCRA Section 313 to include a toxic chemical source reduction and recycling report for the preceding calendar year that has been incorporated into the Form R [Added March 2001].

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
CERCLA, known commonly as Superfund, became law in 1980 and authorizes U.S. EPA to respond to releases or threatened releases of hazardous substances that may endanger public health, welfare, or the environment. The basic purpose of CERCLA is to provide funding and enforcement authority to U.S. EPA for overseeing the cleanup of environmental contamination caused by responsible parties. The Superfund Amendments and Reauthorization Act (SARA) of 1986 revised various sections of CERCLA, and created a free-standing law, SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). The CERCLA hazardous substance release reporting regulations (Section 103; 40 CFR Part 302) direct the person in charge of a facility to report to the National Response Center any environmental release of a listed hazardous substance that equals or exceeds a reportable quantity. Reportable quantities are listed in 40 CFR Section 302.4. A release report may trigger a response by U.S. EPA or by one or more federal or state emergency response authorities.

The Hazardous Materials Transportation Act of 1975
This act, as last amended in November 1990, 49 USC 1801- 1819, et al., is the federal legislation that governs the transportation of hazardous materials in the nation. The policy of Congress is to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the nation adequately against the risks to life and property that are inherent in the transportation of hazardous materials in commerce (49 USC 1801).

The Occupational Safety and Health Act (OSHA)
This act, last amended in November 1990, 29 U.S. Code (USC) 651-678, is a Federal statute that governs the issues related to occupational safety and health. The purpose of this act is to assure every working man and woman in the nation safe and healthful working conditions and to preserve our human resources by, among other things, providing for the development and publication of occupational safety and health standards, providing for an effective enforcement program, and providing for appropriate reporting procedures with respect to occupational safety and health. These procedures will help achieve the objectives of this act and accurately describe the nature of the Occupational Safety and Health Act (29 USC 651(b)(9)(10)(12)).

DOD Regulation (DODR) 4145.19-1
Storage and Materials Handling. This regulation details storage procedures for hazardous materials, including compressed gases, acids, and flammable/combustible liquids.

Federal Water Pollution Control Act

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This law was the primary Federal law governing the discharge of oil into navigable waters. This regulation prohibits the discharge of harmful quantities of oil into navigable waters. 40 Code of Federal Regulations (CFR) 110, Protection of Environment - Discharge of Oil, defines harmful quantities as those discharges that will cause a sheen or discoloration of the surface of the water or a sludge or emulsion to be deposited beneath the surface of the water. [Revised October 2001]

National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR 302

Oil Pollution Prevention , 40 CFR 112

DOD Regulation (DODR) 5030.41
Oil and Hazardous Substances Pollution Prevention and Contingency Program

Executive Order 13148

40 CFR 355-372

P.L. 301-308, The Oil Pollution Act of 1990
This law, Public Law (PL) 301-308 (33 USC 2701-2761, et al.), as amended, requires the prevention of oil pollution into navigable waters by tank vessels. This includes the preparation of a response plan, construction of oil carriers with double hulls, and inspection of spill response equipment.

Training Requirements

Personnel who work with hazardous materials are required to be trained in the use of and potential hazards of such materials. All employees and supervisors working on sites exposed to hazardous materials or other hazards are required to be trained before engaging in these activities (29 CFR 1910.1200).

Hazardous Materials in Laboratories - A chemical hygiene plan that is reviewed annually is required when hazardous chemicals are used in laboratories. Employees are required to be provided with information and training about the hazardous chemicals in their work areas. Records about the exposure of employees are to be kept along with medical records (29 CFR 1910.1450(e), 1910.1450(f), 1910.1450(h), and 1910.1450(j))).

All who work directly with chemical agents and ammunition are required to receive enough training to enable them to work safely and to understand the relative significance of agent exposures. (DoDD 6055.9, para 4.3; DoD 6055-9 STD, para C11.6.2)[Added April 2003].

Awareness

EMD Webpage
The landing site for the Hazardous Material Web page is:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/hazmatwaste/hazmat.html
Terry Hazle checked this page on 11/14/2011. OK for awarenwss but needs updating to say DOL manages the materials program.

Newspaper:
Title: Package Deemed to Safe by First Responders
Date: 19 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\019.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared.

Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Monthly inspections by Garrison EMD to ensure proper storage of Haxzardous Materials.

Periodic inspections by the safety office and fire Department to ensure material storage compatibility.

Required Permits

No Permits are required for hazardous material management

Required Plans

Risk Management and Response Plan (for those chemicals that exceed the regulatory limit, currently only chlorine meets this criteria)

Required Records

Hazardous Material Inventory
- Tier 2 Reports
- TRI Reports

NEPA

Monitoring/Measuring Requiremens

EPAS Checklist

1. Determine if a flammable storage cabinet is available to store all flammable products on site.

2. Determine if all flammable products on site are stored correctly as a closed container within the flammable storage cabinet.

3. Check for compatibility storage of hazardous materials such as all corrosive items stored separately from all flammable items.

4. Determine if all hazardous material inventory on site has an officially approved barcode for tracking hazmat inventory to an eventual turn-in waste product.

5. Determine if a book of material safety data sheets are available on site for each item in inventory.

Calibration

There are no legal requirements for hazardous materials.

What Significant Impacts Are

Significant impacts associated with hazardous materials would be the use of hazardous materials without proper plans and facilites for safely storing or plans for handling the waste from hazardous materials.

Violation of EPCRA or related regulation would be a significant environmental impact.

Responsible Person(s)

The Installation Commander (IC) is responsible for developing and implementing a program to track hazardous materials and hazardous waste from cradle to grave. The IC also designates responsibility for spill response, identifying the incident commander and response team.

Director of Logistics (DOL) has primary responsibility to receive, store, and issue all hazardous commodities. DOL reviews all items that have a potential health hazard and determines if an issue exception code (IEC) should be assigned to the item before being placed in storage. The receipt of hazardous materials with the proper documentation and shipping papers is also the responsibility of DOL. While hazardous materials are in the

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possession of DOL, proper maintenance and operation of flammable/combustible materials storage facilities, acid storage facilities, and compressed gas storage facilities are the responsibility of DOL. DOL ensures all hazardous materials are properly labeled (OSHA and DOT) and include MSDSs prior to distribution.

Activities Using/Storing Hazardous Materials are responsible for ensuring each shipment of hazardous materials received includes a copy of the MSDS. Additionally, they are responsible for proper maintenance and operation of flammable/combustible materials storage facilities, acid storage facilities, and compressed gas storage facilities. Hazard Communication training is the responsibility of the site supervisor.

Medical Department Activity (MEDDAC)/Medical Center (MEDCEN) are responsible for reviewing the IECs for hazardous materials assigned by DOL, and approving or disapproving the recommendations. Additionally, they are responsible for medical-unique hazardous materials.

Environmental Coordinator (EC) is responsible for reporting releases of reportable quantities of hazardous substances to U.S. Environmental Protection Agency (USEPA) and appropriate state authorities. EPCRA and TRI reporting are additional responsibilities.

Incident Commander is designated by the IC, selects response team members, ensures team members are trained, selects and provides appropriate spill response materials and equipment.

Installation Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department is responsible for making periodic fire safety inspections of flammable/combustible storage and handling areas on the installation.

Safety Officer is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials. The Safety Officer provides the appropriate manager with a report of findings resulting from work place safety evaluation and recommended corrective actions. The Safety Officer is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage. The Hazard Communication Program is a responsibility of the Safety Officer. These duties are in addition to their responsibilities for range safety, vehicle safety, and work related accident investigation.

Federal and non-Federal tenants are required to report spills of hazardous materials to the IC within 24 h of their occurrence (AR 200-1, para 1-29).

USAG Redstone Environmental Management Division (EMD)
•Regulatory Reporting – USEPA Tier II and Form R (TRI) Reports
•Training – Quarterly RCRA training classes offered to all Redstone Arsenal employees.
•Spill Response – Responsible for coordinating all spill clean-up actions of the Redstone Arsenal spill team. Responsible for contacting the National Spill Response Center if necessary. Will maintain the Redstone Arsenal Spill Control Plan.
•HMMS Database administrator is responsible for providing all Hazmat information found in the HMMS database when requested by the EMD.

USAG Department of Logistics (DOL)
•MSDS Cataloging
•Inventory Receipt Input
•Inventory Adjustment and Consumption
•All packaging and off-site transportation of hazardous materials
•Generation of Inventory reports for Garrison EMD for regulatory reporting purposes
•Provide assistance in EPAS inspection completion as pertains to hazardous material storage and tracking
•Administrator of HMMS database and all hazardous material tracking duties

Redstone Arsenal Garrison Safety Office
•Hazardous Communication Training

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•Assist in EPAS inspection
•Insure all MSDS's for hazardous materials are maintained by tenants.
•RCRA training assistance
•Spill response duties s for accident reporting purposes only

Redstone Arsenal Fire Protection Services
•Spill response first responder
•RCRA training assistance
•EPAS inspection assistance

Redstone Arsenal Organizations and Tenants
•Purchasing of hazardous materials
•Site-specific inventory control including storage and turn-in duties
•Organizational Hazardous Communication plan
•Employee RCRA and Hazardous communication training and documentation
•Employee safety
• MSDS acquisition and distribution
•Spill Reporting
•On-site transportation of hazardous materials

Base Installation Support Services (Chugach Management)
•DOT Hazardous Material Training
•OSHA hazardous material training
•Spill response and clean-up duties

Resources

EMD Program Manager - 520 Hours - $29,499
Prepare and submit TRI and Tier 2 reports Hours/Year or 0.25 Man-Year
(Update training, coordination, and data collection/review included)
Environmental Database hours - 40 hours - $2,000

Contractor Costs - Enter/track Hazardous material

0.5 FTE - 1040 Hours $65,302

2 FTE enter and track the purchase and use of hazardous materials - $212,000 (DOL Cost)

Funds:
TDY expense for EPCRA update
training ---------- $400.00/Year

Sustainability

Crosswalk of Sustainability Goals and Targets
In Executive Orders and Statutes
December 2, 2009

The new Executive Order (E.O.) 13514 Federal Leadership in Environmental, Energy, and Economic Performance (October 5, 2009) establishes goals and targets and requirements for Federal agencies. It builds on, but does not replace, E.O. 13423 Strengthening Federal Environmental, Energy, and Transportation Management (January 24, 2007). In addition, the Executive Orders reference or incorporate several statutory requirements for Federal agencies.

In response to requests from Department of Energy sites and programs, the Department's Office of Environmental Policy and Assistance developed the attached crosswalk of sustainability goals and targets. The crosswalk aligns goals and targets from E.O. 13514, E.O. 13423, and statutes, in order to assist federal managers in identifying current

requirements. We hope that the document will prove useful as the Department moves forward in identifying our sustainability goals and targets and in implementing budgets and programs to achieve these goals and targets.

Environmental management systems (EMSs) are identified in both E.O. 13514 and E.O. 13423 as the management framework which agencies and facilities should use to identify and achieve their sustainability goals and targets.

This crosswalk was developed by the Office of Environmental Policy and Assistance, with helpful additions from staff in the Federal Energy Management Program as well as review by others familiar with the Executive Orders and other requirements. If you have comments or suggestions for improving the crosswalk, please direct them to Steven Woodbury, at DOE's Office of Environmental Policy and Assistance (HS-22) (steven.woodbury@hq.doe.gov).

Hazardous Material Management

Redstone Arsenal has approximately 60 tenant organizations on post. These organizations hold approximately 16,000 specific hazardous materials comprised of near 70,000 individual containers being currently tracked by the DOL Hazardous Material Management System. Approximately 18,000 are considered environmentally critical based on current regulations. Hazardous Material Management is an environmental element of many different processes on Redstone Arsenal. There are some environmental regulations that require the proper management of hazardous materials. Redstone Arsenal has the responsibility of complying with all local, state and federal regulations as applies to the management of Hazardous Materials (HAZMAT).

The responsibility for sustaining our world as a healthy environment for future generations rests with all of us. Sustainability as it pertains to hazardous material management on Redstone Arsenal has to be accomplished while performing the Research and Development mission, protecting the environment and being good neighbors in the community. Performing the mission on Redstone Arsenal requires usage of hazardous materials. We have established procedures to track the receipt, storage and ultimate disposal of any hazardous materials. Use of these procedures enables us to protect and sustain the environment. We also have procedures in place to meet regulatory reporting requirements and be good neighbors in the community. We file the tier II and TRI (Form R) reports to satisfy federal, state and local laws and policies.

The impacts to the mission, community and environment as it applies to this aspect are:

•Expose People, plants and animals to toxic contamination
•Need for proper and appropriate facilities
•Legal requirements for tracking and reporting
•Possible cleanup requirements
•Emergency planning necessary

The questions we want to answer about this aspect are:

1.Can we keep doing what we are doing now and be sustaining as it applies to the defined mission, community and environment under (A) current conditions and (B) in 20 years if we have zero (0) growth on RA?

YES, we can continue managing hazardous materials as we are now as it applies to the defined mission, community, and environment and be sustaining in twenty years. The procedures mentioned above should enable us to do this. But we must also continue to look for ways to be more sustaining. The tenants on Redstone Arsenal should evaluate their hazardous materials inventory and purchase non-toxic substitutes. They should eliminate unnecessary purchases and only buy materials that will be used up. They should buy in smaller containers if transfer from large to smaller container is required before use. There would be less potential for spills, material evaporation, contamination from unused materials returned to the original container and expiration of shelf life for unused

materials. They should buy refillable spray bottles in place of single use aerosol cans. We dispose of numerous used aerosol spray cans each year. Using these types of refillable bottles should reduce the amount of waste generated from aerosol cans.

2.Is the way we are managing this aspect sustaining the current mission, community and environment?

Yes, based on the hazardous material tracking procedures we have in place, the reports that we furnish to federal and state agencies and the disposal procedures that we have in place for excess hazardous materials we are sustaining the current mission, community and environment.

Consequences

When necessary, EPA conducts enforcement action to ensure timely, accurate reporting by manufacturers subject to TRI. Section 325(c) of EPCRA authorizes civil administrative actions for violations for up to $27,500 per day, per violation. The Enforcement Response Policy (ERP) developed for EPCRA Section 313 establishes the framework for taking these administrative actions for violations such as:

Failure to report in a timely fashion,
Data quality errors,
Failure to respond to a Notice of Non-Compliance,
Repeated violations,
Failure to supply notification,
Failure to maintain records.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

I reviewed this aspect on 8-23-11 and it appears to be in order.

Updated the sustainability aspect of hazardous materials management. See suatainability tab.

Location

Hazardous Materials Storage Locations

Buildings Number Organization
115 Base Operations Chugach
128 Garrison MWR Golf Course
1103 Redstone Communities _Maintenance/Base Operations Chugach
1500 Garrison MWR Challenger Bingo/Army Lodging
3120 SEABEES
3121 SEABEES
3131 SEABEES
3132 SEABEES
3134 SEABEES
3136 SEABEES
3210 Target Management Office
3215 Robotic Systems Joint Project
3220AAFES-PX
3221Robotic Systems Joint Project
3222Garrison Education Center
3234AAFES-PX
3240AAFES-PX
3309Threat Systems Management Office
3320Garrison Fire Department
3321CIC
3338Base Operations Chugach
3367Base Operations Chugach
3424Garrison MWR Bowling Alley

3436Base Operations Chugach
3460AMRDEC
3461AMRDEC
3471Garrison Central Issue Facility
3500Base Operations Chugach
3531Garrison Fire Department
3542Base Operations Chugach
3543Veterinary Services
3549AMRDEC
3613Garrison MWR NAF Maintenance
3615Garrison MWR Arts and Crafts
3617Garrison MRW Auto Craft Shop
3629AMRDEC
3630Base Operations Chugach
3631Base Operations Chugach
3633Base Operations Chugach
3634Base Operations Chugach
3635Base Operations Chugach
3636Base Operations Chugach
3646Military Intelligence
3648Base Operations Chugach
3661Army Oil Analysis Program
3664Base Operations Chugach
3670Base Operations Chugach
3775Base Supply/CIC
3777IMMC
3784CIC
3790IMMC
3800Alabama Army National Guard
3803Alabama Army National Guard
4100MEDDAC/DENTAC
4140Garrison MWR Golf Course
4141Garrison MWR Golf Course
4424Garrison Fire Department
4496Threat Systems Management Office
4497Threat Systems Management Office
4497G1Threat Systems Management Office
4500AMRDEC/RTC
4505G3Defense Intelligence Agency
4511RTC
4513RTC
4545Defense Intelligence Agency
4546Defense Intelligence Agency
4547Defense Intelligence Agency
4722CIC
4773AMRDEC
4803Science and Engineering Services, Inc. Army Helicopter
4807Garrison Flight Operations
4811Garrison Flight Operations
4813Garrison Flight Operations
4814,G-1RTC
4815Garrison Flight Operations
4817Garrison Flight Operations
4820RTC
4828Garrison MWR Flying Activity
4832RTC
4832G3RTC
5128Garrison MWR Outdoor Recreation
5138Garrison MWR Outdoor Recreation
5306Base Operations Chugach
5400AMRDEC

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5403AMRDEC
5405AMRDEC
5410AMRDEC
5411Base Operations Chugach
5412Base Operations Chugach
5414Base Operations Chugach
5415Base Operations Chugach
5417TMDE
5421AMRDEC
5422AMRDEC
5423Base Operations Chugach
5424Base Operations Chugach
5426Base Operations Chugach
5427Base Operations Chugach
5428Base Operations Chugach
5432AMRDEC
5435TMDE
5450Infrastructure and Data Management
5477AMRDEC
5487Base Operations Chugach
5489Base Operations Ground Maintenance - Phoneix
5493Base Opoerations Chugach
5494Base Opoerations Chugach
5495Base Opoerations Chugach
5497Base Opoerations Chugach
5499Base Opoerations Chugach
5645Base Opoerations Chugach
5647Base Opoerations Chugach
5661Base Opoerations Chugach
5662Base Opoerations Chugach
5664Base Opoerations Chugach
5668Base Opoerations Chugach
5670Base Opoerations Chugach
5671SMDC Targets
5678Base Operations Chugach
5681Base Operations Chugach
5682Base Operations Chugach
5687Base Operations Chugach
5688Defense and Printing Services
6100AMRDEC
6104RTC
6113RTC
6121RTC
6211RTC
6213RTC
6230UAH Aerophsics Research Center
6260AMRDEC
6263AMRDEC
6301RTC
6309RTC
6311RTC
6312RTC
7011OMEMS FBI Hazardous Devices School
7018OMEMS FBI Hazardous Devices School
7103AMRDEC
7104Base Operations Chugach
7106Janitorial Phoneix Services
7111AMRDEC
7112Base Operations Chugach
7120AMRDEC
7141AMRDEC

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7143AMRDEC
7154AMRDEC
7155AMRDEC
7157AMRDEC
7158G1AMRDEC
7162AMRDEC
7176AMRDEC
7177AMRDEC
7244Garrison Fire Department
7247Base Operations Chugach
7284RTC
7288RTC
7290RTC
7290G2RTC
7293RTC
7295RTC
7296RTC
7310AMRDEC
7319SMDC Targets
7339AMRDEC
7344SMDC Targets
7345RTC
7347Northrop Grumman
7352AMRDEC
7354RTC
7357Northrop Grumman
7378Northrop Grumman
7593Defense Intelligence Agency
7594Defense Intelligence Agency
7668Base Operations Chugach
7691AMRDEC
7694AMRDEC
7768SMDC
7804AMRDEC
7817RTC
7818RTC
7840G1RTC
7845RTC
7848RTC
7851RTC
7852RTC
7853RTC
7855RTC
7856RTC
7857RTC
7860RTC
7861RTC
7863RTC
7864RTC
7865RTC
7873AMRDEC
7879RTC
7888RTC
7889RTC
8022Base Operations Chugach
8024Base Operations Chugach
8026Base Operations Chugach
8038Base Operations Chugach
8349AMRDEC
8407AGarrison
8518RTC

8552RTC
8716RTC
8763Garrison
8785Garrison
8852RTC
8868RTC
8869RTC
8870RTC
8874RTC
8875RTC
8876RTC
8876C1RTC
8876C2RTC
8877RTC
8878RTC
8884G1RTC
8886RTC
8888RTC
8896RTC
8902RTC
8928OMEMS FBI Hazardous Devices School
8935RTC
8942RTC
8969OMEMS FBI Hazardous Devices School
8971RTC
8975RTC
8981RTC
8999Base Operations Chugach
BON_YRDRTC
CATACOMRTC
INSTRBLGRTC
I-3338Base Operations Chugach
S3617Garrison MRW Auto Craft Shop
S4529Defense Intelligence Agency
TANK_BARNRTC
TANK_LOTRTC
TANKLOT2RTC
TS3671Base Operations Chugach
TS4528RTC

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
7	**Tank Management**	John Souza

Discussion

Tank management is an environmental element of fuel used for heating building and for powering engines on Redstone Arsenal. Because of the number and large quantity fuel storage in tanks we have on Redstone Arsenal and because of the tanks being highly regulated the decision has been made to include tank management as a significant environmental aspect and will be managed as part of the Environmental Management System.

Impacts or possible impacts

Improperly managing tanks can lead to the spillage of fuels.

Improperly managing tanks can lead to contamination of soil and groundwater.

Goals

Comply with all environmenal laws and regulations associated with tanks.
Prevent pollution from tanks.

Measurable Targets

A data base for cooking oil tank inspections has been created. The program has been installed at all restaurant facilitis on RSA.

UST registration invoices are generally mailed by ADEM to RSA in the October/November time frame each year and fees are due within 30 days.

All AST users are required to perform monthly inspections and submit inspection forms at that time.

Fuel handlers receive 40 initial hazmat training training and 8 hour refreshers annually.

New ADEM regulations came out on September 3, 2010 requiring UST users to complete operator training by August 8 2012. This training has been completed by all UST operators. It is one time training.

Letters of Instructions

Legal Requirements

Energy Policy Act of 2005 - Title XV, Section B of the Energy Policy Act of 2005 amends Subtitle I of the Solid Waste Disposal Act, the original legislation that created the underground storage tank (UST) program. The UST provisions of the Energy Policy Act focus on preventing releases and direct EPA to help states comply with new UST requirements. EPA and states, working closely with other stakeholders, developed the operator training grant guidelines, which establish three distinct classes of underground storage tank operators, describe how and when states will implement the guidelines, and discuss when operators must be trained.
40 CFR 112 - OIL POLLUTION PREVENTION

The Federal Environmental Protection Agency (EPA) has required SPCC Plans since 1973. The last major modification was in August 2002. The EPA amended 40 CFR 112 – making significant changes. For highlights of the changes click here: 40 CFR 112. These changes must be incorporated into the plans by February 17, 2006 and implemented by August 18, 2006. On December 12, 2005, the EPA proposed extending both deadlines to October 31, 2007. See the proposed changes at http://www.epa.gov/oilspill/nprm.htm#WhatDoesRuleSay.

The EPA has announced greater enforcement of the SPCC regulations and is planning to levy fines for non-compliance. Historically, the greatest areas of non-compliance resulting in violation are the lack of employee training on the plan and lack of record keeping.

40 CFR 280

Across the United States, there are federally regulated underground storage tanks (USTs) that store petroleum or certain hazardous substances. USTs are found at a variety of

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locations, including convenience stores, airports, service stations, small and large Manufacturing facilities, and hazardous waste management facilities. Some USTs installed before 1988 were constructed of bare, unprotected steel. Because of their underground location, these tanks pose unique problems in preventing their contents from leaking due to faulty installation, corrosion, tank or pipe rupture, or spills. With over 50 percent of the U.S. population relying on groundwater as their primary source of drinking water, Congress acted to protect this resource in 1984 by adding Subtitle I to the Resource Conservation and Recovery Act (RCRA). Pursuant to this congressional mandate, EPA established a regulatory program in 1988 that includes technical requirements to prevent, detect, and clean up releases from USTs. In addition, EPA created financial responsibility requirements to guarantee that UST owners and operators have enough money set aside to clean up releases and to compensate third parties.

• Define UST and UST system
• Identify which USTs are subject to regulation
• Determine performance and operating requirements
• Discuss such topics as historical deadlines for upgrading tanks and the closure and corrective action requirements
• Summarize the financial responsibility requirements for petroleum USTs.

ADEM Administrative Code R. 335-6-15 .....
This Division prescribes regulations to establish construction, installation, performance, and operating standards for underground storage tanks, as well as the administrative procedures for Alabama Underground and Aboveground Storage Tank .

Training Requirements

Initial UST operator training is required to be completed by August 8, 2012. UST owners are required to designate 3 classes of operators at each UST facility, Class A, B, and C operators. This training has been completed by all UST operators. It is one time training. Fuel handling personnel currently receive annual spill respone training. This training pertains to personnel working at the fuel farm, who transport fuel to various fuel storage points around RSA.

Awareness

EMD Web page:
The spill response program and storage tank program are found on web link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/other/other.html
The storage tank and spill response pages need updating but it is being held up by security office. These were checked on 11/14/2011 by Terry Hazle and determined to be adequate for awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

Underground Tanks require annual registration.

Required Plans

Tank Management Plan provides a description of each and every fuel storage tank on Redstone Arsenal, including all above ground and underground storage tanks. It is updated as needed

to reflect changes and relocations of tanks, as well as POC/contact/ph # changes.

Required Records

Records are kept of monthly inspections. Tank users also retain all repair and maintenance records.

Monitoring/Measuring Requiremens

Monthly inspections.

EPAS CheckList:

O All guidance documents on hand:

-40 CFR 112
-40 CFR 280

O Ensure that all AST's are equipped with properly operating warning systems; systems include overfill protection, leak detection, high level alarm, and level gauges.

O A monthly AST inspection program is in place; POC's use an AST inspection check list and forward reports to EMD.

O Records are maintained of AST inspections.

O Maintain accurate inventory of AST's to include all vital information about the equipment.

O Verify the integrity of all AST's based on industry standard procedures established by a national professional organization such as the American Petroleum Institute or the Steel Tank Institute.

O Ensure that all UST's are equipped with properly operating warning systems; systems include overfill protection, leak detection, high level alarm, and level gauges.

O Interstitial monitoring is performed monthly on all UST's.

O All UST monthly monitoring records are maintained properly on site.

O All records of repairs to monitoring equipment and UST's are maintained properly on site.

O All UST's undergo annual line tightness tests conducted in accordance with §280.44(b); tests are officially documented and records are kept.

O Spill catchment basin tests of all UST's are to be performed annually per ADEM regulations (335-6-15-.13(b) (4)); tests are officially documented and records are kept.

O Ensure that all UST systems are cathodically protected or constructed of non-metallic material to meet corrosion protection requirements.

Calibration

Routine maintenance and calibration of liquid level gauges and interstitial(leak detection) and high-level alarms.

What Significant Impacts Are

Improperly managing tanks can lead to the spillage of fuels and would cause a significant environmental impact.

Improperly managing tanks can lead to contamination of soil and groundwater.

Failure to provide spill containment in tanks will cause a significant environmental impact.

Responsible Person(s)

Storage Tanks Management E. Key Compliance Personnel
•The Safety Officer is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials and waste. The Safety

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Officer will provide the appropriate manager with a report of the findings and recommended corrective actions. The Safety Officer is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

•Director of Logistics (DOL) is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections. Additionally they are responsible for the maintenance of all storage tanks and dispensing systems. The DOL also is responsible for the calibration of permanently installed meters.

Tank Management Subject Expert is responsible for updating the aspect management plan to include keeping the POC list up to date.

Tank Management Subject Expert is responsible for keeping the spill plan up to date.

Tank Management Subject Expert is responsible for seeing that the tank database is kept up to date.

The Spill Response Team (SRT) is tasked to respond to spills when requested by an On-Scene Coordinator (OSC) and to perform spill containment, recovery, cleanup, disposal and restoration activities as directed by the OSC. The SRT is a multidisciplinary team often including the following persons: DPW, Environmental Coordinator (EC), Fire Chief, Military Police, Public Affairs Officer (PAO), Safety Officer, and Staff Judge Advocate (SJA).

•The EC will provide oversight for the management of used oil. They are responsible for the production of the SPCC Plan, the Facility Response Plan (if required), and the ISCP.

•The Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department will be responsible to make periodic fire safety inspections of flammable/combustible storage and handling areas, hazardous waste storage areas, and accumulation points on the installation.

•The Safety Officer is responsible for conducting workplace safety evaluations and inspections of the handling and storage of hazardous materials and waste. The Safety Officer will provide the appropriate manager with a report of their findings and recommended corrective actions. The Safety Officer is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

•Director of Logistics (DOL) is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections.

•Federal and non-Federal tenants are required to report spills of POL to the IC within 24 h of their occurrence (AR 200-1, para 1-29).

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692

Branch Chief - 52 Hours - $2,949
Program Manager - 520 Hours $29,499
Environmental Database hours - 150 hours - $7,500

Contract required by permit or Law:

AST Integrity Testing - $20,000
UST Permit fee's - $500

Sustainability:
2,200- training to stay current with regs

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Sustainability

Consequences

Release date: 07/02/2009

Contact Information: Donna Heron 215-814-5113 / heron.donna@epa.gov

PHILADELHIA (July 2, 2009) -- The U.S. Department of Agriculture's Beltsville Agricultural Research Service, 10300 Baltimore Ave., Beltsville, Md., has settled alleged violations of underground storage tank (UST) and hazardous waste regulations, the U.S. Environmental Protection Agency announced today.

The U.S. Department of Agriculture (USDA) agreed to pay a $65,066 civil penalty to settle alleged violations of federal UST regulations which are designed to prevent, detect, and control fuel leaks from underground storage tanks. EPA cited USDA for failing to conduct release detection every 30 days from November 2007 to February 2008 on nine underground storage tanks at the Beltsville facility, failing to perform annual line leak detection tests from March 2002 to December 2007 on two tanks, and failing to perform annual line tightness tests from March 2007 to November 2007 on two tanks.

EPA also cited USDA for violating the Subtitle C Resource Conservation and Recovery Act (RCRA), the federal law governing the treatment, storage and disposal of hazardous waste. RCRA is designed to protect public health and the environment, and avoid costly cleanups, by requiring the safe, environmentally sound storage and disposal of hazardous waste.

The alleged RCRA violations included operating a facility for the storage, treatment and/or disposal of hazardous waste without a permit, failing to clearly label containers of accumulated hazardous waste, not maintaining records of hazardous waste training for facility personnel and failing to determine if the solid waste generated by the facility was hazardous waste, specifically, used aerosol cans generated from the facility's machinery shop.

The settlement penalty reflects the USDA's compliance efforts and its cooperation with EPA in the investigation and resolution of this matter.

As part of the settlement, USDA has neither admitted nor denied liability for the alleged violations, but has certified its compliance with applicable requirements

EPA Action Leads to Compliance with Federal Underground Tank Regulations at McGuire AFB

Release date: 11/08/2006

Contact Information: Rich Cahill (212) 637-3666, cahill.richard@epa.gov

(New York, NY) McGuire Air Force Base in New Hanover Township, New Jersey is complying with measures required by federal law to prevent leaks of underground storage tank (UST) systems at the base, thanks to a settlement with the U.S. Environmental Protection Agency (EPA). Once EPA identified deficiencies in UST compliance during an inspection in 2002, McGuire AFB started fixing the problems. Under the terms of the agreement, the U.S. Air Force, New Jersey Air National Guard and the Army and Air Force Exchange Service will also pay a penalty of $115,000 for the violations. The military installed proper corrosion protection, overfill protection and leak detection equipment, and have improved their annual testing and record-keeping at the 20 federally-regulated UST systems it uses to store fuel for vehicles at the base.

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“Leaks of petroleum underground can spread very quickly to sully the groundwater and the soil,” EPA Regional Administrator Alan J. Steinberg said. “It’s much easier to prevent leaks before they happen. The armed services protect our country and they must also do their part to protect our environment.”

Underground storage tanks have historically been the nation’s number-one source of groundwater contamination, with over 30,000 leaks and spills from tanks reported annually. Tanks range in capacity from a few hundred to 50,000 or more gallons, and are used to store gasoline, diesel, heating oil and other fuels, waste oil and hazardous substances at gas stations, marinas, government facilities and large industrial sites. Petroleum releases can be a source of contamination of drinking water from groundwater sources, making them unsafe or unpleasant to drink. Releases can also result in fire and explosion hazards and produce short and long-term health effects.

The EPA regulations require owners and operators to maintain underground storage tanks to avoid releases into the environment. In addition, the regulations require owners and operators to clean up leaks to restore and protect groundwater resources, and provide a safe environment for those who live or work around these sites.

Annual Review

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
8	**Asbestos**	John Souza

Discussion

Asbestos (asbestos management) is an environmental element of building management (a service the garrison offers on Redstone Arsenal). There are many buildings on Redstone Arsenal that contain Asbestos. There are environmental laws and regulations that require that asbestos be management safely. Asbestos is a significant environmental aspect that will be managemed under the Redstone Arsenal Environmental Management System.

Impacts or possible impacts

- Regulatory violations
- Expose People, plants and animals to toxic contamination
- Contamination of landfill
- Disposal problems

Goals

Comply with laws and regulations pertaining to asbestos.

Prevent pollution from asbestos by ensuring that laws and regulations for disposal of asbestos are adhered to.

Measurable Targets

A new post-wide survey was completed and ready for use in early 2012.

Letters of Instructions

Legal Requirements

E.O. 12088, Federal Compliance with Pollution Standards, October 13, 1978
This EO requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities the agency funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. [Replaced with EO 13148]

Federal Hazardous Materials Transportation Law

Toxic Substances Control Act (TSCA)
The Toxic Substances Control Act (TSCA) of 1976 was enacted by Congress to give EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.
Also, EPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. EPA then can control these chemicals as necessary to protect human health and the environment. TSCA supplements other Federal statutes, including the Clean Air Act and the Toxic Release Inventory under EPCRA.

National Emission Standards for
Hazardous Air Pollution (40 CFR 61, Subpart M)

AR 420-70, chapter 3

Training Requirements

Asbestos in Schools - School buildings are required to be inspected a minimum of every 3 yr for asbestos. An asbestos management plan is required and response action must be done in a timely manner. If there is friable asbestos in the school, there must be an O&M and repair program that limits the asbestos from becoming airborne and risking exposure to

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building personnel. Warning labels will be attached immediately adjacent to any friable and nonfriable asbestos-containing building material (ACBM) and suspected ACBM assumed to be asbestos-containing material (ACM). Staff at the school must receive training on the hazards involved (40 CFR 763, Subpart E) [Revised March 2000].

Renovation and Demolition of Asbestos-Containing Structures - Facilities that demolish structures containing asbestos above certain limits, must meet notification requirements, emission control requirements and wetting requirements. This applies to facilities that demolish structures containing at least 80 linear meters (260 linear feet) of regulated asbestos containing material (RACM) on pipes, or at least 15 m2 (160 ft2) of RACM on other components or at least 1 m3 (35 ft3) off facility components, and facilities renovating structures and stripping or removing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m2 (160 ft2) of friable asbestos on other facility components and at least 1 m3 (35 ft3) off facility components. If the concentration of asbestos is less than this level, then the facility must submit notification of demolition. Facilities being demolished under state or local governmental agency orders shall have the portion of the facility containing friable asbestos adequately wetted during the wrecking operation. When a site is demolished by intentional burning, all RACM must be removed. No RACM shall be stripped, removed, or otherwise handled or distributed unless at least one onsite representative trained in asbestos removal is present. When air cleaning is used as a method of controlling emissions of asbestos to the outside air, the fabric filter collection systems are required to meet specific standards, unless alternative equipment is authorized for use by the USEPA (40 CFR 61.145 and 61.152).

Personnel who manage abatement operations are required to complete annual asbestos training

LBP Training Requirements - All LBP activities are required to be performed by certified individuals. Certification is available for inspectors, risk assessors, supervisors, project designers, and abatement workers. Training programs must be accredited (40 CFR 745.220 through 40 CFR 745.226) [Revised March 2000].

All members of the school maintenance and custodial staff who might work in a building that contains ACBM are required to receive at least 2 h of awareness training whether or not they are required to work with ACBM. (40 CFR 763.92(a)(1))[Reviewed March 2000].

AFOs must meet training requirements. (ADEM Admin. Code R. 335-6-7-.18(1), (2), and (5))[Added June 1999].

Awareness

EMD Web Page
The Asbostos page is at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/toxics/asbestos.html
Terry Hazle checked this on 11/14/2011. Page could use updating but is OK for environmental awareness.

Newspaper:
Title: Post Manages to Reduce Exposure to Asbestos
Date: 17 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\004.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or

even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Abatement operations are controlled via management and coordination with DPW and the Base Operations contractor.

Required Permits

no permits required

Required Plans

Asbestos Management Plan was revised and turned into a regulation in August 2012.

Required Records

NEPA Documentation for Federal Actions

Asbestos management building files. A data base is used to track all demolitions and renovations. This data base is coordinated with the engineering buildings file to ensure that ADEM notifications are forwarded to the regulatory agency prior to EMD NEPA approval for projects involing ACM abatement.

Monitoring/Measuring Requiremens

NEPA Follow-On Monitoring

Spot monitoring of building conditions and as an integral part of demolition/renovation projects.

EPAS Checklist:

Asbestos Management

O Regulations and guidance documents:

-29 CFR 1910.1001 (General Industry)
-29 CFR 1926.1101 (Construction industry)
-29 CFR 1910.134 (Use of respirators)
-40 CFR 763 (Asbestos in schools)
-40 CFR 61 (NESHAP)
-AR 200-1 (Environmental Protection and Enhancement)
-AR 385-10 (Army Safety Program)

O Update asbestos management plan to include all of the most current precautions and procedures.

O Maintain currency of survey with information provided from DPW reflecting new renovations, demolitions, and other building related activities.

O Arrange scheduling of sampling and analysis in a timely fashion in support of all installation actions, including renovations, demolitions, other building related activities, and concerns of all personnel potentially impacted by the presence of ACM.

O Maintain current files of sampling and analysis results from all activities, actions, or concerns that precipitated a requirement for sampling and analysis.

O Monitor training requirements of all installation personnel involved in the management and abatement of ACM on the installation.

O The asbestos management plan is current and complete.

O Excess real property containing asbestos is evaluated and decontaminated as needed.

O An installation asbestos management team is in place.

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O Asbestos management was considered in the EBS.

Calibration

not applicable.

What Significant Impacts Are

Failure to practice good management practices could result in employee exposure, regulatory non-compliance, and possible litigation. This would be a significant environmental impact.

Responsible Person(s)

Toxic Substances Management E. Key Compliance Personnel
PCBs
•The Directorate of Public Works (DPW), through the Exterior Electrical Shop, or the Environmental Coordinator (EC) is responsible for identifying, inspecting, marking (labeling), and properly servicing PCB Electrical Equipment (Transformers and Capacitors). Addition- ally, the DPW will help develop and maintain the PCB Management Plan or standard operating procedure (SOP) and the installations inventory of PCB equipment.

•The EC is responsible for ensuring that out-of-service items are located in a licensed and technically adequate PCB storage facility and preparing the annual PCB report. Normally, such facilities are located at a Defense Reutilization and Marketing Office (DRMO), and the DRMO is responsible for storage, disposal, transportation, and disposal contracts. Additionally, the EC will help develop and maintain the PCB SOP and the installations inventory of PCB equipment.
Asbestos
•DPW establishes an installation asbestos management team and appoints an asbestos management control officer (often the EC) or team leader. The DPW will also maintain records of asbestos survey results, plans, waste asbestos disposal records, and updates the records as changes occur. DPW will maintain records for 30 yr after the last incidence of employee exposure to asbestos.

•Asbestos Management Control Officer provides oversight for contract asbestos abatement operations. They will perform NESHAPs notifications and will be notified if there are asbestos exposure incidents or enforcement actions. They will issue a cease work order or delay start of work in order to prevent safety or environmental regulatory violations.

•Asbestos Management Team prepares the Asbestos Management Plan which contains documentation on all asbestos management efforts and the mechanism for oversight of the pro- gram. The team, as a minimum, consists of representatives from DPW, Environmental Office, Preventive Medicine Services (PMS), Safety Office, Civilian Personnel Office (CPO), Staff Judge Advocate (SJA), and Public Affairs Office (PAO).

•PMS performs the medical surveillance on individuals performing in-house asbestos abatement.
Radon
•AR 200-1, dated 28 August 2007 does not reference radon, [Revised October 2007].

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692
Branch Chief - 52 Hours $2,949
Program Manager - 520 Hours - $29,499
Environmental Database hours - 40 hours - $2,000
Training required by law:

Annual asbestos inspector certification - $3,000

Sustainability:
4,500- training to stay current with regs

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Sustainability

N/A

Consequences

If regulations are not followed the population of Redstone has a higher probability of being exposed to asbestos fibers.

Annual Review

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
9	**Drinking Water**	Eugene Daniels

Discussion

Drinking water compliance is an environmental element of a product we produce or purchase and distribute to customers on Redstone Arsenal. There are approximately 32,500 (projected number) individuals that potentially use the potable water system daily. Drinking Water is therefore deemed a significant environmental aspect on Redstone Arsenal and we will manage it as part of the environmental management system.

Impacts or possible impacts

- Increase the need for the installation to treat raw water
- Increase the need for facilities to deliver potable water
- The installation must maintain compliance with the Safe Drinking Water Act
- Requires resoures (Personel and Funds) to be allocated

Goals

Provide a safe and dependable supply of drinking water to the Redstone Community including Marshall Space Flight Center and the family housing areas

Comply with the Safe Drinking Water Act and all laws and regulations associated with the production and distribution of drinking water

Measurable Targets

Annual Targets - Updated for 2014

Send all required testing results and reports to the state, and or federal, regulators at lease two days before due date:

Complete drinking water EPAS inspection NLT August 15, 2012. Completed on 4 September 2014

Update the Bacteriological Monitoring and Sampling Plan by September 15, 2014. Didn't meet - Moved to December 31, 2014

Prepared and distributed (via US Mail) the 2014 Water Quality Report (Consumer Confidence Report) for Redstone Arsenal one weeks before the July 1st due date. Met

Prepare and publish an article in the Redstone Rocket to inform the Redstone community about the 2014 Water Quality Report before July 15, 2013. Met - Article published on July 09, 2014

Review the SOPs for my alternate programs by April 01, 2014 to maintain knowledge and proficiency in proforming these duties. Met

Oversee the installation flushing plan and request compliance reports from Chugach to ensure the potable water system is flushed as scheduled. Continued to receive quarterly reports during 2014

Letters of Instructions

Legal Requirements

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and in 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. The SDWA does not regulate private wells which serve fewer than 25 individuals. The SDWA authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect the public against both naturally-occurring and man-made contaminants that may be found in drinking water. The US EPA, states regulatory agency, and water systems personnel then work together to make sure that these standards are met

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EPA/ADEM Regulations

40 CFR 141 & 143, Drinking Water Regulations

ADEM Regulation 335-7 (Water Supply Program)

ADEM water supply regulations states that drinking water standards established in ADEM Regulation 335-7 are applicable to all public water systems and the systems must monitor the drinking water for various contaminants at the frequency and time designated by the Department. The systems are required to meet the drinking water standards maintain compliance with regulation 335-7 at all times.

The 1996 SDWA Amendment Highlights the Consumer Confidence Reports (CCRs)
All community water systems must prepare and distribute annual reports about the water they provide to their customers, including information on detected contaminants, possible health effects, and the system's raw water sources. The CCRs must be distributed to the system customers and copy furnished to ADEM on of before July 1st each year.

Microbial Contaminants and Disinfection Byproducts
The US EPA is required to strengthen protection for microbial contaminants, including Cryptosporidium, while strengthening control over the byproducts of chemical disinfection. The Stage 1 Disinfectants and Disinfection Byproducts Rule and the Interim Long Term Enhanced Surface Water Treatment Rule together address these risks.

Public Information & Consultation
The SDWA emphasizes that consumers have a right to know what is in their drinking water, where it comes from, how it is treated, and how to help protect it. The US EPA distributes public information materials (through its Safe Drinking Water Hotline, Safe water web site, and Water Resource Center) and holds public meetings, working with states, tribes, water systems, and environmental and civic groups, to encourage public involvement.

Source Water Assessment Programs
Every state must conduct an assessment of its sources of drinking water (rivers, lakes, reservoirs, springs, and ground water wells) to identify significant potential sources of contamination and to determine how susceptible the sources are to these threats.) Redstone completed an updated Source Water Assessment on June 15th, 2005. Based on the results, Redstone Arsenal's source water is at a low risk of being contaminated by the potential contaminant sites. This assessmemt is required to be updated by June 1, 2010.

Training Requirements

Operator Certification
Water system operators must be certified to ensure that systems are operated safely. US EPA issued guidelines in February 1999 specifying minimum standards for the certification and recertification of the operators of community and non-transient, noncommunity water systems. These guidelines apply to state Operator Certification Programs. All States are currently implementing EPA-approved operator certification programs. Operators at Redstone Arsenal are required to have a Class IV certification.

Laboratory must maintain current accreditation for all target analytes. Currently, Chugach Lab is certified to perform the following analyses: lead, copper, inorganic contaminants, disinfectants byproducts [total trihalomethanes (TTHMs) and haloacetic acids (HAA5s)], and volatile organic contaminants.

The Installation Support Contractor Lab is not certified to perform the bacteriological analyses; therefore, these samples are analyzed by an outside State certified lab. Also, all other analyses (synthetic organic chemicals, radionuclide contaminants and various unregulated contaminants) that the Installation Support Contractor lab is not certified to perform are analyzed by various contract labs.

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Awareness

EMD Web Page
The Drinking Water Page starts at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/water/drinkwater.html
The page was checked on 07/21/2014 and is up to date and adequate for environmental awareness.

Newspaper:
Title: Consumer Confidence Report
Date: 30 June 2010
Location: T:\DATA\Correspondence\EMS Training Documents\028.pdf

Title: Revised Schedule for Monitoring Water
Date: 13 April 2011
Location: T:\DATA\Correspondence\EMS Training Documents\058.pdf

Title: Redstone Drinking Water Meets Requirements
Date: 22 June 2011
Location: T:\DATA\Correspondence\EMS Training Documents\062.pdf

Title: Redstone Buys Water from Huntsville
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\073.pdf

Communications

Operational Controls

The safe drinking water laws and regulations are the most comprehensive controls for this aspect. These laws and regulations may require additional operational controls be written and kept on site to help guide the operators to successfully complete the requirements of the SDWA laws. (Remember that environmental regulations were written as instruction by the executive branches of government, to provide guidance on how to implement the environmental laws). If monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished, then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, and/or verbal instruction. The laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

The water supply permit has conditions that must be met and therefore needs to be used as a controlling tool.

ADEM Regulation 335-7
335-7-2-.01 Applicability. Drinking water standards established in these regulations are applicable to water systems that are required to monitor for the various contaminants. Systems are required to monitor at the frequency and time designated by the Department. All systems required to meet these standards must provide drinking water in compliance with regulation 335-7 at all times.

AR 40-5 (Preventive Medicine)
The Installation Commander ensures that appropriate samples are collected from all potable water sources and analyzed for chemical parameters by a certified laboratory; and that all test data and reports are forwarded to appropriate regulatory authorities. Preventive Medicine will Provide medical evaluation of monitoring data for the potable water supply and distribution system as necessary to fulfill the requirements of NPDWR, National Secondary Drinking Water Regulations (as applicable). Routine analyses obtained to comply with regulatory requirements will be the responsibility of the installation commander and his/her designated engineers.

Army Regulation 200-1
The primary standards for contaminants in drinking water which may cause an adverse health effect on the consumers are identified in the form of maximum contaminant levels, treatment techniques, or action levels. These standards are federally enforceable.

Army Regulation 420-49
Potable water will be supplied in accordance with the Safe Drinking Water Act (SDWA) of 1974 as amended in 19 June 1986 (PL 99-339) and in October 1988 by the Lead Contamination Control Act (PL 100-572) (42 U.S.C. 300f, et seq.) and all applicable state and local regulations. Sanitary control and surveillance of potable water supplies will be in accordance with AR 40-5 and TB MED 576 or applicable State and local regulations.

Water treatment plants standard operating procedures (SOP)
The installation support contractor (Chugach Management) has developed written operating procedures for the operator and maintenance of the water treatment plants and equipment. These procedures which include manufacturer's manuals address critical operations such as pre-startup, startup, and normal operation procedures; water quality analyses, system maintain, and system shutdown procedures. Copies of the SOPs are maintained at the WTPs.

Required Permits

Water Supply Permit # 2011-533 for PWS ID Number AL0000899

- This permit (Finalize copy) was issued December 15, 2010 and if applicable through November 30, 2016.

- The EMD Drinking Water Program Coordinator is responsible for maintaining the permit.

- The installation's Water Suppy Permit is kept in the Drinking Water files located in the EMD Drinking Water Program Coordinator office.

- The permit renewal application must be submitted to ADEM by June 03, 2016.

Required Plans

Bacteriological Monitoring and Sampling Plan
This plan was published on March 25, 2010
Plan has no legal expiration date but must be reviewed annually and updated to reflect significant changes to the distribution system.
EMD Drinking Water Program Coordinator is responsible for maintaining this plan.
A copy of this plan is kept in the Drinking Water files located in the EMD Drinking water Program Coordinator's office.

The revised plan was finalized on March 25, 2010

Cross-Connection Control and Backflow Prevention Management Plan
This plan was published on August 20, 2001
Plan has no expiration date but must be reviewed annually.
Chugach Environmental Engineer and Water Treatment Plant Supervisor are responsible for maintaining this plan.
A copy of this plan is kept in the Drinking Water files located in the Drinking Water Program Coordinator's office.

Disinfection By-Product Rule Monitoring (Stages 1 & 2)
The plan was published 26 December 2007 & is applicable from October 2008 thru August 2009
This plan has one year monitoring requirement - no update required.
The EMD Drinking water Program Coordinator is responsible for maintaining this plan.
A copy of this plan is kept in the Drinking Water files located in the EMD Drinking water Program Coordinator's office.

Disinfection By-Product Rule Compliance Monitoring Stages Plan
The plan was submitted to ADEM and approved on March 1, 2010 and is applicable from May 2012 thru February 2013. It has one year monitoring requirement with no update required.
A copy of this plan is kept in the Drinking Water files located in the EMD Drinking water

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Program Coordinator's office.

Risk Management Plans (Include SOPs for the WTPs operation)
Risk Management Plan for Water Treatment Plant 1
Expiration Date: January 18, 2016
The Risk Management Plan Manager is responsible for keeping this plan current.
The Risk Management Plan Manager and the Environmental Management Division (EMD)CAA Program Manager keep a current copy of this plan in their offices.

Risk Management Plan for Water Treatment Plant 3
Expiration Date: December 16, 2015
The Risk Management Plan Manager is responsible for keeping this plan current.
The Risk Management Plan Manager and the Environmental Management Division (EMD) Clean Air Program Manager keep a current copy of this plan in their offices.

Required Records

Monitoring Results and Reports
- Bacteriological Sampling Analysis Reports
- Consumer Confidence Reports (CCR)
- Disinfectants Byproducts (TTHMs and HAA5) Reports
- Inorganic Chemicals (IOCs) Monitoring Reports
- Lead and Copper Reports
- Long Term 2 (LT2) Monitoring Reports
- Monthly Plant Operation Data Reports
- Monthly Purchased Water Reports
- Radioactive Contaminants Monitoring Reports
- Source Water Assessments (On Book Shelf)
- Synthetic Organic Chemicals (SOCs) Monitoring Reports
- Unregulated Chemicals Monitoring (Stage 2) Reports
- Volatile Organic Chemicals (VOCs) Monitoring Reports

Note: The EMD Drinking water Program Coordinator keeps copies of the above reports in the Drinking Water files located in his office.

Monitoring/Measuring Requiremens

SDWA Compliance Monitoring Schedule

Bi-Monthly
- Bacteriological Sampling/Report - [31 Samples (30 finished and 1 raw) per Month]
Samples collected and transported to the Huntsville Drinking Water Quality Lab on the first and third Tuesdays of each month. The lab electronically sends reports directly to ADEM (Due on the 10th of each month) and mail hard copies to Environmental Management.

Monthly
- Monthly Water Plant Operational Data/Purchased Water Reports
Submitted to ADEM by the tenth of the month; we receive this report from Chugach during the first week of the month. After our review, we e-mail the report to ADEM.

- Long Term 2 (LT2) Enhanced Surface Water Treatment Rule
Samples taken on the third Tuesday of each month and sent to the Lab for a cryptosporidium, turbidity, and E. Coli analysis. The lab inputs the test results into the EPA CDX for our review and approval within 60 days after posting. Monthly sampling is required until March 2010. (Monitoning for this contaminant is complete; No further action is required at this time.)

Two Months (Every 60 Days)
- Disinfectants Byproduct Rule 2
Beginning in October 2008, eight samples are taken and analyzed for TTHMs and HAA5 by Chugach Lab during the second full week of every other month. The lab electronically sends the test results to ADEM with info copy to Environmental Management. Monthly sampling is required until August 2009 and the reports are due to ADEM by the 10th of the month

following monitoring. (THIS REQUIREMENT HAS BEEN COMPLETED)

Quarterly
- Disinfectant Byproducts (TTHM/HAA5) – Sixteen (or 20 w/WTP 3) samples taken quarterly and the analytical results must be submitted to ADEM by the 10 of April, July, October, and January.
- Total Organic Carbons (TOC's) – Two (2) Samples taken quarterly and the analytical results must be submitted to ADEM by the 10th of April, July, October, and January.
- Alkalinity - Two (2) Samples taken quarterly and the analytical results must be submitted to ADEM by the 10th of April, July, October, and January.
- DBPR 1 – See the attached Standard Monitoring Plan (Revised)
- UCMR 2 – Samples are taken at the points where potable water from the WTPs enters the system and are sent to EPA's Central Data Exchange (CDX) website.
    -- The testing Lab inputs the results into the EPA CDX for our review and approval.

Annually
Drinking Water Chemical Contaminant Monitoring
Volatile Organic Chemicals – Two (2) Samples must be taken between April 1 and June 30 and the analytical results submitted to ADEM by July 10.
Inorganic – Two (2) Samples must be taken between January 1 and December 31 and the analytical results submitted to ADEM by January 10 the following year.
Dalapon – Two (2) Samples must be taken between July 1 and September 30 and the analytical results submitted to ADEM by October 10.
Diquat – Two (2) Samples must be taken between July 1 and September 30 and the results submitted to ADEM by October 10.
Consumer Confidence Report
A copy of this report is due to ADEM and each of our drinking water customers in family housing by July 1st. Also, the completed certification form stating that these reports have been distributed to our customers is due to Adem by July 1st.

Bi-annually
Drinking Water Radiological Contaminant Monitoring
Radiological Contaminants – Two (2) Samples must be taken between January 1 and December 31 and the analytical results submitted to ADEM by January 10 the following year.
- Note: ADEM issues guidance on Radiological Contaminant Monitoring during the year when monitoring is required.

Three Year Cycle
- Lead and Copper
30 Samples must be taken from 30 pre-identified sites – The next monitoring must be done between June 1 and September 30, 2016; and the analytical results must be submitted to ADEM by October 10, 2016.

Safe Drinking Water Compliance Inspection Checklist
(U.S. Army Garrison - Redstone Arsenal, Alabama)
(Assessment Date - August 05, 2011)

INTERNAL ENVIRONMENTAL PERFORMANCE ASSESSMENT SYSTEM
MEDIA: SAFE DRINKING WATER

I - Water Source (Raw water - Tennessee River Plus Purchased finished potable water)	Sat.	Unsat.	N/A	Comments

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a. Adequate quantity to meet consumers demand	X	
b. Adequate supply of source (raw & finished) water	X	
c. Security	X	Controlled Access
II - Treatment		
a. Flash mix	X	
b. Flocculation	X	
c. Sedimentation	X	
d. Filtration	X	
e. Equipment condition	X	
f. Chemical storage facilities	X	
III - Distribution System		Water mains replacement projects in-progress
a. Water pressure/pumping capacity	X	
b. Finished water quality	x	Continuous Analytical results meet SDWA stds
c. Flushing program	X	
d. Disinfectant residual	X	
IV - Storage	X	
V - Operation and Control		
a. Certified operators	X	
b. On-line turbidimeters	X	
c. Computer capabilities	X	
d. Standby generators	X	In compliance
VI - Monitoring/Reporting/Records		
a. Bacteriological sampling plan	X	Updated 25 March 2010
b. Cross-connection	X	
c. Chemical monitoring	X	
d. Disinfection by-product monitoring	X	

ADDITIONAL SURVEY PROCEDURES

1. Are there any noncompliance issues that have not been resolved? No
2. Does the laboratory that analyzes the drinking water samples have a state certification for laboratory? Yes
3. Are water system records maintained for at least one year? Yes
4. Are total coliform samples collected at regular intervals at the frequency required based on the population? Yes
5. Are at least three (3) repeat samples collected for each coliform-positive sample found? Yes
6. Is the drinking water filtered? Yes
7. Do the installation EPA standards for analytic procedures demonstrate compliance with disinfection and filtration requirements? Yes
8. Does the installation perform disinfection profiling and benchmarking? Yes
9. Has the installation notified the State in writing if the system recycles spent filter backwash water, thickener supernatant, or liquids from the dewatering process? NA - We don’t recycle these products.
10. Does the installation water system meet the following maximum residual disinfection level goals for disinfections? Chlorine 4ppm (as Cl2) Yes

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SURVEY FINDING(S): None

CORRECTIVE ACTION(S): N/A

SURVEYOR'S NAME AND DATE: Eugene Daniels, August 05, 2011

REVIEWED BY AND DATE: _____

Calibration

Equipment used to measure contaminants in the drinking water that requires calibration

1. Colorimeter (Hach) - Measures chlorine levels (2 Each)

   - Calibrated August 2014 (Next calibration due August 2015)

2. Autosampler (Teledyne Tekmar) volatile organic contaminants (VOCs)

   - Calibrated June 2014 (Next calibration due June 2015)

3. Autosampler (PAL System) volatile organic contaminants (VOCs)

   - Calibrated December 2013 (Next calibration due December 2014)

4. Turbidimeter (Hach) - Measures turbidity (suspended solids)

   - Calibrated August 2014 (Next calibration due August 2015)

5. Ion Chromatography (Varian)- Measures TTHMs (disinfectants by-products) contaminants

   - Calibrated December 2013 (Next Calibration due December 2014)

6. Gas Chromatography (Varian)- Measures haloacetic acids (disinfectants by-products) contaminants

   - inorganic contaminants, and volatile organic contaminants

   - Calibrated December 2013 (Next Calibration due December 2014)

7. Inductively Coupled Plasma (ICP) Spectrometer - Measures the amounts of inorganic contaminants, lead, copper, and other metals

   - Calibrated May 2014 (Next Calibration due May 2015)

8. Spectrophotometer (Hach)- Measures inorganic contaminants (IOCs)

   - Calibrated August 2013 (Next calibration due August 2015)

9. Spectrophotometer (Thermo)- Measures inorganic contaminants

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- Calibrated May 2014 (Next calibration due May 2015)

10. Titrator (Hach) - Measures chlorine levels

- Calibrated August 2014 (Next calibration due August 2015)

The above equipment is calibrated during each usage by lab technicians using blank samples with known values. Also, an outside contractor performs an annual calibration and records are kept on file at Chugach Environmental Lab.

What Significant Impacts Are

A significant impact is one that would upset the availability of water for it intended use. Also, a significant impact occurs when the drinking water contains a contaminant that has the potential to cause a serious outbreak of a water-borne disease.

Any construction project or action that violates the Safe Drinking Water Act and related regulations will be a significant environmental impact.

Responsible Person(s)

Water Quality Management (potable water)EMS Key Compliance Personnel

The US Army Garrison-Redstone Commander is responsible for supplying clean and safe drinking water to everyone on Redstone Arsenal while complying with all federal, state, and DOD laws and regulations. The Garrison Commander signs the installation's water supply permit applications.

DPW provide designs and construction support for the water system and oversees the construction, operation, and maintenance of the water distribution system to provide sufficient drinking water to installation personnel. The DPW is responsible for providing adequate water treatment to assure drinking water does not exceed the maximum contaminant levels established for human consumption. Training and certification of operating personnel to meet proficiency levels consistent with the operator certification requirements that apply to their location is also the responsibility of the DPW. DPW also maintains up-to-date map of the complete potable water system, makes repairs, flushes the water mains, and maintains the system. DPW is responsible for negotiating and maintaining the installations water supply contract. Additionally, DPW is responsible for the maintenance and operation of the installation's laboratory associated with the water treatment plants.

The Chief, Environmental Management Division (EMD) manages the environmental programs relating to the Safe Drinking Water Act (SDWA) at Redstone Arsenal.

The Chief, Environmental Compliance Branch supervises the EMD Drinking Water Program Coordinator.

The EMD Drinking Water Program Coordinator oversees all of the documentation requirements associated with the SDWA. The EMD Drinking Water Program Coordinator also oversees the management of the cross-connection/backflow prevention programs. He/She is responsible for submitting all reports/records to the state and EPA regulators as required and submitting them on time. The EMD Drinking Water Program Coordinator is responsible for preparing all plans to include the sampling plans, source water assessment, and Annual Water Quality reports.

The base operation support contractor is responsible for the production and distribution of safe drinking water on Redstone Arsenal. The base operation support contractor is also responsible for collecting water samples and analyzing (or having the samples analyzed) the samples for various contaminants. Additionally, the base operation support contractor is responsible for testing the water during and after production and collecting and maintaining the data required by the regulatory community.

The base operation support contractor's WTP operators are responsible for operating and

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maintaining the WTPs inaccordance with the requirements of the SDWA.

The base operation support contractor's water system technicians are responsible for maintaining and repairing the waterlines, valves, pumps, tanks, backflow prevention devices, and chlorine monitoring station in the potable water distribution system. They are also responsible for flushing the mains to keep the water in compliance with the SDWA.

Resources

Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38538
Branch Chief - 52 Hours - $2,949
EMD Drinking water Program Coordinator 1560 Hours/Year - $88,498
GIS Personnel Support - 65 Hours/Year - $3,087

Monitoring and Analyses Contracts required by Law or permit:
Biological sampling (Huntsville Utilities) - $10,500
Chugach/Contract Labs Monitoring and Lab Fees - $65,000/Year

Contract Support (Salaries average approximately $28.00/hour plus benefits)
Chugach Lab Technicians - 520 Hours/Year

WTP Operators (4 Full-time operators) - 8340 Hours/Year

Distribution System Maintenance Technicians - (7 Full-time Technicians) - 14,595 Hours/year

Distribution System Flushing Technicians - (2 Full-time Technicians) - 4,170 Hours/year

Backflow Prevention Devices Maintenance Technicians - (2-Full-time Full-time Technicians) - 4,170 Hours/Year

Operator Training/TDY Expenses - $1,500/Year (Chugach cost)

Funds:
Potable Water Purchases - $1,800,000/Year

Sustainability:
EMD Drinking water Program Coordinator - training required to stay current with the SDWA laws and regulations - $1,500/Year

Sustainability

The Energy and Water Master Plan is a roadmap that envisions secure, reliable, and sustainable energy and water services for Redstone Arsenal. The Plan acts as a framework to achieve at a minimum the mandates outlined in EPAct 2005, EO13423, and EISA 2007 through awareness, measurement, efficiency, and the control of supply and distribution, while establishing stewardship of the environment as a fundamental principle to sound energy and water management.
Redstone Arsenal’s long range goal to move toward a self-sustaining future while continuing to support its mission landscape requires a flexible and adaptive plan. This plan must raise environmental awareness for Redstone Arsenal personnel, local communities, and other government agencies. Through the implementation of new technologies, enhanced monitoring and control systems, increased efficiencies, and renewable energy, the plan will achieve new levels of accountability, systems integration, and a path toward elimination of fossil fuel use while maintaining quality of life for Redstone Arsenal personnel.

In FY08 RSA exceeded the EO 13423 water usage intensity reduction target of 16%,based on the FY07 baseline. This target was met in only one year by reducing water usage intensity from 84 gallons per square foot (GAL/ft Water Trends 2) to 70 GAL/ft2.
Opportunities and Constraints

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RSA has the opportunity to reduce its consumption of fossil fuel derived energy by continuing system efficiency enhancements and altering its focus toward renewable sources. Continued examination and future implementation of renewable resource technology will be crucial to creating a self-sustaining installation. In the short term, RSA can purchase electrical power specifically generated by renewable sources to immediately reduce its carbon footprint and meet federal mandates.
Water system improvements such as the installation of smart meters, a robust leak identification and repair program, and expansion of RSA's industrial water system will further reduce water usage and energy required for potable water processing. Reestablishment of on-site river water as a primary water source will enhance RSA's self sufficiency and ensure adequate water availability.
The main constraint for a self-sustainable future at RSA is a "business-as-usual" culture, which largely ignores specific energy goals. Top level support and communication of conservation methods will be crucial to overcoming this obstacle. Funding constraints will impede progress of efficiency projects; however, an understanding by leadership of the Federal laws and policies regarding energy and water reduction should increase the priority of these projects.

Reduce water consumption intensity 2% annually through FY 2015 or 16% total reduction by the end of FY 2015 (baseline FY 2007). (EO 13423)

We are not meeting this goal. Old water lines, water main leaks, and a low water usage/ water production capacity ratio (approximately 50%) are the key factors that are preventing the installation from obtaining this goal. Also, excessive flushing required to maintain compliance with the SDWA has contributed to the over usage of water on Redstone Arsenal. FY 2010 projects to replace several portions of the old water mains will solve part of the problem but it will take the efforts of top managegent and every consumer to reduce water consumption.

Reduce 2% annually potable water consumption intensity through FY 2020 or 26% by the end of FY2020 (baseline FY 2007 water consumption). (EO 13514)

See the above comments

Identify, promote, and implement water reuse strategies that reduce potable water consumption. (EO 13514)

Note: Redstone Arsenal uses the Tennessee River as it raw water source to produce drinking water. According to a TVA study, the total water withdrawn from the Tennessee River for both industrial and municipal purposes is only 2 to 3 percent of the available annual waterflow and approximately 75 percent of this water is returned to the river. Therefore, we have an adequate supply of raw water to sustain Redstone Arsenal for many years.

Consequences

In the first Safe Drinking Water Act (SDWA) penalty case against a federal facility, EPA settled with the U.S. Army - Redstone Arsenal in Huntsville, Alabama for a cash penalty of $80,000 and $807,000 in supplemental environmental projects (SEPs). This settlement, reached on December 10, 1998, resolves an EPA Region 4 administrative penalty order against the U.S. Army Aviation and Missile Command, Redstone Arsenal, for improper management of its drinking water system which served approximately 22,000 people at the time when the discrepancies were identified. This is the first time EPA has imposed a SDWA penalty against a federal agency since the SDWA was amended in 1996 to give EPA the authority to do so. The Redstone Arsenal settlement is the largest drinking water penalty imposed in Region 4's history. The drinking water violations were uncovered during a 1997 multimedia inspection at the arsenal. Redstone failed to properly operate and maintain its storage tanks and reservoirs, its water main flushing program, to maintain adequate disinfectant residual in the distribution system, and to meet EPA's action requirements for exceeding the total coliform maximum contaminant levels. The supplemental environmental projects (SEPs) agreed to in the settlement provided improvements to Redstone's water system, including the installation of a chlorine monitoring system to enhance water quality by

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allowing the facility to measure chlorine residual on an ongoing basis. In addition, computer software for one of Redstone's water treatment plants was upgraded and water stagnation problems in some of the supply lines was eliminated by looping dead-end water mains. These efforts helped to ensure the installation's water supply is safe, while putting less water purification disinfectant into the environment.

Annual Review

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email from Gene Daniels dated 10/14/2011

Mr. Hazle,

My replies to your EMS aspects review comments are provided below:

- Need 2010 Targets. - I added the targets for 2011; the 2010 targets were already posted (Completed)
- How are we doing on Long Range targets? - Will calculate and post results by 14 Oct 2011 - I completed and posted the results in the Target Aspect for this program. We are exceeding this target - [As of December 30, 2010, we exceeded this goal with an average reduction of 7% per year for 2008 (12%), 2009 (15%), and 2010 (-5%). We did not meet the goal in 2010 but our average did. The projected reduction for 2011 is (6%).
- List the consumer confidence reports awareness, public paper and mailing. - I included these items in the Targets aspect for 2011.
- Check on annual review of Backflow Prevention Plan. This plan was reviewed but needs to be updated to reflect administrative and personnel changes. Mr. Robert Moore of Chugach said that he would get this plan updated.
- Was the internal EPAS done for the Drinking Water Program in 2011? Yes: I finished it on August 05, 2011.

Gene

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need 2010 Targets. - I added the targets for 2011; the 2010 targets were already posted.
How are we doing on Long Range targets? - Will calculate and post results by 14 Oct 2011.
List the consumer confidence reports awareness, public paper and mailing.
Check on annual review of Backflow Prevention Plan. This plan was reviewed but needs to be updated to reflect administrative changes.
Was the internal EPAS done for the Drinking Water Program in 2011? Yes: I finished it on August 05, 2011.

An annual review of this plan was performed by Mr. Terry Hazle and Mr. Eugene Daniels on Thursday, April 8, 2010. The drinking water program manager (Mr. Eugene Daniels) was tasked to make update changes that were identified during this review.

Tuesday, April 20, 2010 4:49 PM
Mr. Daniels sent me a note saying he had updated the portions we discussed.
This concludes my review of this aspect.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
10	**Spills to Soils/Water**	John Souza

Discussion

Spills are an environmental element of Hazardous Materal Management which is a service on Redstone Arsenal that occures under most organizations. There are environmetnal laws and regulations that require the proper response and cleanup of spills. Spills to soils/water are a significant environmental aspect that will be managed as part of the Redstone Arsenal Environmental Management System. Awareness of spill response is promoted through a Red Plan segment of annual RCRA training for generators.

Impacts or possible impacts

- Expose People, plants and animals to toxic contamination
- Increase area necessary to cleanup Contamination of landfill
- Increase erosion and sediment runoff

Goals

Comply with all environmental laws and regulation that have an associations with spills to water/soils..

Prevent pollution by complying with regulation to prevent spills of cleanup spills.

Measurable Targets

Keep spill plan current. Monitor inventory of available spill response supplies, and ensure re-supply needs are met in a timely fashion.

Whenever there is a release of contamination to soil, perform post clean-up sampling and analysis to ensure site clean-up to regulatory standards. Continue clean-up actions until repeat analysis is up to standard.

Immediately notify regulatory agencies whenever a release to waterways occurs.

Letters of Instructions

Legal Requirements

40 CFR 112

Training Requirements

Annual training is provided for all members of the spill response team. Generators receive instruction on spill response as a segment of annual RCRA refresher training.

Awareness

EMD Web page:
The spill response program and storage tank program are found on web link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/other/other.html
The Spill response pages need updating but it is being held up by security office. These were checked on 11/14/2011 by Terry Hazle and determined to be adiquate for awareness.

Newspaper:
Title: Package Deemed to Safe by First Responders
Date: 19 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\019.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs),

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Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

No permits required.

Required Plans

Oil and Hazardous Substance Spill Prevention and Response Plan. The most current ammendment of the spill plan was completed in December 2012. This was primarily a matter of bringing organization names and tank lists up to date. It also includeed insertion of All Hazards Plan into Annex V to provide for the management of hazardous wastes. The latter was to meet the requirements of 40 CFR 260 - 264, under RCRA.

Required Records

Incident reports are kept on a data base.

Monitoring/Measuring Requiremens

Spill incidents that involve significant releases to soil are monitored to ensure that all the contamination has been captured.

EPAS Checklist:

O Guidance documents on hand:
-40 CFR 112
O The SPCC/ISP is current, signed, and POC contact information is current and accurate. The next update of the sill plan is due in 2015.

O Spill response supplies are on hand and adequate for quick response action by the installation spill response team.

O The spill response team has been trained and training is current. The team is due for annual refresher training in October or early November.

O Records of spill events are kept current and complete. A data base is in use; all past spill events have been entered and all new spill events are recorded in the data base ASAP.

O All correspondence with regulatory agencies regarding reportable spills are maintained on file.

O Copies of all pertinent regulations are on hand and current.

O All appropriate personnel of the RSA community receive suitable training on the use and execution of the spill plan. Attendees receive training annually during the RCRA Update class, which is held several times per year. Dates for training sessions depend on the training cycle.

O All new regulations concerning POL management as they apply to RSA have been addressed.

O The installation commander has designated, in writing, a qualified on-scene coordinator responsible for executing spill response.

O Use the Environmental Quality Control Committee (EQCC) to coordinate the SPCCP with affected installation elements.

O Spills of POL are reported the OSC.

O Assistance is provided to Federal, State, or Local agencies in response to spills outside the Army property (upon request).

O POL products are recovered and recycled to protect the environment and conserve energy and natural resources.

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O Care is taken to keep POL products of different sources and different properties separate to ensure homogeneous batches for turn-in.

Calibration

Not applicable.

What Significant Impacts Are

Major spills are rare, but when they occur the National Spill Center is contacted. This is operation related / not construction.

Responsible Person(s)

John Souza, Mike Steirwalt, PE.

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692

Branch Chief - 52 Hours - $2,949
Spill Response Program Manager - 52 Hours - $2,949

Contracts required by law:
SPCC Plan update - $30,000

Sustainability:
2,000- training to stay current with regs

Sustainability

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

What has been done to make people aware of Spills? What can we do?
Need dates for when things were done under monitoring.
What needs to be done to sustain our response to spills?
Who is responsible for doing what when we have spills?
What are the consequences of not handling spills correctly?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
11	**NEPA Reviews**	Allison Guilliams

Discussion

Environmental Planning is the central part of our environmental management and compliance mission and is therefore the central critical aspect of the Environmental Program. The National Environmental Policy Act (NEPA) requires that all Federal agencies incorporate environmental planning and the documentation of that planning effort including identifying environmental impacts into federal actions with the goal of reducing the overall environmental impact of federal activities. We use our environmental review of project and mission requests to input environmental aspects into project and mission planning accomplished by the Garrison and tenant organizations, thereby reducing envoironmental impacts associated with Army actions on Redstone. We also use this review process to concurrently document the planning actions and approve the necessary level of NEPA required documentation. We also use this review process to begin compliance actions required relative to all environmental laws and regulations. As such this program requires significant resources and is a focal point in our EMS program. NEPA will be managed as an aspect under the RSA EMS.

2/13/09, cfe:
The National Environmental Policy Act of 1969 (NEPA) articulates a broad national environmental policy. NEPA also includes requirements for Federal agencies to analyze the environmental impacts of their actions, and of alternatives. The CEQ NEPA regulations identify these requirements as the "NEPA process." The NEPA process includes forecasting the impacts of a proposed action and reasonable alternatives, and identifying mitigation measures for those impacts prior to making decisions and taking action ("predict-mitigate-implement" model). The analyses are documented and made available to the public in NEPA environmental documents such as Environmental Assessments (Eas) and Environmental Impact Statements (EISs).

The application of NEPA occurs before an agency has decided whether and how to undertake a new proposed action or activity. NEPA has generally been viewed as a non-recurring process focused on a specific proposal that terminates with the decision on whether and how to proceed with the proposed action. Generally speaking, agencies have not integrated the NEPA analyses and documents into the ongoing implementation and management of the action. Moreover, the information and analyses contained in NEPA documents are often not revisited to verify or update the accuracy of data, predictions, and/or the efficacy of mitigation options. To a certain extent, the focus of the NEPA process has become the successful production of the NEPA document, the use of which is limited to the point in time a decision on the proposed action is made. The full value of the resources expended in the NEPA process, therefore, frequently does not carry over into the actual implementation and management of the action.

Under NEPA, an agency evaluates a new project at the proposal stage to identify how it or reasonable alternatives will interact with the environment, and what the related impacts will be. Impacts are characterized as to significance based on the setting of the proposed action and the intensity of its impacts.

NEPA analyses and documentation are described in the CEQ NEPA Regulations at 40 CFR Parts 1500-1508. Several provisions in CEQ Regulations address the national environmental policy Congress declared for Federal agencies in Section 101 of the National Environmental Policy Act. The relevant provisions include Sections:
1500.2 (Policy);
1500.1 (Purpose);
1501.2 (Apply NEPA early in the process);
1501.3 (When to prepare an environmental assessment);
1501.4 (Whether to prepare an environmental impact statement);
1501.7 (Scoping);
1502.15 (Affected environment);
1502.16 (Environmental Consequences);
1505.1 (Agency decisionmaking procedures);
1507.2 (Agency capability to comply); and

1508.27 (Significantly).

Impacts or possible impacts

Positive:
- Better compliance with environmental requirements on projects.
- Better knowledge of product and services on the installation by installation environmental team.
- Protect the environment instead of correcting problems.
- Chance to have many experts with different knowledge of environmental aspects evaulte projects.
- Early identification of all compliance issues and requirements associated with the project or mission.

Negative:
- Violation of Federal law and regulations
- Potential of significant delays in the project or mission action
- Potential for loss of control of project or mission to Federal Judge

NEPA Contract Labor Justification (FY 2010 = $285,000):
Contract labor is required as there are more demands for NEPA work than EMD has civil service positions to cover. The NEPA program exists to ensure that RSA remains in compliance with federal law while executing mission operations. Currently, government positions are centralized on coordinating cultural and natural resource functions to carry out and sustain mission activities in concert with other federal laws and regulations. Contract labor personnel provide technical NEPA support and analytical knowledge of potential environmental impacts that are vital to the USAG-Redstone and its mission.

Contract labor to replace intern labor during rotations justification (FY 2010 = $90,000):
Intern employees that are currently working in the National Environmental Policy Act (NEPA) Program of the Cultural/Natural Resource (CNR) Branch of EMD to support mission activities and ensure NEPA compliance are scheduled to start rotations mid FY 2010. In order to maintain compliance with NEPA and continue to support the war fighter, EMD must replace these two vacancies with at least one contract labor employee at an estimated cost of $90,000 per year. This employee will take on the responsibilities of coordinating environmental review of all proposed Installation actions, preparing appropriate NEPA planning documents, and providing updates of NEPA activities to local staff and higher commands.

GIS Support Justification (FY 2010 = $33,762):
The GIS working group in Redstone Arsenal’s EMD is responsible for the transition from the use of USGS topographic quadrangle maps to the use of databases to collect, track, and analyze data. The system allows Cultural/Natural Resource (CNR) Branch Managers to conduct preliminary reviews for proposed construction projects and mission actions. Proposed project locations are created as shape files which can then be overlain with natural, cultural and other environmental resource data layers in a map document. The GIS also allows CNR managers to work with proponent organizations in the early stages of a project to incorporate existing environmental constraints into the design. GIS allows EMD personnel to better manage natural resources without compromising the Army mission. The absence of this program would hinder the ability of CNR to support RSA mission activities in a timely manner.

Environmental Database Support Justification (FY 2010 = $11,254):
Timely integration of the NEPA process into RSA planning actions prevents disruption to the decision making process, thus ensuring the implementation of environmental policy that leads to good decisions. At EMD, a Job Order Request that requires EMD review is entered into the EMD Project Tracking Database, assigned an EMD project number and dispatched via e-mail to environmental program experts in the Cultural/Natural Resources Branch, Compliance Branch, and Restoration Branch. Project reviews, comments, mitigation requirements, and administrative records are tracked and recorded in the Projects Tracking Database; they are maintained by the NEPA Program staff. Support of this database is essential for timely review and turnaround of projects and proposed actions at Redstone Arsenal. Loss of support for this database would create a lag in the review and feedback process that the

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Directorate of Public Works hinges on.

Goals

Comply with NEPA and regulations as well as all environmental laws, regulaitons and policies.

Prevent Pollution.

Measurable Targets

2011 (measured targets 9/16/11):
1) Do an internal assessment of the NEPA review process for compliance with NEPA by December 15, 2011.
Target met? Will assess by target date.

2) 100% review of all work orders that require ground disturbance, impacts to historic structures or activities involving hazardous materials (as well as any other actions requiring evaluation under National Environmental Policy Act) during FY2011.
Target met?
*need to talk with Kathy or JoAnne to figure out how to calculate this metric using JOR website

3) Add and train staff dedicated solely to NEPA program to increase coordination with Construction Branch and contractors by September 30, 2011.
Target met? Yes. Shifting of staff emphasis due to intern program and NEPA staff rotating OUT OF EMD office (A. Nail, K. Guthrie, K. Malone). Trained 1 STEP student (K. Bond) and 2 summer students (M. Hutto and R. Young) to process work orders during second and third quarter of FY11. Incorporated other DPW/AMC interns rotating INTO EMD office to process work orders throughout fiscal year (M. Kachelman, R. Best, B. Diehl, D. Wilson). Replaced one contract support staff position (P. Hudson) and filled vacant contract support staff position (J. Symonds). Staff members were trained in manners to increase coordination within and outside of DPW.

4) Develop a systematic system to inspect work order projects during or after construction to ensure identified mitigation measures are incorporated by December 30, 2011.
Target met? Will assess by target date but did not meet target in 2010 and not on target for 2011 due to emphasis placed on coordinating reviews through office in timely fashion.

2010:
1) Do an internal assessment of the NEPA review process for compliance with NEPA by December 15, 2010.
Target met?

2) 100% review of all work orders that require ground disturbance (National Environmental Policy Act) during FY2010.
Target met?

3) Add and train staff dedicated solely to NEPA program to increase coordination with Construction Branch and contractors by September 30, 2010.
Target met?

4) Develop a systematic system to inspect work order projects during or after construction to ensure identified mitigation measures are incorporated by December 30, 2010.
Target met?

2009:
1) Do an internal assessment of the NEPA review process for compliance with NEPA by December 15, 2009.
Target met? Yes. There was an internal assessment or RSA's review process of NEPA documents for compliance with NEPA. The Projects Tracking Database allows for metrics to be calculated which reflect process time and output.

2) 100% review of all work orders that require ground disturbance (National Environmental

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Policy Act) during FY2009.
Target met? No. 96% reviewd. Of the 257 projects reviewed throught the Projects Tracking Database, 9 were left open.

3) Add and train staff dedicated solely to NEPA program to increase coordination with Construction Branch and contractors by September 30, 2009.
Target met? Yes. Four new staff members joined the CNR Branch to work with the NEPA program. Staff members were trained in manners to increase coordination within and outside of DPW.

4) Develop a systematic system to inspect work order projects during or after construction to ensure identified mitigation measures are incorporated by December 30, 2009.
Target met? No. No system set in place to inspect work orders during or after construction to ensure NEPA compliance.

5) Add a staff member to evaluate pollution prevention for each new project by July 1, 2009.
Target met? No (for the CNR Branch). Staff members within the CNR Branch are dedicated to natural and cultural resource management, along with NEPA program management.

2011:

Letters of Instructions

Legal Requirements

The National Environmental Policy Act of 1969, as amended
(Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982)

National Environmental Policy Act (NEPA) requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

To meet NEPA requirements federal agencies prepare a detailed statement known as an Environmental Impact Statement (EIS). EPA reviews and comments on EISs prepared by other federal agencies, maintains a national filing system for all EISs, and assures that its own actions comply with NEPA

The law establishes the national environmental policy, including a multidisciplinary approach to considering environmental effects in federal government agency decision making. The law also established the President's Council on Environmental Quality (CEQ). The CEQ prepared the regulations implementing the law that apply to all agencies. These regulations are found at 40 CFR Parts 1500 to 1508. Perhaps most notably, the law requires federal agencies to prepare a statement to accompany reports and recommendations for funding from Congress. This document is called an Environmental Impact Statement (EIS). The definition of actions requiring the EIS includes major federal actions significantly affecting the human environment. Thus, before implementing any major or significant or federal action, the agency must consider the environmental impacts of that action, identify unavoidable environmental impacts and make this information available to the public in the EIS. All these conditions must be satisfied before implementing the proposed action

The Army regulations for meeting the above requirements are codified at 32 C.F.R. § 651.14 Integration with Army planning.

(a) Early integration. The Army goal is to concurrently integrate environmental reviews with other Army planning and decision-making actions, thereby avoiding delays in mission accomplishment. To achieve this goal, proponents shall complete NEPA analysis as part of any recommendation or report to decision makers prior to the decision (subject to 40 CFR 1506.1). Early planning (inclusion in Installation Master Plans, INRMPs, ICRMPs, Acquisition Strategies, strategic plans, etc.) will allow efficient program or project

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execution later in the process.

(1) The planning process will identify issues that are likely to have an effect on the environment, or to be controversial. In most cases, local citizens and/or existing advisory groups should assist in identifying potentially controversial issues during the planning process. The planning process also identifies minor issues that have little or no measurable environmental effect, and it is sound NEPA practice to reduce or eliminate discussion of minor issues to help focus analyses. Such an approach will minimize unnecessary analysis and discussion in the NEPA process and documents.

(2) Decision makers will be informed of and consider the environmental consequences at the same time as other factors such as mission requirements, schedule, and cost. If permits or coordination are required (for example, Section 404 of the Clean Water Act, Endangered Species Act consultation, Section 106 of the National Historic Preservation Act (NHPA), etc.), they should be initiated no later than the scoping phase of the process and should run parallel to the NEPA process, not sequential to it. This practice is in accordance with the recommendations presented in the CEQ publication entitled "The National Environmental Policy Act: A Study of Its Effectiveness After Twenty-five Years."

(3) NEPA documentation will accompany the proposal through the Army review and decision-making processes. These documents will be forwarded to the planners, designers, and/or implementers, ensuring that the recommendations and mitigations upon which the decision was based are being carried out. The implementation process will provide necessary feedback for adaptive environmental management; responding to inaccuracies or uncertainties in the Army's ability to accurately predict impacts, changing field conditions, or unexpected results from monitoring. The integration of NEPA into the ongoing planning activities of the Army can produce considerable savings to the Army.1

1 For example, a well-executed EA or EIS on an Installation Master Plan can eliminate the need for many case-by-case analyses and documentation for construction projects. After the approval of an adequate comprehensive plan (which adequately addresses the potential for environmental effects), subsequent projects can tier off of the Master Plan NEPA analysis (AR 210-20). Other integration of the NEPA process and broad-level planning can lead to the "tiering" of NEPA, allowing the proponent to minimize the effort spent on individual projects, and "incorporating by reference" the broader level environmental considerations. This tiering allows the development of program level (programmatic) EAs and EISs, which can introduce greater economies of scale. These assessments are addressed in more detail in paragraph (c) of this section.

(b) Time limits. The timing of the preparation, circulation, submission, and public availability of NEPA documentation is important to ensure that environmental values are integrated into Army planning and decisions.

(1) Categorical exclusions. When a proposed action is categorically excluded from further environmental review (Subpart D and Appendix B of this part), the proponent may proceed immediately with that action upon receipt of all necessary approvals, (including local environmental office confirmation that the CX applies to the proposal) and the preparation of a REC, if required.

(2) Findings of no significant impact. (i) A proponent will make an EA and draft FNSI available to the public for review and comment for a minimum of 30 days prior to making a final decision and proceeding with an action. If the proposed action is one of national concern, is unprecedented, or normally requires an EIS (§651.42), the FNSI must be published in the FR. Otherwise, the FNSI must be published in local newspapers and be made widely available. The FNSI must articulate the deadline for receipt of comments, availability of the EA for review, and steps required to obtain the EA. This can include a POC, address, and phone number; a location; a reference to a website; or some equivalent mechanism. (In no cases will the only coordination mechanism be a website.) At the conclusion of the appropriate comment period, as specified in Figure 2, the decision maker may sign the FNSI and take immediate action, unless sufficient public comments are received to warrant more time for their resolution.

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ii) A news release is required to publicize the availability of the EA and draft FNSI, and a simultaneous announcement that includes publication in the FR must be made by HQDA, if warranted (see §651.35 (e)). The 30-day waiting period begins at the time that the draft FNSI is publicized (40 CFR 1506.6(b)).

(iii) In cases where the 30-day comment period jeopardizes the project and the full comment period would provide no public benefit, the period may be shortened with appropriate approval by a higher decision authority (such as a MACOM). In no circumstances should the public comment period for an EA/draft FNSI be less than 15 days. A deadline and POC for receipt of comments must be included in the draft FNSI and the news release.

(3) EIS. The EPA publishes a weekly notice in the FR of the EISs filed during the preceding week. This notice usually occurs each Friday. An NOA reaching EPA on a Friday will be published in the following Friday issue of the FR. Failure to deliver an NOA to EPA by close of business on Friday will result in an additional one-week delay. A news release publicizing the action will be made in conjunction with the notice in the FR. The following time periods, calculated from the publication date of the EPA notice, will be observed:

(i) Not less than 45 days for public comment on DEISs (40 CFR 1506.10(c)).

(ii) Not less than 15 days for public availability of DEISs prior to any public hearing on the DEIS (40 CFR 1506(c)(2)).

(iii) Not less than 90 days from filing the DEIS prior to any decision on the proposed action. These periods may run concurrently (40 CFR 1506.10(b) and (c)).

(iv) The time periods prescribed here may be extended or reduced in accordance with 40 CFR 1506.10(b)(2) and (d).

(v) When variations to these time limits are set, the Army agency should consider the factors in 40 CFR 1501.8(b)(1).

(vi) The proponent may also set time limits for other procedures or decisions related to DEISs and FEISs as listed in 40 CFR 1501.8(b)(2).

(vii) Because the entire EIS process could require more than one year (Figure 2 in paragraph (b)(2)(i) of this section), the process must begin as soon as the project is sufficiently mature to allow analysis of alternatives and the proponent must coordinate with all staff elements with a role to play in the NEPA process. DEIS preparation and response to comments constitute the largest portion of time to prepare an FEIS.

(viii) A public affairs plan should be developed that provides for periodic interaction with the community. There is a minimum public review time of 90 days between the publication of the DEIS and the announcement of the ROD. After the availability of the ROD is announced, the action may proceed. This announcement must be made through the FR for those EISs for which HQDA signs the ROD. For other EISs, announcements in the local press are adequate. Figure 2 in paragraph (b)(2)(i) of this section indicates typical and required time periods for EISs.

(c) Programmatic environmental review (tiering). (1) Army agencies are encouraged to analyze actions at a programmatic level for those programs that are similar in nature or broad in scope (40 CFR 1502.4(c), 1502.20, and 1508.23). This level of analysis will eliminate repetitive discussions of the same issues and focus on the key issues at each appropriate level of project review. When a broad programmatic EA or EIS has been prepared, any subsequent EIS or EA on an action included within the entire program or policy (particularly a site-specific action) need only summarize issues discussed in the broader statement and concentrate on the issues specific to the subsequent action.2 This subsequent document will state where the earlier document is available.

2 As an example, an appropriate way to address diverse weapon system deployments would be

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to produce site-specific EAs or EISs for each major deployment installation, using the generic environmental effects of the weapon system identified in a programmatic EA or EIS prepared by the MATDEV.

(2) Army proponents are normally required to prepare many types of management plans that must include or be accompanied by appropriate NEPA analysis. NEPA analysis for these types of plans can often be accomplished with a programmatic approach, creating an analysis that covers a number of smaller projects or activities. In cases where such activities are adequately assessed as part of these normal planning activities, a REC can be prepared for smaller actions that cite the document in which the activities were previously assessed. Care must be taken to ensure that site-specific or case-specific conditions are adequately addressed in the existing programmatic document before a REC can be used, and the REC must reflect this consideration. If additional analyses are required, they can "tier" off the original analyses, eliminating duplication. Tiering, in this manner, is often applicable to Army actions that are long-term, multi-faceted, or multi-site.

(d) Scoping. (1) When the planning for an Army project or action indicates a need for an EIS, the proponent initiates the scoping process (see Subpart G of this part for procedures and actions). This process determines the scope of issues to address in the EIS and identifies the significant issues related to the proposed action. During the scoping, process participants identify the range of actions, alternatives, and impacts to consider in the EIS (40 CFR 1508.25). For an individual action, the scope may depend on the relationship of the proposed action to other NEPA documents. The scoping phase of the NEPA process, as part of project planning, will identify aspects of the proposal that are likely to have an effect or be controversial; and will ensure that the NEPA analyses are useful for a decision maker. For example, the early identification and initiation of permit or coordination actions can facilitate problem resolution, and, similarly, cumulative effects can be addressed early in the process and at the appropriate spatial and temporal scales.

(2) The extent of the scoping process, including public involvement, will depend on several factors. These factors include:

(i) The size and type of the proposed action.

(ii) Whether the proposed action is of regional or national interest.

(iii) Degree of any associated environmental controversy.

(iv) Size of the affected environmental parameters.

(v) Significance of any effects on them.

(vi) Extent of prior environmental review.

(vii) Involvement of any substantive time limits.

(viii) Requirements by other laws for environmental review.

(ix) Cumulative impacts.

(3) Through scoping, many future controversies can be eliminated, and public involvement can be used to narrow the scope of the study, concentrating on those aspects of the analysis that are truly important.

(4) The proponent may incorporate scoping as part of the EA process, as well. If the proponent chooses a public involvement strategy, the extent of scoping incorporated is at the proponent's discretion.

(e) Analyses and documentation. Several statutes, regulations, and Executive Orders require analyses, consultation, documentation, and coordination, which duplicate various elements and/or analyses required by NEPA and the CEQ regulations; often leading to confusion,

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duplication of effort, omission, and, ultimately, unnecessary cost and delay. Therefore, Army proponents are encouraged to identify, early in the NEPA process, opportunities for integrating those requirements into proposed Army programs, policies, and projects. Environmental analyses required by this part will be integrated as much as practicable with other environmental reviews, laws, and Executive Orders (40 CFR 1502.25). Incorporation of these processes must ensure that the individual requirements are met, in addition to those required by NEPA. The NEPA process does not replace the procedural or substantive requirements of other environmental statutes and regulations. Rather, it addresses them in one place so the decision maker has a concise and comprehensive view of the major environmental issues and understands the interrelationships and potential conflicts among the environmental components. NEPA is the "umbrella" that facilitates such coordination by integrating processes that might otherwise proceed independently. Prime candidates for such integration include, but are not limited to, the following:

(1) Clean Air Act, as amended (General Conformity Rule, 40 CFR parts 51 and 93).

(2) Endangered Species Act.

(3) NHPA, sections 106 and 110.

(4) NAGPRA (Public Law 101-601, 104 Stat. 3048).

(5) Clean Water Act, including Section 404(b)(1).

(6) American Indian Religious Freedom Act.

(7) Fish and Wildlife Coordination Act.

(8) Comprehensive Environmental Response, Compensation, and Liability Act.

(9) Resource Conservation and Recovery Act.

(10) Pollution Prevention Act.

(11) The Sikes Act, Public Law 86-797, 74 Stat. 1052.

(12) Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements (Executive Order 12856, 3 CFR, 1993 Comp., p. 616).

(13) Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898, 3 CFR, 1994 Comp., p. 859).

(14) Indian Sacred Sites (Executive Order 13007, 3 CFR, 1996 Comp., p. 196).

(15) Protection of Children From Environmental Health Risks and Safety Risks (Executive Order 13045, 3 CFR, 1997 Comp., p. 198).

(16) Federal Support of Community Efforts Along American Heritage Rivers (Executive Order 13061, 3 CFR, 1997 Comp., p. 221).

(17) Floodplain Management (Executive Order 11988, 3 CFR, 1977 Comp., p. 117).

(18) Protection of Wetlands (Executive Order 11990, 3 CFR, 1977 Comp., p. 121).

(19) Environmental Effects Abroad of Major Federal Actions (Executive Order 12114, 3 CFR, 1979 Comp., p. 356).

(20) Invasive Species (Executive Order 13112, 3 CFR, 1999 Comp., p. 159).

(21) AR 200-3, Natural Resources—Land, Forest, and Wildlife Management.

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(22) Environmental analysis and documentation required by various state laws.

(23) Any cost-benefit analyses prepared in relation to a proposed action (40 CFR 1502.23).

(24) Any permitting and licensing procedures required by federal and state law.

(25) Any installation and Army master planning functions and plans.

(26) Any installation management plans, particularly those that deal directly with the environment.

(27) Any stationing and installation planning, force development planning, and materiel acquisition planning.

(28) Environmental Noise Management Program.

(29) Hazardous waste management plans.

(30) Integrated Cultural Resource Management Plan as required by AR 200-4 and DODD 4700.4, Natural Resources Management Program.

(31) Asbestos Management Plans.

(32) Integrated Natural Resource Management Plans, AR 200-3, Natural Resources—Land, Forest, and Wildlife Management, and DODD 4700.4, Natural Resources Management Program.

(33) Environmental Baseline Surveys.

(34) Programmatic Environment, Safety, and Health Evaluation (PESHE) as required by DOD 5000.2-R and DA Pamphlet 70-3, Army Acquisition Procedures, supporting AR 70-1, Acquisition Policy.

(35) The DOD MOU to Foster the Ecosystem Approach signed by CEQ, and DOD, on 15 December 1995; establishing the importance of "non-listed," "non-game," and "non-protected" species.

(36) Other requirements (such as health risk assessments), when efficiencies in the overall Army environmental program will result.

(f) Integration into Army acquisition. The Army acquisition community will integrate environmental analyses into decision-making, as required in this part ensuring that environmental considerations become an integral part of total program planning and budgeting, PEOs, and Program, Product, and Project Managers integrate the NEPA process early, and acquisition planning and decisions reflect national and Army environmental values and considerations. By integrating pollution prevention and other aspects of any environmental analysis early into the materiel acquisition process, the PEO and PM facilitate the identification of environmental cost drivers at a time when they can be most effectively controlled. NEPA program coordinators should refer to DA Pamphlet 70-3, Army Acquisition Procedures, and the Defense Acquisition Deskbook (DAD) for current specific implementation guidance, procedures, and POCs.

(g) Relations with local, state, regional, and tribal agencies. (1) Army installation, agency, or activity environmental officers or planners should establish a continuing relationship with other agencies, including the staffs of adjacent local, state, regional, and tribal governments and agencies. This relationship will promote cooperation and resolution of mutual land use and environment-related problems, and promote the concept of regional ecosystem management as well as general cooperative problem solving. Many of these "partners" will have specialized expertise and access to environmental baseline data, which will assist the Army in day-to-day planning as well as NEPA-related issues. MOUs are encouraged to identify areas of mutual interest, establish POCs, identify lines of communication between agencies, and specify procedures to follow in conflict resolution. Additional coordination is available from state and area-wide planning and development

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agencies. Through this process, the proponent may gain insights on other agencies' approaches to EAs, surveys, and studies applicable to the current proposal. These other agencies would also be able to assist in identifying possible participants in scoping procedures for projects requiring an EIS.

(2) In some cases, local, state, regional, or tribal governments or agencies will have sufficient jurisdiction by law or special expertise with respect to reasonable alternatives or significant environmental, social, or economic impacts associated with a proposed action. When appropriate, proponents of an action should determine whether these entities have an interest in becoming a cooperating agency (§651.45 (b) and 40 CFR 1501.6). If cooperating agency status is established, a memorandum of agreement is required to document specific expectations, roles, and responsibilities, including analyses to be performed, time schedules, availability of pre-decisional information, and other issues. Cooperating agencies may use their own funds, and the designation of cooperating agency status neither enlarges nor diminishes the decision-making status of any federal or non-federal entities (see CEQ Memorandum for Heads of Federal Agencies entitled "Designation of Non-Federal Agencies to be Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act" dated 28 July 1999, available from the President's Council on Environmental Quality (CEQ), Executive Office of the President of the U.S.). In determining sufficient jurisdiction or expertise, CEQ regulations can be used as guidance.

(h) The Army as a cooperating agency. Often, other agencies take actions that can negatively impact the Army mission. In such cases, the Army may have some special or unique expertise or jurisdiction.

(1) The Army may be a cooperating agency (40 CFR 1501.6) in order to:

(i) Provide information or technical expertise to a lead agency.

(ii) Approve portions of a proposed action.

(iii) Ensure the Army has an opportunity to be involved in an action of another federal agency that will affect the Army.

(iv) Provide review and approval of the portions of EISs and RODs that affect the Army.

(2) Adequacy of an EIS is primarily the responsibility of the lead agency. However, as a cooperating agency with approval authority over portions of a proposal, the Army may adopt an EIS if review concludes the EIS adequately satisfies the Army's comments and suggestions.

(3) If the Army is a major approval authority for the proposed action, the appropriate Army official may sign the ROD prepared by the lead agency, or prepare a separate, more focused ROD. If the Army's approval authority is only a minor aspect of the overall proposal, such as issuing a temporary use permit, the Army need not sign the lead agency's ROD or prepare a separate ROD.

(4) The magnitude of the Army's involvement in the proposal will determine the appropriate level and scope of Army review of NEPA documents. If the Army is a major approval authority or may be severely impacted by the proposal or an alternative, the Army should undertake the same level of review as if it were the lead agency. If the involvement is limited, the review may be substantially less. The lead agency is responsible for overall supervision of the EIS, and the Army will attempt to meet all reasonable time frames imposed by the lead agency.

(5) If an installation (or other Army organization) should become aware of an EIS being prepared by another federal agency in which they may be involved within the discussion of the document, they should notify ASA(I&E) through the chain of command. ASA(I&E) will advise regarding appropriate Army participation as a cooperating agency, which may simply involve local coordination.

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Training Requirements

There are no legal training requirements for NEPA review.

2/13/09, cfe:
Staff that contributes to, or uses information from, the NEPA process should be knowledgeable about the CEQ NEPA regulations in addition to agency NEPA procedures (see 40 CFR Part 1507, Agency Compliance). In addition, individuals responsible for the management of agency programs and projects that may have a significant effect on the environment should be aware of specific aspects of the NEPA process, such as those set out in Sections 1506.1 (Limitations on actions during NEPA process) and 1506.10 (Timing of agency action).

Awareness

* Continue to promote awareness through project planning efforts with Master Planning, Construction/Engineering and facility managers with other Redstone tenants.

* Awareness efforts through Redstone Rocket, other publications, or educational outreach sessions.

EMS web page:
The NEPA web page starts at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/nepa/nepa1.html
The page was checked by Terry Hazle and the page is adaquate for Environmental awarenwss.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

2/13/09, cfe:
The process for finalizing EISs described in CEQ NEPA regulations at Sections 1505.2 and 1502.9 are document control procedures that help ensure adequacy, and assist re-approval and updating NEPA documents. Additional relevant provisions include Sections 1502.9(c) (supplemental statements), 1502.20 (Tiering), and 1502.21 (Incorporation by reference).

Agency identification of actions that normally require an EA or EIS, or are categorically excluded, are the foundation for using the NEPA process as part of an environmental management program’s system of operational controls.

Agency identification of actions that normally require an EA or EIS, or are categorically excluded, are the foundation for using the NEPA process as part of an environmental management program’s system of operational controls.

Other operational controls include 1501.8 (Time limits); 1505.1 (Agency decisionmaking procedures); 1506.1 (Limitations on actions during NEPA process); 1506.2 (Elimination of duplication with State and local procedures); 1506.5 (Agency responsibility for: information to applicants; for applicant prepared EAs; for contractor prepared EISs); and 1506.10 (Timing of agency action).

Required Permits

There are no permits required as part of the NEPA process, however, the NEPA process does identify new permitting requirements.

Required Plans

There are no required plans for this program. Only adherence to 32 C.F.R. Part 651.

Required Records

All work order review and REC records are maintained in the Environmental Review Tracking Database by the CNR Branch of the EMD.

Official Copies of the Environmental Assessments and Environmental Impact Statements and public input records are maintained by the CNR Branch of the EMD.

Monitoring/Measuring Requiremens

Mitigation measures are outlined during agency decision making process when implementing NEPA.

Section 1505.2(c) of the CEQ NEPA regulations call for the adoption of a monitoring and enforcement program, where applicable, for mitigation measures identified in an EIS record of decision.

32 CFR 651.15 Mitigation and monitoring:
(a) Throughout the environmental analysis process, the proponent will consider mitigation measures to avoid or minimize environmental harm.
Mitigation measures include:
(1) Avoiding the impact altogether, by eliminating the action or parts of the action.
(2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
(3) Rectifying the impact; by repairing, rehabilitating, or restoring the adverse effect on the environment.
(4) Reducing or eliminating the impact over time, by preservation and maintenance operations during the life of the action.
(5) Compensating for the impact, by replacing or providing substitute resources or environments. (Examples and further clarification are presented in Appendix C of this part.)

(b) When the analysis proceeds to an EA or EIS, mitigation measures will be clearly assessed and those selected for implementation will be identified in the FNSI or the ROD. The proponent must implement those identified mitigations, because they are commitments made as part of the Army decision. The proponent is responsible for responding to inquiries from the public or other agencies regarding the status of mitigation measures adopted in the NEPA process. The mitigation shall become a line item in the proponent's budget or other funding document, if appropriate, or included in the legal document implementing the action (for example, contracts, leases, or grants). Only those practical mitigation measures that can reasonably be accomplished as part of a proposed alternative will be identified. Any mitigation measures selected by the proponent will be clearly outlined in the NEPA decision document, will be budgeted and funded (or funding arranged) by the proponent, and will be identified, with the appropriate fund code, in the EPR (AR 200-1). Mitigations will be monitored through environmental compliance reporting, such as the ISR (AR 200-1) or the Environmental Quality Report. Mitigation measures are identified and funded in accordance with applicable laws, regulations, or other media area requirements.

© Based upon the analysis and selection of mitigation measures that reduce environmental impacts until they are no longer significant, an EA may result in a FNSI. If a proponent uses mitigation measures in such a manner, the FNSI must identify these mitigating measures, and they become legally binding and must be accomplished as the project is implemented. If any of these identified mitigation measures do not occur, so that significant adverse environmental effects could reasonably expected to result, the proponent must publish an NOI and prepare an EIS.

(d) Potential mitigation measures that appear practical, and are unobtainable within expected Army resources, or that some other agency (including non-Army agencies) should perform, will be identified in the NEPA analysis to the maximum extent practicable. A number of factors determine what is practical, including military mission, manpower restrictions, cost, institutional barriers, technical feasibility, and public acceptance. Practicality does not necessarily ensure resolution of conflicts among these items; rather

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it is the degree of conflict that determines practicality. Although mission conflicts are inevitable, they are not necessarily insurmountable; and the proponent should be cautious about declaring all mitigations impractical and carefully consider any manpower requirements. The key point concerning both the manpower and cost constraints is that, unless money is actually budgeted and manpower assigned, the mitigation does not exist. Coordination by the proponent early in the process will be required to allow ample time to get the mitigation activities into the budget cycle. The project cannot be undertaken until all required mitigation efforts are fully resourced, or until the lack of funding and resultant effects, are fully addressed in the NEPA analysis.

(e) Mitigation measures that were considered but rejected, including those that can be accomplished by other agencies, must be discussed, along with the reason for the rejection, within the EA or EIS. If they occur in an EA, their rejection may lead to an EIS, if the resultant unmitigated impacts are significant.

(f) Proponents may request assistance with mitigation from cooperating non- Army agencies, when appropriate. Such assistance is appropriate when the requested agency was a cooperating agency during preparation of a NEPA document, or has the technology, expertise, time, funds, or familiarity with the project or the local ecology necessary to implement the mitigation measure more effectively than the lead agency.

(g) The proponent agency or other appropriate cooperating agency will implement mitigations and other conditions established in the EA or EIS, or commitments made in the FNSI or ROD. Legal documents implementing the action (such as contracts, permits, grants) will specify mitigation measures to be performed. Penalties against a contractor for noncompliance may also be specified as appropriate. Specification of penalties should be fully coordinated with the appropriate legal advisor.

(h) A monitoring and enforcement program for any mitigation will be adopted and summarized in the NEPA documentation (see Appendix C of this part for guidelines on implementing such a program). Whether adoption of a monitoring and enforcement program is applicable (40 CFR 1505.2©) and whether the specific adopted action requires monitoring (40 CFR 1505.3) may depend on the following:

(1) A change in environmental conditions or project activities assumed in the EIS (such that original predictions of the extent of adverse environmental impacts may be too limited);

(2) The outcome of the mitigation measure is uncertain (for example, new technology);

(3) Major environmental controversy remains associated with the selected alternative; or

(4) Failure of a mitigation measure, or other unforeseen circumstances, could result in a failure to meet achievement of requirements (such as adverse effects on federal or state listed endangered or threatened species, important historic or archaeological sites that are either listed or eligible for nomination to the National Register of Historic Places, wilderness areas, wild and scenic rivers, or other public or private protected resources). Proponents must follow local installation environmental office procedures to coordinate with appropriate federal, tribal, state, or local agencies responsible for a particular program to determine what would constitute ‘‘adverse effects.’’

(i) Monitoring is an integral part of any mitigation system.

(1) Enforcement monitoring ensures that mitigation is being performed as described in the NEPA documentation, mitigation requirements and penalty clauses are written into any contracts, and required provisions are enforced. The development of an enforcement monitoring program is governed by who will actually perform the mitigation: a contractor, a cooperating agency, or an in-house (Army) lead agency. Detailed guidance is contained in Appendix C of this part. The proponent is ultimately responsible for performing any mitigation activities. All monitoring results will be sent to the installation Environmental Office; in the case of the Army Reserves, the Regional Support Commands (RSCs); and, in the case of the National Guard, the NGB.

(2) Effectiveness monitoring measures the success of the mitigation effort and/ or the environmental effect. While quantitative measurements are desired, qualitative measures may be required. The objective is to obtain enough information to judge the effect of the mitigation. In establishing the monitoring system, the responsible agent should

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coordinate the monitoring with the Environmental Office. Specific steps and guidelines are included in Appendix C of this part.

(j) The monitoring program, in most cases, should be established well before the action begins, particularly when biological variables are being measured and investigated. At this stage, any necessary contracts, funding, and manpower assignments must be initiated. Technical results from the analysis should be summarized by the proponent and coordinated with the installation Environmental Office. Subsequent coordination with the concerned public and other agencies, as arranged through development of the mitigation plan, will be handled through the Environmental Office.

(k) If the mitigations are effective, the monitoring should be continued as long as the mitigations are needed to address impacts of the initial action. If the mitigations are ineffective, the proponent and the responsible group should re-examine the mitigation measures, in consultation with the Environmental Office and appropriate experts, and resolve the inadequacies of the mitigation or monitoring. Professionals with specialized and recognized expertise in the topic or issue, as well as concerned citizens, are essential to the credibility of this review. If a different program is required, then a new system must be established. If ineffective mitigations are identified which were required to reduce impact below significance levels (§ 651.35 (g)), the proponent may be required to publish an NOI and prepare an EIS (paragraph © of this section).

(l) Environmental monitoring report. An environmental monitoring report is prepared at one or more points after program or action execution. Its purpose is to determine the accuracy of impact predictions. It can serve as the basis for adjustments in mitigation programs and to adjust impact predictions in future projects. Further guidance and clarification are included in Appendix C of this part.

Calibration

There is no calibration of equipment required for NEPA review.

What Significant Impacts Are

Significant Impacts under NEPA are impacts to environmental resources that are protected or regulated by federal laws and/or, and /or are important in the public/societal values.

Failure to do NEPA reviews would be a significant environmental impact.

Responsible Person(s)

AR 200-1 “Environmental Protection and Enhancement”

1-24. Garrison commanders

Garrison commanders (GC) as used in this regulation include commanders of USAR Regional Readiness Support Commands (RRSCs), State Adjutants General relative to the concept of the State as an installation, OCONUS U.S. Army Garrisons, and GCs as appropriate as determined by the IMCOM, Headquarters NGB-ARNG, and State Adjutants General. The GC will—

a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship (see para 1-1a).

b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals, EOs, and overseas FGS.

c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.

d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.

e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.

f. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for

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environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Assess the long-term resource impacts of all environmental agreements. Coordinate resource implications for agreements through command channels to IMCOM, NGB-ARNG, ACOMs, ASCCs, or DRUs as appropriate prior to approval.
l. Ensure that non-DOD HM (that is, HM owned and/or used by non-DOD entities) is not stored, treated, or disposed of on the installation unless approved by the ASA (I&E), his or her designee, or higher authority.
m. Ensure that the installation strategic planning office (or equivalent) incorporates sustainability principles into strategic and other installation management plans; coordinate installation strategic plans with the SMC prior to finalization.
n. Implement an installation-wide Hazardous Materials Management Program (HMMP).
o. Promote recycling/reuse programs and Green Procurement policies.
p. Organize and chair the installation EQCC.
q. Organize and chair the installation Technical Review Committee/Restoration Advisory Board (TRC/RAB), as required.
r. Implement and maintain a mission-focused EMS in accordance with the ISO 14001 standard. Third party registration to the standard is not required, and environmental funds will not be used for this purpose. However, GCs may pursue third party registration when it provides clear and documented mission benefits.
s. Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
t. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
u. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
v. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.
w. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14.
x. Deposit all proceeds from Conservation Reimbursable Programs as outlined in Section 2665, Title 10, United States Code (10 USC 2665); Section 2667, Title 10, United States Code (10 USC 2667); and Sections 670a and 670b, Title 16, United States Code (16 USC 670a and 670b, Sikes Act).
y. Serve as the Federal Agency Official with responsibility for installation compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).
z. Establish government-to-government relations with Federally recognized Indian Tribes and Native Alaskans.
aa. Maintain a public affairs program that encourages public involvement.
ab. Ensure that the installation master plan incorporates environmental considerations.
ac. Identify environmental requirements, forward through command channels, and maintain auditable records.
ad. Execute the environmental budget to meet critical requirements.
ae. Maintain an efficient and well-trained environmental staff.
af. Ensure that Army law enforcement personnel are trained in conservation law enforcement where appropriate.
ag. Ensure that sufficient numbers of professionally trained natural resource management personnel and natural resources law enforcement personnel are available and assigned the responsibility to perform tasks necessary to comply with Section 670e, Title 16, United States Code (16 USC 670e).
ah. Approve record of decision (ROD)/decision documents (DDs) for environmental response actions within delegated approval authority.

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ai. Approve integrated natural resource management plans (INRMPs).
aj. Hold tenant units accountable for complying with the policies and standards of the installation.
ak. Approve annual reports of availability (ROA) for timber sales after review by higher headquarters and USAEC.
al. Designate an installation wildland fire program manager and approve the integrated wildland fire management plan.

The Director of Public Works (DPW) serves as the principal staff engineer and advisor to the Garrison Commander on all Installation Real Property Management activities. He is responsible for the planning, direction, and execution of all work programs at Redstone Arsenal, including, but not limited to, engineering, construction, operations, maintenance, environmental, housing, and real property. Acting through the Chief of the Environmental Management Division, he is responsible for:

•Implementing this INRMP;
•Providing for the training of natural resources personnel;
•Reviewing all environmental documents and construction designs and proposals to ensure protection of natural resources;
•Coordinating with local, state, and Federal government and civilian organizations relative to natural resources management at Redstone Arsenal;
•Managing the Natural Resources Program with appropriate personnel; and
•Developing and implementing programs to ensure the inventory, delineation, classification, and management of all applicable natural resources.

Environmental Management Division

The Chief of the Environmental Management Division (EMD) is responsible for carrying out the integrated management of natural resources on Redstone Arsenal addressed in this INRMP, including environmental quality and land, forest, fish and wildlife, and endangered species management. The environmental policy at Redstone Arsenal is to commit to complying with environmental laws and regulations, the prevention of pollution, and continually improving the system for managing these requirements.

Installation Compliance Branch. Responsibilities of the Installation Compliance (IC) Branch include management of hazardous materials and wastes, drinking water and air quality. This branch also manages programs for wastewater disposal, pollution prevention, solid waste disposal, recycling, and affirmative procurement.

Installation Restoration Branch. Responsibilities of the Installation Restoration (IR) Branch include investigation and cleanup of environmental sites managed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Military Munitions Response Program (MMRP).

Cultural and Natural Resources Branch. Responsibilities of the Cultural and Natural Resources (CNR) Branch include management of the NEPA Program for Installation planning and actions. The Cultural Resources Program is responsible for protecting and managing cultural resource compliance for both archaeological and historical architectural resources on Redstone.

Resources

FY 2010
Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38,538

Labor Required:

Review of work orders
-Coordination with tenants and engineers
-Compliance inspection of project mitigation requirements
3 FTE - 5598 hours
Coordination and production of EA/EIS

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	2 FTE - 3732 hours		
NEPA Coordinator	.3 FTE - 559 hours		
Chief program oversite	.3 FTE - 559 hours		
TOTAL LABOR	5.6 FTE - 10,448 HOURS		
GS LABOR AVAILABLE	3.6 FTE - 6,716 HOURS	$202,554	
CONTRACT LABOR	2 FTE - 3,732 HOURS	$285,000	

CONTRACT SUPPORT LABOR

GIS Support	600 hours - $33762		
Environmental Database support	200 hours - $11254		
CONTRACT SUPPORT LABOR		800 HOURS	$ 45,016
TOTAL REQUIRED CONTRACT LABOR		4532 HOURS	$330,016

Sustainability Project:

Contract labor to replace intern labor during rotations $ 90,000

NEPA Contract Labor Justification ($285,000):
Contract labor is required as there are more demands for NEPA work than EMD has civil service positions to cover. The NEPA program exists to ensure that RSA remains in compliance with federal law while executing mission operations. Currently, government positions are centralized on coordinating cultural and natural resource functions to carry out and sustain mission activities in concert with other federal laws and regulations. Contract labor personnel provide technical NEPA support and analytical knowledge of potential environmental impacts that are vital to the USAG-Redstone and its mission.

Contract labor to replace intern labor during rotations justification ($90,000):
Intern employees that are currently working in the National Environmental Policy Act (NEPA) Program of the Cultural/Natural Resource (CNR) Branch of EMD to support mission activities and ensure NEPA compliance are scheduled to start rotations mid FY 2010. In order to maintain compliance with NEPA and continue to support the war fighter, EMD must replace these two vacancies with at least one contract labor employee at an estimated cost of $90,000 per year. This employee will take on the responsibilities of coordinating environmental review of all proposed Installation actions, preparing appropriate NEPA planning documents, and providing updates of NEPA activities to local staff and higher commands.

GIS Support Justification ($33,762):
The GIS working group in Redstone Arsenal's EMD is responsible for the transition from the use of USGS topographic quadrangle maps to the use of databases to collect, track, and analyze data. The system allows Cultural/Natural Resource (CNR) Branch Managers to conduct preliminary reviews for proposed construction projects and mission actions. Proposed project locations are created as shape files which can then be overlain with natural, cultural and other environmental resource data layers in a map document. The GIS also allows CNR managers to work with proponent organizations in the early stages of a project to incorporate existing environmental constraints into the design. GIS allows EMD personnel to better manage natural resources without compromising the Army mission. The absence of this program would hinder the ability of CNR to support RSA mission activities in a timely manner.

Environmental Database Support Justification ($11,254):
Timely integration of the NEPA process into RSA planning actions prevents disruption to the decision making process, thus ensuring the implementation of environmental policy that leads to good decisions. At EMD, a Job Order Request that requires EMD review is entered into the EMD Project Tracking Database, assigned an EMD project number and dispatched via e-mail to environmental program experts in the Cultural/Natural Resources Branch, Compliance Branch, and Restoration Branch. Project reviews, comments, mitigation requirements, and

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administrative records are tracked and recorded in the Projects Tracking Database; they are maintained by the NEPA Program staff. Support of this database is essential for timely review and turnaround of projects and proposed actions at Redstone Arsenal. Loss of support for this database would create a lag in the review and feedback process that the Directorate of Public Works hinges on.

Sustainability

The purpose of NEPA is to comply with the laws and regulations to sustain environmental quality.

Consequences

2/13/2009, cfe:
Possible Consequences of Not Following NEPA Process

(1) Lawsuits – Enforcement of the NEPA process is by a citizen suit provision meaning anyone can bring a lawsuit against the responsible Federal agency for violation of NEPA. If the federal agency does not properly follow the process of analysis, documentation, disclosure, and consideration in decision making the agency is vulnerable to a lawsuit which begins with an injunction requiring immediate stoppage of work and may take considerable time, effort and cost in attorney fees and court costs to resolve.

Example - September 27, 1999 - O'AHU, HI -- Today, Malama Makua, represented by Earthjustice Legal Defense Fund, and the U.S. Army settled a lawsuit filed in October 1998 to compel the Army's compliance with the National Environmental Policy Act (NEPA) for training and related activities at Makua Military Reservation (MMR) on O`ahu. NEPA requires federal agencies like the Army to take a hard look at potential environmental impacts before taking actions that might cause significant environmental harm. Under today's settlement, the Army agreed that it will not conduct any training at MMR until it first completes a document that assesses comprehensively the environmental impacts of all training-related activities at MMR.

(2) Project Delay – The project can be delayed for a number of reasons stemming from noncompliance with NEPA. Some of these include public opposition, review agency interventions, lawsuits, project redesign, rewrite of documents in appropriate form and content.

Example - April 24, 2008 - The Army's plans to upgrade its training grounds in southeast Colorado sounded simple.
During a time of war, the imminent arrival of thousands of new Fort Carson troops meant Piñon Canyon Maneuver Site would need a facelift. Soldiers would need a weapons course, an air-support complex, medical facilities, a dining hall for up to 1,300 people and more — even a child development center.
But on Wednesday, ranchers adamantly opposed to Army plans for expansion into private and public lands around the site took the proverbial bull by the horns.
Not 1 More Acre!, a nonprofit group concerned for the region's ecology and economy, joined three Piñon Canyon area residents in filing a lawsuit intended to stymie the Army's plan.
At question is whether already-approved construction projects are key to the Army's proposal to nearly triple the size of the 235,000-acre site.
Filed in Colorado's U.S. District Court, the suit claims Fort Carson has violated the National Environmental Policy Act, or NEPA. When the post considered construction projects, it should have also presented its expansion goals to the public, according to the suit.
The suit also argues Fort Carson failed to consider a range of reasonable alternatives and locations, as required by law, to minimize environmental harm. By law, the Army has 60 days to file its initial reply.
Stephen Harris, a Colorado Springs environmental attorney representing Not One More Acre!, says Fort Carson considered only two choices: no action and construction.
In 15 years of NEPA cases, I've never seen an agency take the position [that] there are no alternatives, Harris says.
The goal of the suit, he adds, is to force the Army to scrap its current plans and to reveal exactly what it seeks to do inside and outside the current training site. He is prepared to file an injunction to stop any construction if needed.
Fort Carson officials refused to comment on the suit, citing its status as active

litigation.

(3) Denial of Funding - (Probably the most common problem). If the applicant begins project implementation before FEMA has completed NEPA review funding will be denied, except in very limited imminent threat emergency situations. FEMA's environmental policy memo number 3, in the Desk Reference Appendix F, describes this situation. This further emphasizes the need for applicants and states to be informed of the NEPA process and requirement for the federal agency to complete NEPA before any action by applicants.

(4) Negative Perception - A negative perception of FEMA and the applicant can occur when the public finds that the agency neglected to consider the environment, is in violation of environmental law or unable to mitigate the community's suffering because they neglected to follow the process.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need to update how we did on the targets in 2009 and 2010.
Need to set targets for 2012.
Have we done anything to make people aware that NEPA is a requirement?
How does NEPA help to sustain mission, community and the environment?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
12	**Effects on Threatened and Endangered Species**	Shannon Allen

Discussion

Effects on Threatened and Endangered Species is an environmental element of Natural Resources Management on Redstone Arsenal. Natural Resources Management is a service Redstone Arsenal offers and there are laws and regulations which require proper management of possible significant effects on Threatened and Endangered Species (TES), of which Redstone Arsenal has several. Because effects on Threatened and Endangered Species has been determined to be a significant environmental aspect on Redstone Arsenal, it will be managed as part of the Redstone Arsenal Environmental Management System.

Section 7 of the Endangered Species Act directs all Federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of Federal lands as well as other Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal permits, licenses, or other actions.

Section 9 forbids any person to take any endangered species of fish or wildlife within the United States or the territorial sea of the United States or upon the high seas.

Definitions:

Habitat: The place or environment where a plant or animal naturally lives and grows (a group of particular environmental conditions).

Species of concern: An informal term referring to a species that might be in need of conservation action. This may range from a need for periodic monitoring of populations and threats to the species and its habitat, to the necessity for listing as threatened or endangered. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing. A similar term is A species at risk, which is a general term for listed species as well as unlisted ones that are declining in population.

Person: Includes an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government … or any other entity subject to the jurisdiction of the United States.

Take: To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

Impacts or possible impacts

-Violation of Law

-Possible personal fines /incarceration for take

-Restriction/Loss of control and use of endangered species habitat if law is violated

-Bad press and loss of public support and goodwill

-Designation of critical habitat, which could further restrict use of potential threatened and endangered species habitat

-Loss of biological diversity

-Listed species extinction for critically endangered species

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Goals

Comply with Endangered Species Act and other implemented regulations

Comply with Army regulations

Comply with State threatened and endangered species laws and regulations

Measurable Targets

Review 100% of work orders which might have potential to affect TES or their habitats on Redstone and provide mitigation plans for incorporation into the mission/projects to ensure the project will not affect threatened or endangered species. (FY09: 1st = 96, 2nd = 87, 3rd = 86, 4th = 99) (FY10: 1st = 95, 2nd = 96, 3rd = 96 , 4th = 95) (FY11: 1st = 96, 2nd = 100, 3rd = 88, 4th = 96) (FY12: 1st = 99, 2nd = 97, 3rd = 99 , 4th = 97) (FY13: 1st = 96, 2nd = 96, 3rd = 99, 4th = 90) (FY14: 1st = 90, 2nd = 99, 3rd = 97 , 4th = 99)

Conduct informal/formal (as needed) consultation with the US Fish and Wildlife Service (USFWS) and/or Alabama Department of Conservation and Natural Resources (ALDCNR) on 100% of projects or mission activities which may affect TES on or off Redstone Arsenal.

Ensure that all recommendations resulting from informal consultation or reasonable and prudent alternatives in Biological Opinions resulting from formal consultation with USFWS or ALDCNR are incorporated into mission or project.

Annually monitor the populations of TES on Redstone Arsenal.

Manage populations of TES to stabilize or increase populations on Redstone Arsenal.

Letters of Instructions

Legal Requirements

Federal:

Endangered Species Act of 1973(16 USC 35), 50 CFR 402
Purpose is to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, to provide a program for the conservation of such endangered and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions for the protection of endangered species. Under ESA, the policy of Congress is that all federal departments and agencies must seek to conserve endangered and threatened species, and must use their authorities in the furtherance of the purposes of this act. Further, federal agencies must cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species.

US 50 CFR Part 402:
Outlines rules for Interagency cooperation in regards to ESA.

AR 200-1 Chapter 4 Part 3:
Establishes the Army’s Environmental Protection and Enhancement Program. It defines responsibility for environmental concerns within the chain of command, and requires units to have trained environmental compliance officers.

DODI 4715.3:
Conservation management plans shall be prepared, maintained, and implemented for all lands and waters under DOD control that contain natural resources.

National Environmental Policy Act (NEPA):
All projects must undergo an environmental review to assess potential impacts on Threatened and Endangered Species.

32 CFR 651:

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Brings the Army into compliance with the National Environmental Policy Act (NEPA). This Federal Law requires various levels of environmental impact studies for different uses of the land.

Federal Cave Protection Act:
This Act is intended to protect significant caves on federal lands by identifying their location, regulating their use, requiring permits for removal of their resources, and prohibiting destructive acts. The Act requires that caves be considered in the preparation and implementation of land management plans, and allows for cave location to be kept confidential.

Alabama: (AR 200-1 4-3.a.(1) Comply with applicable Federal, State, and local regulations regarding land resources management and permitting where applicable.) All lists and regulations can be found at http://www.outdooralabama.com/hunting/regulations/2009-10%20Complete%20Reg%20Book%20-FINAL%2011-09%20(as%20of%203-1-10)%20.pdf

Alabama Regulations on Game, Fish, and Fur Bearing Animals: Nongame Species Protected by Alabama Regulations: Nongame Species Regulation(220-2-.92):
It shall be unlawful to take, capture, kill, or attempt to take, capture or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following nongame wildlife species (or any parts or reproductive products of such species) without a scientific collection permit or written permit from the Commissioner, Department of Conservation and Natural Resources, which shall specifically state what the permittee may do with regard to said species.

Alabama Regulations on Game, Fish, and Fur Bearing Animals: Nongame Species Protected by Alabama Regulations:
220-2-.97 Alligator Protection Regulation (220-2-.97):
Except to the extent otherwise provided by Act No. 89-874, H. 17, 1989 Regular Session, Rule 220-2-.95, Rule 220-2-.96, or any other law or regulation enacted or adopted by the Alabama Legislature or Department of Conservation and Natural Resources, it shall be unlawful to possess, take, capture, or kill, or attempt to possess, take, capture, or kill, any
alligator, or the skins, meat, eggs, or parts thereof.

Alabama Regulations on Game, Fish, and Fur Bearing Animals: Nongame Species Protected by Alabama Regulations:
Invertebrate Species Regulation (220-2-98):
It shall be unlawful to take, capture, kill, or attempt to take, capture or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following invertebrate species (or any parts or reproductive products of such species) without a scientific collection permit or written permit from the Commissioner, Department of Conservation and Natural Resources, which shall specifically state what the permittee may do with regard to said species.

Alabama Title 9: CNR 13, Forests and Forest Products, Article 10: Ginseng Regulation:
Defines and regulates collection, registration and record keeping, exportation, and violations for Ginseng harvest.

Training Requirements

Conservation Officer must be trained to recognize TES present on the installation and common disturbances or methods of take. (AR 200-1, 4-3 d.5.q)

Ensure that TES awareness is included in unit training for personnel who may come in contact with listed species and/or their habitats or critical habitat. Coordinate training with the installation engineer, environmental directorate, and ITAM sustainable range component. (AR 200-1, 4-3 d.5.q)

Environmental training, awareness, and competence (AR 200-1 15-3 a-g)
a. All personnel who perform tasks that can cause significant environmental impacts will be competent on the basis of appropriate education, training, and/or experience.

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B. Personnel in non-environmental managerial functions will receive appropriate technical and/or awareness training.
C. All organizations will identify training needs (including legally mandated training), document training taken, and evaluate effectiveness.

Awareness

AR 200-1, 4-3 d.5.q: Ensure that TES awareness is included in unit training for personnel who may come in contact with listed species and/or their habitats or critical habitat. Coordinate training with the installation engineer, environmental directorate, and ITAM sustainable range component.

2009:
Earth Day Celebration
Madison County Drinking Water Festival
Bring Your Child to Work Day
EN/Co Org Day Presentation

2010:
Earth Day Celebration
Madison County Drinking Water Festival
Bring Your Child to Work Day
National Public Lands Day - trash clean-up at HSV Spring Branch

2011:
Earth Day - cancelled due to inclement weather
Madison County Drinking Water Festival-cancelled due to inclement weather
Bring Your Child to Work Day-cancelled due to inclement weather
National Public Lands Day - Path To Nature Work Day
Article about white-nose syndrome in bats and cave closure on RSA (1/26/11)

2012:
MEarth Day Celebration
Madison County Drinking Water Festival
Article about NPLD on science.dodlive (11/5/11)
Article in Redstone Rocket about mountain lions/black panthers (1/18/12)
Article in Rocket about Endangered Species Day (5/11/12)
Article in Rocket about NWSG(11/14/12)

EMD Web Page:
The Threatened and Endangered Species on Redstone Arsenal web page starts at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/NaturalRes/TNEProgPage.html
The Threatened and Endangered Species Web Page was checked by Terry Hazle on 11/14/2011
The pages could use some updating but is more than adaquate for Environmental Awareness.

2013:
Earth Day Celebration
Madison County Drinking Water Festival
Article in Rocket about invasive species (3/6/13)
Article in Rocket about osprey nest on post (5/1/13)

2014:
Earth Day Celebrations
Madison County Drinking Water Festival
Hosted Alabama Bat Working Group Bat Blitz

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect.
The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws.

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(Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

_____

Endangered Species Management Component: Last version in 2006, update due in 2011). AR 200-1(4-3 d 5 a) requires installations to prepare an Endangered Species Management Component (ESMC) to the Integrated Natural Resources Management Plan (INRMP) for all listed and proposed TES. The component can currently be found in section 2.3.1. The installation ESMC should be used as a tool to achieve conservation objectives/plans for populations of listed and proposed TES (including but not limited to inventory, monitoring, habitat enhancement, habitat protection) and to minimize impacts on the training mission. AR 200-1 further requires the development of ESMCs for species at risk.

Integrated Natural Resources Management Plan: Responsible under the Sikes Act for carrying out programs and implementing management strategies to conserve and protect biological resources on its lands. Because military lands and waters often are protected from human access and impact, they contain some of our nation’s most significant remaining large tracts of land with valuable natural resources. Congress established the Sikes Act in 1960 to manage these lands for wildlife conservation and human access.

The Sikes Act was amended in 1997 to develop and implement mutually agreed upon Integrated Natural Resource Management Plans (INRMPs) through voluntary cooperative agreements between the DOD installation, FWS, and the respective state fish and wildlife agencies.

Required Permits

Currently have no permits for federally listed species.

Have ALDCNR scientific take permits for green salamanders.

Auburn University has a permit to study and take cuttings on Price's Potato Bean for propogation at the Atlanta Botanical Garden.

Have USFWS and ALDCNR for possession of migratory birds for educations purposes

Required Plans

The Endangered Species Management Component (ESMC) within the INRMP for all TES is developed and updated as necessary by the Endangered Species Program Manager and kept by the CNR Branch as a section of the Integrated Natural Resources Management Plan (AR 200-1, 4.3 d.5.a). As a separate plan, this was last updated in 2005, was updated as a component for the INRMP in 2010.

Integrated Natural Resources Management Plan (INRMP) which is developed and kept by the Cultural and Natural Resources Branch of the Environmental Management Division (AR 200-1, 4.3.d.1.a). This was last updated in 2010.

USFWS Recovery Plans for TES: Gray Bat, Indiana Bat, Alabama Cave Shrimp, Price's Potato Bean, Whooping Crane

Required Records

Records of all informal and formal consultations with USFWS are kept by the CNR Branch in files associated with the specific project to document consultation process and outcome (AR 200-1, 4-3 d.5.h). These records are located with the specific project files, both as paper and/or as email files.

Population and monitoring data and analyses for TES are kept by the CNR Branch to document population levels and response to management actions (AR 200-1, 4-3 d.1.4.5-8). These records are kept as e-files on the T-drive in the protected species folder and original field data sheets are kept on file in the TES Managers Office..

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GIS Population Shape files and habitat buffer areas for TES (AR 200-1, 4-3 d.1.r.7) are maintained by CNR Branch as a current layer in the Geographic Information System of the Environmental Management Division. These also are included in the ESMC of the INRMP.

Assessments/reviews of all activates to determine whether they may affect TES (AR 200-1 4-3 d.5.e and g) are located with specific project files as e-files on the T-drive in the NEPA database and as paper copies of REC's in the NEPA coordinator's office.

Monitoring/Measuring Requiremens

Monitoring of TES (AR 200-1 d.1.r.7 and AR 200-1 4-3 d.5.a):

Alabama Cave Shrimp (1990 - 2014)
Price's Potato Bean (1995, 1997 - 2013)
Gray and Indiana Bat (2006 - 2007) (2014)
American alligator (none)

Survey and Monitoring of SAR (Species at risk) (AR 200-1 4-3 d.6.a-d):

Harper's Umbrella Plant (1995, 2005 - 2007)
Alabama Least Trillium (1995, 2006 - 2014, 2015 - 2017)
Tuscumbia Darter (Initial population: 2006 - 2013), (New populationa: 2010-2015)

State listed species in INRMP (includes survey, monitoring, management)(AR 200-1 4-3 d.5.w):

Green Salamander (1995, 2008-2009, 2014 - 2017)
Southern Cave Fish (1990 - 2010) through Alabama Cave shrimp monitoring
Ginseng (2006, 2009, 2010)
Bald Eagle (known nest: 2006 - 2013)

Installation-wide survey of flora and fauna which describes and maps distribution and extent of flora, fauna, and vegetation communities (AR 200-1 d.1.r).

Justification: Monitor population of and water quality in habitat of federally endangered Alabama Cave Shrimp.

The Alabama cave shrimp, Palaemonias alabamae Smalley, 1961, is a rare, troglobitic shrimp protected since 1988 by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (USFWS, 1988). The Endangered Species Act and the Recovery Plan (USFWS, 1996) for the Alabama cave shrimp provide for protection and study of the species on federal property and to that end, numerous studies have been conducted to monitor the population and its habitat in Bobcat Cave and vicinity. These studies have increased our knowledge of the recharge area of Bobcat Cave, the long-term trends in water quality in Bobcat and Matthews Caves, the seasonal water levels in Bobcat Cave, the quality and relationships of local surface and groundwater, and the life history and population trends of the Alabama cave shrimp. Monitoring of the shrimp population within the cave should be continued, and information should be gathered and compiled into the existing database to further refine and monitor population trends.

Monitoring of State Protected species population (AR 200-1 4-3 d.5.w) and SAR population (AR 200-1 4-3 d.5 u-v and 6.a-d).

Justification: Determine extent of newly discovered state protected Tuscumbia darter population

The Tuscumbia darter is restricted to valley-floor springs in the Highland Rim province of northern Alabama and southern middle Tennessee. The Tuscumbia darter was recently listed as a priority 2 species (High Conservation Concern) in Alabama (Mirarchi and others, 2004). That determination was due to the loss of half the known historic localities due to impoundment of Tennessee River and degradation of other spring habitats by removal of aquatic vegetation, dewatering, excessive sedimentation, agricultural use of springs, and small impoundments (Mettee and others, 1996; Kuhajda, 2004). Boschung and Mayden (2004)

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recommended a status of Threatened due to the species' restriction to spring environments and the extreme vulnerability of springs to developmental degradation. One of the known Tuscumbia darter populations in Alabama occurs in the Williams Spring complex on National Aeronautical and Space Administration (NASA) property within the boundaries of U. S. Army's Redstone Arsenal (RSA) and is monitored annually. Recently, another population was discovered north of the original location. Population status (extent, health, and size) needs to be determined so that it can be properly managed.

Justification: Determine extent of state protected Green Salamander population

The green salamander (Aneides aeneus) has been found on Redstone Arsenal, first in the 1993-1995 Natural Heritage Program baseline survey and again in a brief student summer research project in 2009. Gravid females and young green salamanders were present in 2009 indicating a breeding population. However, the green salamander appears to be in decline throughout its range of the Appalachian Mountains region, including Redstone Arsenal. The Redstone Arsenal mission continues to develop and expand, possibly putting the green salamander populations here at risk. Once a candidate for listing under the Endangered Species Act (ESA) (1994), the green salamander was included in a petition submitted to the Secretary of the Interior by the Center for Biological Diversity in July of 2011. This means that it again is under scrutiny for protection under the Endangered Species Act. It also is an Army Species at Risk and a state of Alabama protected nongame wildlife species. There is some indication that there are distinct populations so listing under the ESA may be based on those distinctions, making genetic determination necessary. Project should include systematic survey of approximately 4000 acres of suitable habitat which includes rock crevices in sandstone dolomite, granite, and quartzite and caves, with rock type being less of a determinant then crevice size and moisture (humidity). Early analysis of habitat availability indicates that ~2000 acres on the south end of Redstone along the Tennessee River bluff and the rocky terrain of Madkin/Weeden Mountains is suitable habitat and should be the focus areas of the survey. Deliverable should include GIS files with known captures of green salamanders. A report with its associated plant and animal species, physical parameters associated with its presence, population modeling which includes threats to habitat, current reproductive rate, presence/absence, predicted changes associated with climate change, genetic sampling analysis and results, statistical results, and management suggestions based on a 2 year survey.

Proactive measures taken by DoD to understand, manage, and protect the green salamander and its habitat will prevent any future restrictions on mission or development due to it impending listing under the Endangered Species Act.

Calibration

We do not have any equipment that requires calibration.

What Significant Impacts Are

Under the Endangered Species Act (ESA), any action that may affect an individual or population of a listed species is considered significant. Any violation will be a significant environmental impact.

Under NEPA, any action that would affect a federally listed species or its habitat so as to require formal consultation with the U.S. Fish and Wildlife Service would be considered a significant impact.

Army regulation and policy is to manage all state listed species, those species listed as candidates for listing under the ESA, or those species with declining populations in that may result in their listing to stabilize their populations and eliminate the need for listing in the future. Therefore any impact to these groups of species or their habitat is considered significant.

Responsible Person(s)

Garrison Commanders (GC) are ultimately responsible for managing natural resources in an effective manner to preserve biodiversity and perform ecosystem management such that the mission is not adversely impacted. The GC is responsible for programming funds for natural

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resources management and for ensuring that the entire Installation comply with and understand the ESA and other applicable laws and regulations in relation to TES.

Director of Public Works is responsible for supervising, controlling, and managing Installation Natural Resources. Is responsible for ensuring that all DPW employees comply with and understand the ESA and other applicable laws and regulations in relation to TES. Is responsible for protecting habitat associated with TES and hiring personnel that are knowledgeable in TES and ensures that the budget includes funding to support this.

Environmental Management Division Chief is responsible for identifying funding requirements, supervising, controlling, and managing Installation Natural Resources, including threatened and endangered species. Is responsible for ensuring that all EMD employees comply with and understand the ESA and other applicable laws and regulations in relation to TES. Is responsible for protecting habitat associated with TES and hiring personnel that are knowledgeable in TES and ensuring that the budget includes funding to support this.

The Cultural and Natural Resources Branch Chief is responsible for identifying funding requirements, supervising, controlling, and managing threatened and endangered species. Is responsible for ensuring that all CNR employees comply with and understand the ESA and other applicable laws and regulations in relation to TES. Is responsible for protecting habitat associated with TES and hiring personnel that are knowledgeable in TES and ensuring that the budget includes funding to support this.

Endangered Species Program Manager serves as endangered species specialist with emphasis on monitoring and managing the habitats and populationsof the threatened and endangered species (TES). Conducts independent field surveys to determine the status of TES reproductive success habitat quality, and compliance of Redstone Arsenal personnel with laws and regulations protecting the species; analyzes and evaluates the data, and reports these findings. Prepares educational programs for Redstone Arsenal military and civilian personnel and the general public concerning TES. Serves as member of inter-disciplinary team in preparation of Records of Environmental Consideration/Environmental Assessments/Environmental Impact Statements as coordinated by National Environmental Policy Act (NEPA) program manager. Performs assigned duties in support of the comprehensive wildlife and fisheries management program. Serves as inter-disciplinary-team member researching and planning programs and studies to assess the quality of the environment at Redstone Arsenal. Serves as the Installation subject matter expert on TES. Develops and executes the budget and annual work plans for TES program area.

Environmental Officer enforces requirements to protect TES, SAR, and state listed species from take or investigate take.

Resources

FY14
Administration Overhead Cost (Chief's Office) - 409 Hours - $19,269

Labor:

Ecologist	1.00	man-year -	1866 Hours -	$60,287
CNR Branch Chief	.1	man-year -	187 Hours -	$ 5,640
	GS LABOR	HOURS	2462	$ 85,196
GIS Support	.125	man-year -	233 Hours -	$ 13.10
	CONTRACT LABOR	HOURS	233	$ 13,110

Contracts REQUIRED:

Alabama Cave Shrimp Monitoring (ESA) - $33,931 (24,446 RSA, 9,485 GSA)

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T&E Habitat Management and Restoration - $268469.10

TOTAL REQUIRED CONTRACTS - $33,931

CONTRACT STEWARDSHIP
Define Geographic local of Green Salamanders (AR 200-1)
- $150,000
TOTAL STEWARDSHIP CONTRACTS $ 150,000

In-house:
NEPA
Bald Eagle nest monitoring
Least Trillium monitoring
Potato Bean monitoring
Harper's Umbrella Plant monitoring
Southern Cave Fish monitoring
Ginseng monitoring
Cumberland Rosinweed monitoring
Green Salamander monitoring
Golden Eagle monitoring

Sustainability

Contracting Officers, COR's, and the TES Program Manager can encourage contractors to implement energy conservation measures in their field work.

Educating members of DPW and other relevant parties on TES laws and regulations and the impetus behind them can reduce project delays and waste resulting from interrupted or rerouted projects due to non-compliance with applicable TES laws and regulations.

Consequences

Violation of the ESA can result in extended delays in project or mission activities while extensive biological and habitat studies are completed. Jeopardy Biological Opinion may result in restoration or other extreme management actions and may impact lands available for Army mission.

Violation of ESA will result in adverse publicity for Redstone Arsenal, the Army, and the Department of Defense.

Violation involving intentional take may result in federal penalties up to $50,000 and/or up to one year in prison for each individual impacted and/or civil penalties of up to $25,000 for each individual impacted. Unintentional take may result in a maximum of $1,000 penalty.

Violation of Bald and Golden Eagle Protection Act shall result in federal fines of up to $5000 for first conviction and $10,000 for second conviction and civil fines of no more than $5,000 for each violation.

Violation of state laws and regulations may result in fines and adverse publicity for Redstone and the Army.

Alabama Cave Protection Act: Class C Misdemeanor is a fine of $500.00. A Class B Misdemeanor is a fine of $ 1,000.00 and a Class A Misdemeanor is a fine of $2,000.00.

Failure to protect and manage candidate, rare and state listed species according to AR 200-1 and Army Policy may result in more species listed under ESA and potential loss of or restrictions on lands available for Army mission.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

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Annotate measureable targets program.
Any newspaper articles on T&E species on Redstone?
The aspect plan seems to be in order.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
13	**Effects to Historical structures or Districts**	Ben Hoksbergen

Discussion

Laws require that structures and areas be evaluated for their historical significance. The loss of these significant historical structures would be a significant effect on the environment. Because of this we have chosen to manage the effect to historical structures or districts under the Redstone Arsenal EMS

Management of Historic Structures is a service provided by the Environmental Management Division. Historic structures (or potentially Historic Structures) are: abundant on Redstone , defined as significant by law, and protected by law. Therefore, they are managed as a significant aspect of the Environmental Management Program.

Historic buildings are a non-renewable resource that provides us with a tangible link to the past. The law requires Federal agencies to preserve significant historic properties over 50 years old. The definition of significance is based on four criteria set forth in the National Historic Preservation Act (36 CFR 60.4):

Criterion A - association with significant historical events or broad patterns in American history

Criterion B - association with individuals important to American history

Criterion C - representative of the work of a master, artistic merit, or representative of a particular style or time period

Criterion D - data important to the understanding of history or prehistory

Most of the significant historic structures and historic districts on Redstone Arsenal are significant based on Criteria A.

Impacts or possible impacts

Violation of law potentially resulting in fines and/or adverse publicity for Redstone and Army

Loss of structures significant to our national heritage

Potential impacts to project or mission schedule

Goals

Maintain compliance with cultural resources laws, statutes, and regulations

Measurable Targets

Complete Architectural Historical Inventory of approximately 160 buildings that are in the IFS database and are 50 years old but have not been evaluated for NRHP eligibility by 31 Dec 2010.

Scan drawings of buildings 7120, 7625, 8879, and 8876 and send to the ALSHPO to complete the mitigation requirements of MOA-06159-200 by 30 Sep 2010.

100% Curation of mitigative documentation by 31 Dec 2010.

Provide review of 100% of proposed projects that involve possible impacts to architectural/structural resources and if there is a potential for significant impacts, ensure that any impacts are in accordance with the two MOAs on the treatment and management of historic structures. If structures are not covered by the two MOAs, recommend avoidance or initiate the Section 106 process within 2 weeks of receiving detailed information on the project.

Conduct architectural historical inventory of any buildings or structures within 2 years of becoming 50 years old and complete inventory by the time they become 50 years old.

Conduct Section 106 Documentation of buildings and/or structures that have become 50 years old and needing further study or determined NRHP eligible.

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Develop a historic buildings and/or structures MOA with the SHPO for buildings and/or structures that are determined NRHP eligible.

Input information into the IFS for buildings and/or structures that are designated never evaluated (NEV) .

Develop FY 2011 annual work plan for managing and protecting historic structural resources by 1 Sep 2009.

Indentify funding requirements for historic structural management and projects for FY 2011 by April 30, 2010.

Update Geographic Information System (GIS) layer for cultural resource data on structures within 30 days of new data availability.

Develop a checklist of cultural resources laws, statutes, and regulations and complete a self-assessment for compliance by 30 June 2009.

Develop a MOA or CA with Native American tribes, per the Native American Graves Protection and Repatriation Act (NAGPRA) and the National Historic Preservation Act (NHPA) Section 106 process by 30 Mar 2010.

Review ICRMP annually by 1 June and update as needed annually to remain current by 30 September.

Letters of Instructions

Legal Requirements

Antiquities Act of 1906
Wthin this act, 16 U.S. Code (USC) 431-433, the President of the United States is authorized to declare historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest, that are situated upon the lands owned or controlled by the Federal Government, to be national monuments (16 USC 431). Permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions, may be granted by the Secretaries of the Interior (SOI), Agriculture, and Army to institutions they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe (16 USC 432).

Historic Sites Act of 1935.
This act, Public Law (PL) 74-292 (16 USC 470-470w-6), authorizes the designation of national historic sites and landmarks, authorizes interagency efforts to preserve historic resources, and establishes a maximum fine of $500 for violations of the act.

P.L. 86-523, Archeological and Historic Preservation Act (AHPA), June 27, 1960
Thhis act, PL 93-291 (amends PL 86-523); (16 USC 469-469c), directs Federal agencies to notify the SOI when they find that any Federal construction project or Federally licensed activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. It also provides criteria for funding historical and archaeological protection for such projects.

P.L. 89-665, National Historic Preservation Act of 1966 (NHPA), October 15, 1966
This act, 16 USC 470-470w-6, last amended in August 1992, addresses the issue of preserving our national history. The Congress declares that the historical and cultural foundations of the nation should be preserved as a living part of our community life and development; and that the preservation of this irreplaceable heritage is in the public interest so its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans (16 USC 470(b)(2)(4)). The policy of the Federal Government is to:
1.use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive

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harmony and fulfill the social, economic, and other requirements of present and future generations
2.provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations
3.administer Federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations
4.contribute to the preservation of non-Federally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means
5.encourage the public and private preservation and utilization of all usable elements of the nation's historic built environment
6.assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities (16 USC 470-1).

National Environmental Policy Act of 1969
The purpose of this act, 42 USC 4321-4370c, as last amended in November 1990, was to declare a national policy to encourage productive and enjoyable harmony between man and his environment. Additionally, it provides for the promotion of efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man (42 USC 4321).

Executive Order 11593 - Protection and Enhancement of the Cultural Environment – 1971

Public Buildings Cooperative Use Act of 1976.
This act, 40 USC 490, 601 note, et seq, was last amended in November 1988. Under this act, the Administrator of General Services must, among other duties, acquire and use space in suitable buildings of historic, architectural, or cultural significance, unless use of such space would not prove feasible and prudent compared with available alternatives (40 USC 601a(a)(1)).

Native American Graves Protection and Repatriation Act of 1990
This act, 25 USC 3001-3013, permits the intentional removal from or excavation of Native American cultural items from Federal or tribal lands for purposes of discovery, study, or removal of such items only if:
1.such items are excavated or removed pursuant to a permit issued which must be consistent with this act
2.such items are excavated or removed after consultation with or, in the case of tribal lands, consent of the appropriate (if any) Indian tribe or Native Hawaiian organization
3.the ownership and right of control of the disposition of such items must be as provided in subsections (a) and (b) of this section
4.proof of consultation or consent is shown (25 USC 3002(c)).
Each Federal agency and museum which has possession or control over holdings or collections of Native American human remains and associated funerary objects must compile an inventory of such items and, to the extent possible based on information processed by such museum or Federal agency, identify the geographical and cultural affiliation of such item (25 USC 3003(a)). Each Federal agency or museum that has possession or control over holdings or objects of Native American unassociated funerary objects, sacred objects, or objects of cultural patrimony must provide a written summary of such objects based on available information held by such agency or museum. The summary must describe the scope of the collection, kinds of objects included, reference to geographical location, means and period of acquisition and cultural affiliation, where readily ascertainable.

White House Memorandum Dated 29 April 1994 – Government-to-Government Relations with National American Tribal Governments

Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments – 2000

Executive Order 13287 - Preserve America - 2003
This EO, dated 3 March 2003, states that it is the policy of the Federal Government to

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provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The EO directs Federal agencies to [Added April 2003]:

- seek partnerships with State and local governments, Indian tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties.
- agencies with real property management responsibilities shall prepare an assessment of the current status of its inventory of historic properties required by section 110(a)(2) of the NHPA (16 U.S.C. 470h-2(a)(2)), the general condition and management needs of such properties, and the steps underway or planned to meet those management needs
- report on its progress in identifying, protecting, and using historic properties in its ownership and make the report available to the Council and the Secretary.

Executive Order 13327, Federal Real Property Asset Management.
This EO, dated 4 February 2004, establishes the Federal Real Property Council (Council) to develop guidance for, and facilitate the success of, each agency's asset management plan. The Council is to be composed exclusively of all agency Senior Real Property Officers, the Controller of the Office of Management and Budget, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. The Senior Real Property Officer is designated by the head a department of agency. The Senior Real Property Officer is required to develop and implement an agency asset management planning process that meets the form, content, and other requirements established by the Federal Real Property Council. In relation to cultural resources, the Senior Property Officer shall incorporate planning and management requirements for historic property under Executive Order 13287 of 3 March 2003, and for environmental management under Executive Order 13148 of 21 April 2000. Under EO 13327, para 2(a) "federal real property" is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of this order, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety [Added April 2004].

State/Local Regulations
For information on regulations in specific states, see the State Supplements to TEAM Guide.

At the state level, the State Historic Preservation Officer (SHPO) provides assistance in determining cultural significance and eligibility for the National Register but may also nominate properties, irrespective of ownership. The SHPO must be consulted whenever there is a Federal undertaking, and for development of cultural resources plans.

States may also issue regulations designating state historical sites.

Alabama Code 41-9-242
This 1966 act (last ammended in 1971 with Act 500) establishes and sets the purposes for the Alabama Historical Commission to protect the State of Alabama's historic and prehistoric resources.

Training Requirements

Personnel assigned duties in cultural resources, including the Cultural Resources Manager are required to have the appropriate knowledge, skills, professional training, and education to carry out their responsibilities. (DoDI 4715.3, para 4.1.10 and AR 200-4, para 1-9b)[Revised December 1997, Revised July 2003, Revised April 2004].

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Awareness

EMD Web Page
The Architectural Historical page begins at:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/CulturalRes/content/ARCHITECTURAL%20HISTORICAL%20PROGRAM.pdf
The site was checked by Terry Hazle on 11/14/2011 and is OK for Environmental Awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

SOP #1 - #10, Integrated Cultural Resources Management Plan, August 2006 - pages 5-16 through 5-49.

National Register Criteria of Evaluation (36 CFR 60.4)

How to Apply the National Register Criteria for Evaluation (National Register Bulletin 15, 1991)

Guidelines for Local Surveys: A Basis for Preservation Planning (National Register Bulletin 24, revised 1985)

Secretary of the Interior's Standards for Treatment of Historic Properties

Preservation briefs and technical notes

Alabama’s Guidelines: Preparing Reports for Historic Structures Surveys and Evaluations Under Section 106 and 110 of the National Historic Preservation Act of 1966 (AHC)

Alabama Survey Manual (Standing Structures Survey Manual) (AHC)

Alabama Historical Commission Survey form for Standing Structures (AHC)

Required Permits

There are no permit requirements.

Required Plans

Integrated Cultural Resources Management Plan (ICRMP), published 2006 is in effect. Next required update is 2011.

Cultural Resources Manager is responsible for the ICRMP.

Copies are maintained by the Cultural Resources Manager and Archaeologist.

Required Records

Correspondence with SHPO for consensus determinations of eligibility; determinations of no effect, no adverse effect, and adverse effect

HABs/HAER Documentation Reports

Architectural Historical Inventory Reports

NEPA Documentation for Federal Actions

Memoranda of Agreement (MOAs) and Programmatic Agreements (PAs)

Nominations to National Register

ARPA Permits

Standing Operating Proceedures (SOPs) for ensuring compliance

ICRMP

Monitoring/Measuring Requiremens

Monitoring for compliance with laws and regulations, MOA's and ICRMP by Environmental Management Division Employees is conducted in an ad hoc fashion during routine inspections of the Installation grounds.

NEPA follow-up monitoring by Archeologist and other Environmental Management Division Employees conducted on a case-by-case basis to insure compliance with required mitigation stipulated in NEPA documents.

Calibration

Not Applicable.

What Significant Impacts Are

Significant impacts to historical structures potentially eligible and eligible for listing in the National Register of Historic Places (NRHP) are those impacts which compromise their eligibility for listing in the NRHP pursuant to criteria set forth in the National Historic Preservation Act (36 CFR 60.4). Most of the historical properties on Redstone Arsenal are eligible based on Criteria A, their relation to significant historical events or broad patterns in national history, or Criteria B, their relation to individuals significant to national history. Some are eligible based on Criterion C, their architectural merit. Any modification to these structures could potentially be construed as a significant impact. Neglect or failure to maintain eligible structures will be considered an adverse effect, as well as transfer out of Federal ownership or control.

Responsible Person(s)

• The Garrison Commander is involved in the following cultural resources activities (AR 200-1, para 6-4a(5), 6-4b(1), 6-4d(1), 6-4e(1), and 6-4e(2)) [Added October 2007].
1. initiates formal government-to-government consultation the heads of tribal governments,
2. functions as the agency official with responsibility for installation compliance with the National Historic Preservation Act (NHPA),
3. serves as the Federal agency official with responsibility for installation compliance with Native American Graves Protection and Repatriation Act (NAGPRA),
4. serves as the Federal land manager with responsibility for installation compliance with ARPA,
5. serves as the Federal agency official with management authority over archeological collections and associated records.

•The Directorate of Public Works (DPW) is responsible for supervising, controlling, and managing installation historic preservation program (i.e., historic buildings and districts).

•The Environmental Coordinator (EC) is responsible for managing the cultural resources program, including archaeological sites, Native American Graves Protection and Repatriation Act (NAGPRA), and curation of collections.

•The Provost Marshal is responsible for enforcing the Archeological Resources Protection Act (ARPA) requirements to protect cultural resources and archeological artifacts. This responsibility may be assumed by Game Wardens at certain installations.

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•The Installation Cultural Resources Manager (CRM) is responsible for implementing the historic preservation program, training installation personnel, and locating, inventorying, and evaluating installation cultural resources. The CRM negotiates Memoranda of Agreement (MOAs) and Programmatic Agreements (Pas) with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), which contain detailed descriptions of specific preservation actions, and ensures that all provisions of the agreement are met [Revised April 1999].

The Alabama State Historic Preservation Office (ALSHPO) acts as independent oversight as stipulated in the National Historc Preservation Act. All MOA's, PA's, SOP's, and any other documents or actions related to potential impacts to significant historical properties must be reviewed by ALSHPO. While ALSHPO cannot require anything of RSA, it is Federal policy that their concurrance must be sought. If there is a difference in opinion between ALSHPO and RSA, the Federal Advisory Commission on Historic Preservation acts as a mediator to resolve the conflict.

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692

LABOR:

Cultural Resources Manager	.50 -	manyear -	933 hours -	$28,140
Chief	.05 -	manyear -	94 hours -	$ 2,836

GS LABOR	HOURS	1573	$ 56,668

CONTRACT LABOR:

Environmental Database Support	-	20 hours -	$1,126
GIS support	-	80 hours -	$4,502

CONTRACT LABOR	HOURS	100	$ 5,628

Contracts Required:

Eligibility Determination on Buildings 50 Years Ol (Section 106 of the NHPA)	$100,000
Total Required Contracts:	$100,000

Appoint a government employee as the installation Cultural Resources Manager (CRM).

Sustainability

Consequences

Noncompliance can result in project delays which may impede the mission of the Installation.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Measurable targets need to be noted for status.
We need to note any awareness articles in the Rocket about Historical Properties.
How did we do on 2010 goals?

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Set 2012 goals.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
14	**Archeological Resources**	Ben Hoksbergen

Discussion

Land Management is a service that comes from the US Army Garrison. Archeological Resources are an aspect of that service. There are over 900 archeological sites that have been identified on Redstone Arsenal (RSA). Roughly half of those sites are considered significant. Legally RSA has a commitment to protect all of these significant sites. The following explains the logic behind this:

1)The law requires Federal agencies to preserve significant archaeological resources. The definition of significance is based on four criteria set forth in the National Historic Preservation Act (36 CFR 60.4):

Criterion A - association with significant historical events or broad patterns in American history

Criterion B - association with individuals important to American history

Criterion C - representative of the work of a master, artistic merit, or representative of a particular style or time period

Criterion D - data important to the understanding of history or prehistory

Most archaeological sites meet eligibility requirements for the National Register of Historical Properties, our nationiwde list of significant historic properties through Criterion D. Each intact site contains unique historic (or prehistoric) information, which would be lost if the site is adversely impacted without recovering the informaiton.

2)Many ancient artifacts are intricate works of art and warrant preservation based on their aesthetic merit. Certainly, museum-quality artifacts enhance a public exhibit and are great visual aids in presenting a picture of ancient society, but archaeologists are much more concerned with an artifact’s context and what it can tell us about past human culture. In many ways, context is more fragile than the artifacts themselves. An ancient spearhead might survive being rolled up by an earth-mover and packed into a layer of fill, but if we do not know where it came from, how it was oriented, and how it was associated with other artifacts on a site, it doesn’t provide much significant information.

3)Archaeological sites often contain human remains which could be impacted if the site is not protected. There have been two sites on Redstone Arsenal where prehistoric burials have been excavated, and there are another seven where prehistoric human remains have been observed but not disturbed. This is just the tip of the iceberg. Humans have lived and died here for around 12,000 years, and all of those bodies ended up somewhere. Not only is it illegal to disturb human remains on federal land without a detailed legal protocol, it is disrespectful, whether those remains are 10 years old or 10,000 years old.

4)Archaeological sites are our only key to reconstructing prehistoric culture. Anatomically modern human beings have been around for about 200,000 years. They first invented writing about 6000 years ago in what is now Iraq. For the time after the introduction of writing, we can learn about the past from written records, but for the other 97% of the time humans have been around, we must rely on the study of the artifacts and ruins that they left behind, in other words, archaeology. This paints a pretty rough-grained picture, of course. The ravages of time have destroyed many of the clues to the past, so it’s important to preserve and study what we have left to gain as complete a picture as possible.

5)Archaeology can complement the historical record to provide a better understanding of history. History is written by individuals with their own inherent biases, perspectives, and agendas. Just like testimony in court always needs material evidence to back it up, archaeology can be used to confirm or contradict or otherwise enhance the historical record. Since it is usually the people in power that control what is recorded as history, only certain perspectives make it into the books, and many of the less powerful elements in society fall between the cracks. For example, we know a lot about Southern plantation society in the years prior to the Civil War, but we really don’t know much about the day to day lives of Southern slaves, or of poor sharecroppers after the Civil War. The broad trends are recorded, but the details of their daily lives only survive in any great detail in the rubbish and ruins that they left behind.

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6)Archaeology contributes to the bank of human knowledge. Most science starts out as knowledge for the sake of knowledge. Sometimes, the practical applications of that knowledge are not discovered until centuries later. Many of the greatest discoveries start out as an observation of phenomenon followed some time later by a creative practical application of it. There is nothing wrong with accumulating knowledge for the sake of knowledge. Eventually, and often in unexpected ways, it pays off.

7)There are already some practical applications for knowledge gained through archaeology that have had important implications for the fields of geology, ecology, and even medicine.

8)Archaeological sites are a quickly disappearing non-renewable resource. Once an archaeological site is destroyed, that information is gone forever, and every site is a piece in the great puzzle to reconstruct, interpret, and learn from the past. Most archaeological sites on private land are not protected, and private development is destroying sites at an alarming rate. Redstone Arsenal and other federally-owned land are islands of preserved archaeological resources often surrounded by rapid development. As such, they are stewards of America's cultural heritage, and that responsibility should not be taken lightly.

Archeological Resources are a siginificant aspect and will be managed under the environmental management system.

Impacts or possible impacts

Violation of law potentially resulting in fines and/or adverse publicity for Redstone and Army.

Loss of non-renewable archaeological data.

Potential impacts to project or mission schedule due to initiation of National Historic Preservation consultation and potential for mitigative data recovery before action can resume.

Goals

Maintain compliance with cultural resources laws, statutes, and regulations

Measurable Targets

Develop a checklist of cultural resources laws, statutes, and regulations and complete a self-assessment for compliance by 30 June 2009. (Completed 24 July 2009)

Provide review of all proposed projects that involve ground disturbance for possible impacts to archaeological resources and if there is a potential for significant impacts, recommend avoidance or innitiate the Section 106 process.

Enter shape files into the GIS database for all archaeological sites within 60 days of delineation.

Conduct phase I survey on last 350 acres which are not surveyed within the FY that the project is approved for funding (Section 106).

Develop MOA with Native American tribes and ALSHPO for the data recovery at site 1Ma1167 and the treatment of prehistoric human remains that may be recovered by 30 August 2009 (Section 106 and NAGPRA). (Completed)

Develop a data recovery plan for the mitigation of site 1MA1167 by 1 June 2009 (Section 106). (Completed 1 Dec. 2009)

Review ICRMP annually by 1 June and update as needed annually to remain current by 30 September (AR 200-1).

Develop FY 2011 annual work plan for manageing and protecting archaeological resources by 1 April 2009. (Completed 7 Jan. 2010)

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Indentify funding requirements for archaeological management and projcts for FY 2011 by April 30, 2010. (Completed 9 Mar. 2010)

Continue to develop Geographic Information System (GIS) layer for cultural resource data and update it within 30 days of new data availability.

Develop a Comprehensive Agreement (CA) with Native American tribes and ALSHPO, per the Native American Graves Protection and Repatriation Act (NAGPRA) for the treatment of prehistoric human remains by December 30, 2009. (Final Draft Completed 12 Feb. 2010)

Develop a Programmatic Agreement (PA) with ALSHPO and the ACHP on the management of historic sites on Redstone Arsenal by 31 Dec. 2010.

Develop a Memorandum of Understanding (MOU) with NASA, TVA, and FWS for the management of archaeological resources on Redstone Arsenal by 31 Dec. 2011.

Letters of Instructions

Legal Requirements

Antiquities Act of 1906
Wthin this act, 16 U.S. Code (USC) 431-433, the President of the United States is authorized to declare historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest, that are situated upon the lands owned or controlled by the Federal Government, to be national monuments (16 USC 431). Permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions, may be granted by the Secretaries of the Interior (SOI), Agriculture, and Army to institutions they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe (16 USC 432).

Historic Sites Act of 1935.
This act, Public Law (PL) 74-292 (16 USC 470-470w-6), authorizes the designation of national historic sites and landmarks, authorizes interagency efforts to preserve historic resources, and establishes a maximum fine of $500 for violations of the act.

P.L. 86-523, Archeological and Historic Preservation Act (AHPA), June 27, 1960
Thhis act, PL 93-291 (amends PL 86-523); (16 USC 469-469c), directs Federal agencies to notify the SOI when they find that any Federal construction project or Federally licensed activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. It also provides criteria for funding historical and archaeological protection for such projects.

P.L. 89-665, National Historic Preservation Act of 1966 (NHPA), October 15, 1966
This act, 16 USC 470-470w-6, last amended in August 1992, addresses the issue of preserving our national history. The Congress declares that the historical and cultural foundations of the nation should be preserved as a living part of our community life and development; and that the preservation of this irreplaceable heritage is in the public interest so its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans (16 USC 470(b)(2)(4)). The policy of the Federal Government is to:
1.use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations
2.provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations
3.administer Federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations
4.contribute to the preservation of non-Federally owned prehistoric and historic resources

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and give maximum encouragement to organizations and individuals undertaking preservation by private means
5.encourage the public and private preservation and utilization of all usable elements of the nation's historic built environment
6.assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities (16 USC 470-1).

National Environmental Policy Act of 1969
The purpose of this act, 42 USC 4321-4370c, as last amended in November 1990, was to declare a national policy to encourage productive and enjoyable harmony between man and his environment. Additionally, it provides for the promotion of efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man (42 USC 4321).

Executive Order 11593 - Protection and Enhancement of the Cultural Environment – 1971

American Indian Religious Freedom Act of 1978
This act, PL 95-341 (42 USC 1996), states the policy of the United States to protect and preserve for American Indians their inherent rights of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and native Hawaiians. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and traditional rites. The act was amended in 1994 [Revised July 2003].

Archeological Resources Protection Act of 1979
This act, 16 USC 470aa-470mm, was last amended in October 1988. The purpose of this act is to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before 1 October 1979 (16 USC 470aa(b)).

Native American Graves Protection and Repatriation Act of 1990
This act, 25 USC 3001-3013, permits the intentional removal from or excavation of Native American cultural items from Federal or tribal lands for purposes of discovery, study, or removal of such items only if:
1.such items are excavated or removed pursuant to a permit issued which must be consistent with this act
2.such items are excavated or removed after consultation with or, in the case of tribal lands, consent of the appropriate (if any) Indian tribe or Native Hawaiian organization
3.the ownership and right of control of the disposition of such items must be as provided in subsections (a) and (b) of this section
4.proof of consultation or consent is shown (25 USC 3002©).
Each Federal agency and museum which has possession or control over holdings or collections of Native American human remains and associated funerary objects must compile an inventory of such items and, to the extent possible based on information processed by such museum or Federal agency, identify the geographical and cultural affiliation of such item (25 USC 3003(a)). Each Federal agency or museum that has possession or control over holdings or objects of Native American unassociated funerary objects, sacred objects, or objects of cultural patrimony must provide a written summary of such objects based on available information held by such agency or museum. The summary must describe the scope of the collection, kinds of objects included, reference to geographical location, means and period of acquisition and cultural affiliation, where readily ascertainable.

36 CFR § 79: Curation of Federally-Owned and Administered Archeological Collections

White House Memorandum Dated 29 April 1994 – Government-to-Government Relations with National American Tribal Governments

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Executive Order 13007-Indian Sacred Sites
This EO, dated 24 May 1996, addresses the accommodation of sacred sites. Each executive branch agency with statutory or administrative responsibility for the management of Federal lands is required, to the extent practicable, permitted by law, and not clearly inconsistent with agency functions, accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners. They shall also avoid adversely affecting the physical integrity of the sacred sites. Where appropriate, agencies will maintain the confidentiality of sacred sites.

Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments – 2000

Executive Order 13287 - Preserve America - 2003
This EO, dated 3 March 2003, states that it is the policy of the Federal Government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The EO directs Federal agencies to [Added April 2003]:
seek partnerships with State and local governments, Indian tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties.
agencies with real property management responsibilities shall prepare an assessment of the current status of its inventory of historic properties required by section 110(a)(2) of the NHPA (16 U.S.C. 470h-2(a)(2)), the general condition and management needs of such properties, and the steps underway or planned to meet those management needs
report on its progress in identifying, protecting, and using historic properties in its ownership and make the report available to the Council and the Secretary.

Executive Order 13327, Federal Real Property Asset Management.
This EO, dated 4 February 2004, establishes the Federal Real Property Council (Council) to develop guidance for, and facilitate the success of, each agency's asset management plan. The Council is to be composed exclusively of all agency Senior Real Property Officers, the Controller of the Office of Management and Budget, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. The Senior Real Property Officer is designated by the head a department of agency. The Senior Real Property Officer is required to develop and implement an agency asset management planning process that meets the form, content, and other requirements established by the Federal Real Property Council. In relation to cultural resources, the Senior Property Officer shall incorporate planning and management requirements for historic property under Executive Order 13287 of 3 March 2003, and for environmental management under Executive Order 13148 of 21 April 2000. Under EO 13327, para 2(a) "federal real property" is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of this order, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety [Added April 2004].

Alabama Code 11-47-60, 61, 62, and 64; Act 389
This 1957 act (last ammended 1965 in Act 155) allows for the abandonment of a cemetery and the removal of Human remains.

Alabama Code 13-6-80, 83, 84, and 85
This 1852 act (last codified in 1940) provides for penalties for any person who removes a

body from its place of interment or maliciously defaces, destroys, or removes any tomb, monument, or grave site.

Alabama Code 13A-7-23
This 1977 act provides penalties for the desecration of cemeteries or human remains. It stipulates that permits for removal of human remains must be obtained from the Alabama Historical Commission.

Alabama Code 18-3-20
This 1927 act provides for right of way to a cemetery which has been in use for 20 years or more to any person having relations buried there.

Alabama Code 41-9-242
This 1966 act (last ammended in 1971 with Act 500) establishes and sets the purposes for the Alabama Historical Commission to protect the State of Alabama's historic and prehistoric resources.

Alabama Code 41-3-1
This 1915 act (ammended in 1993) reserves to the state or its designated agents the exclusive right to explore, excavate, or survey aboriginal mounds, burial sites, or other sites of antiquity. It stipulates that objects recovered in such actions must not be removed across state lines.

Alabama Code 93-905
This 1993 act provides for the protection of cemeteries and human remains and further provides penalties for malicious or willful desecration of such sites. Anyone who knows of the discovery of human remains shall cease all land-disturbing activities at that location and must contact the Alabama Historical Commission immediately. Willful or malicious disturbance of an American Indian burial or human remains on propoerty not owned by the perpetrator is a Class C Felony.

Alabama Act 2007-408
This 2007 act requires owners of cemeteries to permit access to ancestors and relatives and individuals with legitimate research interests. Local governments may establish a Cemetery Rehabilitation Authority to designate, register, and maintain cemeteries within their jurisdiction.

Training Requirements

Archaeologist must meet Secretary of Interior Professional Qualification Standards for Archeology, History, Architectural History, or Historic Preservation.

Personnel assigned duties in cultural resources, including the Cultural Resources Manager are required to have the appropriate knowledge, skills, professional training, and education to carry out their responsibilities. (DoDI 4715.3, para 4.1.10 and AR 200-4, para 1-9b)[Revised December 1997, Revised July 2003, Revised April 2004].

Awareness

EMD Web Page
The Cultural Resources on Redstone page begins at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/CulturalRes/CulturalRes.html
The Cultural Resources on Redstone page was reviewed by Terry Hazle on 11/14/2011 and determined to be adaquate for Environmental Awareness.

Newspaper:
Title: Martin Road Site Slices into Redstone Past
Date: 14 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\033.pdf

Title: Arsenal Archaeolgoist Really Digs His Job
Date: 3 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\009.pdf

Title: Remembering Pond Beat and Mullins Flat
Date: Summer 2010
Location: T:\DATA\Correspondence\EMS Training Documents\047.pdf

Title: Path to Nature Leads Historic Journey
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\067.pdf

Title: DoD 2011 NPLD Project - Upgrades to Wetland & Cultural Center, RSA
Date: 3 November 2011
Location: T:\DATA\Correspondence\EMS Training Documents\071.pdf

Title: Researchers Dig Prehistoric Finds at Redstone
Date: 9 November 2011
Location: T:\DATA\Correspondence\EMS Training Documents\081.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

SOP #1 - #10, Integrated Cultural Resources Management Plan, August 2006 - pages 5-16 through 5-49. These are published in the Intregrated Cultural Resources Management Plan on file in the Cultural and Natural Resources Branch.

National Register Criteria of Evaluation (36 CFR 60.4).

How to Apply the National Register Criteria for Evaluation (National Register Bulletin 15, 1991).

Guidelines for Local Surveys: A Basis for Preservation Planning (National Register Bulletin 24, revised 1985).

Alabama Historical Commission Policy for Archaeological Survey and Testing in Alabama (AHC, 1966).

Required Permits

Archaeological Resources Protection Act (ARPA) permits required for all work not initiated by the Garrison. ARPA provides a legal framework for issuing permits for archeological investigation on Federal land.

As of April 2010 there are no active ARPA permits on Redstone.

Required Plans

Integrated Cultural Resources Management Plan (ICRMP), published 2006 is in effect. Next required update is by September of 2011.

Cultural Resources Manager is responsible for the ICRMP.

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Copies are maintained by the Cultural Resources Manager and Archaeologist.

Required Records

Archaeological survey reports kept are submitted to ALSHPO for concurrance with initial recommendations regarding site eligibility. Copies of the final reports and reviewed drafts are maintained by the Cultural Resource Manager and Archaeologist.

Phase II reports are submitted to ALSHPO for concurrance with recommendations regarding site eligibility. Copies of the final reports and reviewed drafts are maintained by the Cultural Resource Manager and Archaeologist.

Alabama State Site Files are records containing critical information on each recorded site and are submitted to the Alabama State Site Files in Moundville by any individual who finds and records an archaeological site. Copies of these records are maintained by the Archaeologist.

Artifact inventories are submitted by anyone who conducts an archaeological investigation on the Installation. These are included in all archaeological reports that are submitted to ALSHPO and maintained by the Archaeologist. Copies of the inventories are submitted to the Erskine Ramsay Curation Facility in Moundville whenever artifacts are delivered there to be inventoried and curated.

GIS archaeological site shape files are produced from GPS data collected in the field by contractors or the Archaeologist. They are maintained as a limited access layer in the DPW GIS database.

Archaeological sites and diagnostic artifacts database was developed to maintain a digital record of archaeological sites and diagnostic artifacts in the Redstone Arsenal collection. The database is maintained by the Archaeologist.

NEPA documentation for federal actions is tracked in the NEPA database and maintained as paper documents by the Cultural and Natural Resources Branch of the Environmental Management Division. Comments and contributions regarding archaeological resources are the responsibility of the Archaeologist.

Monitoring/Measuring Requiremens

Archaeological Resources Protection Act (ARPA) monitoring by Staff Archeologist and other Environmental Management Division Employees is conducted in order to prevent illicit artifact collecting on the Installation.

Monitoring for compliance with laws and regulations by Staff Archeologist and other Environmental Management Division Employees is conducted in an ad hoc fashion during routine inspections of the Installation grounds.

NEPA follow-up monitoring by Staff Archeologist and other Environmental Management Division Employees is conducted on a case-by-case basis to insure compliance with required protocol stipulated in NEPA documents.

Calibration

While calibration is not required, accuracy of certain electronic tools including the ground penetrating radar unit, global positioning units, contractors' transits and total stations, etc. must be monitored and maintained to insure accurate reporting.

What Significant Impacts Are

All of the archaeological sites on Redstone Arsenal which are potentially NRHP eligible (411 SITES) or eligible (34 SITES) could potentially provide important data relevant to specific periods in prehistory or history (Criterion D), but if any of the four criteria for significance as defined by the NHPA are met, the site must be protected. Any disturbance of intact archaeological deposits or removal of artifacts from such sites could be considered a significant impact.

Responsible Person(s)

• The Garrison Commander is involved in the following cultural resources activities (AR 200-1, para 6-4a(5), 6-4b(1), 6-4d(1), 6-4e(1), and 6-4e(2)) [Added October 2007].

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1. initiates formal government-to-government consultation the heads of tribal governments,
2. functions as the agency official with responsibility for installation compliance with the National Historic Preservation Act (NHPA),
3. serves as the Federal agency official with responsibility for installation compliance with Native American Graves Protection and Repatriation Act (NAGPRA),
4. serves as the Federal land manager with responsibility for installation compliance with ARPA,
5. serves as the Federal agency official with management authority over archeological collections and associated records.

The Directorate of Public Works (DPW) is responsible for supervising, controlling, and managing installation historic preservation (i.e., historic buildings and districts).

Individual tennants are responsible for timely submittal of detailed work plans for review by the Environmental Management Division to evaluate potential impacts to archaeological resources.

The Environmental Management Division Chief is responsible for managing the cultural resources program, including archaeological sites, Native American Graves Protection and Repatriation Act (NAGPRA), and curation of collections.

The Director of Emergency Servicies is responsible for enforcing the Archeological Resources Protection Act (ARPA) requirements to protect cultural resources and archeological artifacts. This responsibility may be carried out by the Conservation Officer on Redstone Arsenal.

The Installation Cultural Resources Manager (CRM) is responsible for implementing the historic preservation program, training installation personnel, and locating, inventorying, and evaluating installation cultural resources. The CRM negotiates Memoranda of Agreement (MOAs) and Programmatic Agreements (PAs) with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), which contain detailed descriptions of specific preservation actions, and ensures that all provisions of the agreement are met .

The Archaeologist on staff is responsible for providing subject matter expertise, reviewing archaeological reports, maintaining GIS and Access databases of archaeological data, providing oversight on contracted archaeological investigations, conducting small archaeological investigations as needed, providing NEPA review of potential impacts to archaeological resources, providing technical assistance in NAGPRA compliance, preparing Scopes of Work for contracted archaeological projects, conducting ARPA monitoring of at-risk archaeological sites, and implementing public outreach and education programs for the local community.

The Alabama State Historic Preservation Office (ALSHPO) acts as independent oversight as stipulated in the National Historc Preservation Act. All Proposals and SOW's for archaeological work, archaeological reports, MOA's, PA's, SOP's, and any other documents or actions related to potential impacts to significant archaeological sites must be reviewed by ALSHPO. While ALSHPO cannot require anything of RSA, it is Federal policy that their concurrance must be sought. If there is a difference in opinion between ALSHPO and RSA, the Federal Advisory Commission on Historic Preservation acts as a mediator to resolve the conflict.

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692

Labor:

Archaeologist	1.00	manyear -	1866 Hours -	$ 56,279
Cultural Resources Manager	.25	manyear -	467 Hours -	$ 14,076
CNR Chief	.2	manyear -	374 Hours -	$ 11,280

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	GS Hours	3,253	$107,327
GIS Tech	.125 manyear -	234 Hours -	$ 13,168
Database Managers Support		40 Hours -	$ 2,251
	Contract Labor	274 hours	$ 15,419

Contracts: Required

Native American Consultation (NAGPRA/Section 106)	$ 36,465
Travel for Consultation (NAGPRA/Section 106)	$ 12,000
Phase II Investigations for ongoing Projects (Section 106 of NHPA)	$225,000
Curation of Cultural Resources (36 CFR 79)	$5,000
TOTAL REQUIRED CONTRACTS	$278,465

Contracts: Sustainability

Phase I surveys land removed from CERCLA Sites and Oversites	$185,000
TOTAL SUSTAINABILITY CONTRACTS	$185,000

Sustainability

Contracting Officers, COR's, and the overseeing Army archaeologist can encourage contractors to implement energy conservation measures in their field work.

Financial resources can be conserved by reaching out to public universities to coordinate archaeological field schools with the cultural resource management needs of the Installation.

Educating members of DPW and other relevant parties on cultural resource laws and regulations and the impetus behind them can reduce project delays and waste resulting from interupted or rerouted projects due to non-compliance.

Programmatic Agreement between RSA and ALSHPO is being written for mitigation of all but a select representative sample of late 19th-early 20th century sites. This will open up more land for potential development while using the most cost-effective method to fulfill Section 106 responsibilities.

Consequences

Noncompliance can result in project delays which may impede the mission of the Installation.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Update how we did on measureable targets.
Set 2012 goals.
What has been done to make people aware about archeological resources?
What are future awareness plans?
ICRMP plan needs updating – what is the plan?

I discussed required changes with Ben Hoksbergen on 09 March 2010. Ben is to email me when changes are made. This will close out my annual review of the Archeological Resources aspect for 2010.

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Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
15	**Effects to Wetlands**	Christine Easterwood

Discussion

Land Management is a service that happens on Redstone Arsenal and impacts to wetlands are an important elements of land management. Effects to wetlands are an environmental aspect that will be managed using the Redstone EMS. Approximately 26% of the Installation property are identified as wetlands and are regulated by US and state laws and regulations.

Long regarded as wastelands, wetlands are now recognized as important features in the landscape that provide numerous beneficial services for people and for fish and wildlife. Some of these services, or functions, include protecting and improving water quality, providing fish and wildlife habitats, storing floodwaters, and maintaining surface water flow during dry periods. These beneficial services, considered valuable to societies worldwide, are the result of the inherent and unique natural characteristics of wetlands.

Wetland functions include water quality improvement, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity. The value of a wetland is an estimate of the importance or worth of one or more of its functions to society. For example, a value can be determined by the revenue generated from the sale of fish that depend on the wetland, by the tourist dollars associated with the wetland, or by public support for protecting fish and wildlife. Although large-scale benefits of functions can be valued, determining the value of individual wetlands is difficult because they differ widely and do not all perform the same functions or perform functions equally well. Decision makers must understand that impacts on wetland functions can eliminate or diminish the values of wetlands.

Water storage: Wetlands function like natural tubs or sponges, storing water and slowly releasing it. This process slows the water’s momentum and erosive potential, reduces flood heights, and allows for ground water recharge, which contributes to base flow to surface water systems during dry periods. Although a small wetland might not store much water, a network of many small wetlands can store an enormous amount of water. The ability of wetlands to store floodwaters reduces the risk of costly property damage and loss of life—benefits that have economic value to us. For example, the U.S. Army Corps of Engineers found that protecting wetlands along the Charles River in Boston, Massachusetts, saved $17 million in potential flood damage.

Water filtration: After being slowed by a wetland, water moves around plants, allowing the suspended sediment to drop out and settle to the wetland floor. Nutrients from fertilizer application, manure, leaking septic tanks, and municipal sewage that are dissolved in the water are often absorbed by plant roots and microorganisms in the soil. Other pollutants stick to soil particles. In many cases, this filtration process removes much of the water’s nutrient and pollutant load by the time it leaves a wetland. Some types of wetlands are so good at this filtration function that environmental
managers construct similar artificial wetlands to treat storm water and wastewater.

Biological productivity: Wetlands are some of the most biologically productive natural ecosystems in the world, comparable to tropical rain forests and coral reefs in their productivity and the diversity of species they support. Abundant vegetation and shallow water provide diverse habitats for fish and wildlife. Aquatic plant life flourishes in the nutrient-rich environment, and energy converted by the plants is passed up the food chain to fish, waterfowl, and other wildlife and to us as well. This function supports valuable commercial fish and shellfish industries.

Impacts or possible impacts

- Permitting requirements
- Violation of laws
- Costly construction or restoration of wetlands for mitigation uses
- Permanently constrict use of mitigation lands for mission activities (mitigation areas must be managed as such, in perpetuity)
- Impacts to surface water quality

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Justification for Monitoring Wetland Mitigation Bank (No proposed funding for FY2015):

Wetland bank credits are an appropriate form of compensation for mitigation of unavoidable impacts to waters (wetlands) of the US resulting from activities authorized under Sections 404 and 401 of the Clean Water Act, Section 10 of the Rivers and Harbors Appropriation Act, and other Federal, state, or local wetland regulatory programs. In 2002, a wetland site for Advanced Mitigation Credits was established at Redstone Arsenal to provide compensation for unavoidable impacts to wetlands as a result of the East Martin Road widening. The mitigation site was designed to be larger than what was needed for that specific project in anticipation of future growth and development, proposed by the US Army Garrison-Redstone, on the Installation.

The initial five-year monitoring report (2007) revealed that the Advanced Credit Wetland Mitigation Site did not meet the established performance standards. Remedial actions were undertaken at that time with renewed effort to ensure the success of this critical area for use by the USAG-Redstone in support of the Army mission.

Annual field observations were continued during the growing seasons until FY 2011, to assess the establishment of hydrophytic vegetation, hydrology and hydric soil conditions. A Final Monitoring Report of the Advanced Mitigation Credit Site (to include boundary delineation) was funded in FY2011 to provide
provide direction for management and, possibly, remedial actions in this wetland restoration effort. The monitoring report was completed and provided to USAG-Redstone EMD in January 2014. The provision of this report to the US Army Corps of Engineers for review and site direction is pending a site visit and planning meeting with the Decatur field office of the Nashville Regulatory District of the USACE. This visit and planning meeting is tentatively planned for the 1st quarter of FY2015, depending on USACE scheduling availability.

If success criteria are not met, the affected areas would be withdrawn from the pool of credits available for use by RSA and the regulatory agencies involved will adjust the available credits. Lack of future funding to support the adaptive management for sustainable use of this Advanced Credit Wetland Mitigation Site will hinder future USAG-Redstone development, growth, and mission function if activities impact waters (wetlands) of the US. Future funding requests will be submitted based on the outcome of the final monitoring report review and approval/disapproval from the USACE.

GIS Support Justification (FY 2015 Proposed Funding for Data Collection and Management for Natural Resources Program (to include GIS support for wetlands = $40,731):

A National Wetlands Inventory of Redstone Arsenal was performed by the USFWS in 2002. NWI data has since been incorporated into Redstone Arsenal’s Geographic Information System (GIS) and the digital data is used during project planning in order to minimize possible wetland damage or destruction. GIS allows EMD personnel to better manage natural resources without compromising the Army mission. Wetland delineation and subsequent mapping for jurisdictional purposes is planned on a case by case basis, in the event that wetlands will be impacted by proposed actions. GIS support for delineation and wetland management activities is essential to coordinate with Federal and state regulatory agencies and remain in compliance with Federal, state, and local laws and regulations.

Goals

Compliance with all federal, state and local environmental laws, regulations, executive orders and policies.

Measurable Targets

All targets should be measureable though CLS 64D (Other NR Legal Requirement Implementation, Management, Oversight, & Monitoring (Other than ESA)):

2014-2015

1. Establish annual work plan for INRMP --> work plans completed and integrated into INRMP on annual basis, NLT 4th Quarter of FY14 (Sikes Act Improvement Act). Plan to do so NLT 4th Q of FY15, also.
Target Met? Yes

2. Review all Installation actions for possible impacts to wetlands in order to comply with federal mandate of no net loss of wetlands --> performed on as needed basis throughout FY15

(NEPA, Clean Water Act, Rivers and Harbors Act, Tennessee Valley Authority Act, etc)
* review of Installation actions for wetland impacts includes encroachment possibilities due to Installation actions, potential for point source and non-point source discharges as a result of actions, ensure efficient water reuse through project actions, ensure stewardship of wetlands as key natural resources at RSA.
Target Met? Yes. On-going. (11/24/2014)

3. Apply for and obtain CWA Section 404 and Section 401 permit(s) for any actions which may affect Installation wetlands --> performed on as needed basis throughout FY15
* Adhere to mitigation requirements set forth by these permits. Mitigation wetlands are wetlands that replace the functions performed by drained, filled, or degraded wetlands on Installation project sites. Site these projects within the same watershed as the impacted Installation wetlands --> perform on as needed basis throughout FY15
* Develop/initiate & implement projects that enhance, utilize & conserve wetland resources at RSA --> performed on as needed basis throughout FY15
Target Met? Yes. On-going. (11/24/2014)

4. Perform mitigation compliance inspection on projects requiring 404/401 permit --> performed on as needed basis (Clean Water Act) throughout FY15
Target Met? Yes. On-going. (11/24/2014)

5. Monitor/manage wetland mitigation areas throuhout FY15
Target Met? Yes. On-going. (11/24/2014)

6. Maintain up-to-date GIS layer for wetlands and mitigation areas - maintenance completed and possible changes integrated into GIS on annual basis, NLT 4th Quarter of FY15
Target Met? Yes, changes done on as needed basis (On-going (11/24/2014))

7. Collaborate with USACE on field verification of jurisdictional wetlands --> performed on as needed basis throughout FY15 (CWA)
Target Met? Yes. On-going. (11/24/2014)

8. GIS field work --> perform on as needed basis throughout FY15
Target Met? Yes. On-going. (11/24/2014)

2011:

1. Establish annual work plan for INRMP --> work plans completed and integrated into INRMP on annual basis, NLT 4th Quarter of FY11 (Sikes Act Improvement Act)
Target Met? Yes

2. Review all Installation actions for possible impacts to wetlands in order to comply with federal mandate of no net loss of wetlands --> performed on as needed basis throughout FY11 (NEPA, CWA)
* review of Installation actions for wetland impacts includes encroachment possibilities due to Installation actions, potential for point source and non-point source discharges as a result of actions, ensure efficient water reuse through project actions, ensure stewardship of wetlands as key natural resources at RSA.
Target Met? 88% reviews within 14 days (as of 9/16/11)

3. Apply for and obtain CWA Section 404 and Section 401 permit(s) for any actions which may affect Installation wetlands --> performed on as needed basis throughout FY11 (CWA)
* Adhere to mitigation requirements set forth by these permits. Mitigation wetlands are wetlands that replace the functions performed by drained, filled, or degraded wetlands on Installation project sites. Site these projects within the same watershed as the impacted Installation wetlands --> performed on as needed basis throughout FY10
* Develop/initiate & implement projects that enhance, utilize & conserve wetland resources at RSA --> performed on as needed basis throughout FY11
Target Met? (as of 9/16/11)

4. Perform mitigation compliance inspection on projects requiring 404/401 permit --> performed on as needed basis (Clean Water Act) throughout FY11
Target Met? 2 permits applied for, USACE has not yet processed (not processed first b/c customer has not paid ADEM water quality cert fee & Corps will not release permit until this is done; second permit not processed as of 9/16/11 - submitted to corps end of August 2011 - typically takes 30-45 days to return)

5. Monitor/manage wetland mitigation areas throuhout FY11
Target Met? No. Time has not allowed for this work due to priority set on managing NEPA program.

6. Maintain up-to-date GIS layer for wetlands and mitigation areas - maintenance completed and possible changes integrated into GIS on annual basis, NLT 4th Quarter of FY11
Target Met? Yes, changes done on as needed basis

7. Collaborate with USACE on field verification of jurisdictional wetlands --> performed on as needed basis throughout FY11 (CWA)
Target Met? Yes. Collaborated with Corps on jurisdictional determination of Martin Road wetland in support of road widening project.

8. GIS field work - GPS the boundaries of the Garrison Wetland Mitigation Bank NLT 3Q FY11
Target Met? No. Time has not allowed for this work due to priority set on managing NEPA program.

2010:

1. Establish annual work plan for INRMP --> work plans completed and integrated into INRMP on annual basis, NLT 4th Quarter of FY10 (Sikes Act Improvement Act)
Target Met? Yes

2. Review all Installation actions for possible impacts to wetlands in order to comply with federal mandate of no net loss of wetlands --> performed on as needed basis throughout FY10 (NEPA, CWA)
* review of Installation actions for wetland impacts includes encroachment possibilities due to Installation actions, potential for point source and non-point source discharges as a result of actions, ensure efficient water reuse through project actions, ensure stewardship of wetlands as key natural resources at RSA.
Target Met? 86% within 14 days

3. Apply for and obtain CWA Section 404 and Section 401 permit(s) for any actions which may affect Installation wetlands --> performed on as needed basis throughout FY10 (CWA)
* Adhere to mitigation requirements set forth by these permits. Mitigation wetlands are wetlands that replace the functions performed by drained, filled, or degraded wetlands on Installation project sites. Site these projects within the same watershed as the impacted Installation wetlands --> performed on as needed basis throughout FY10
* Develop/initiate & implement projects that enhance, utilize & conserve wetland resources at RSA --> performed on as needed basis throughout FY10
Target Met? 50% - 1 permit applied for, USACE has not yet processed

4. Perform mitigation compliance inspection on projects requiring 404/401 permit --> performed on as needed basis (Clean Water Act) throughout FY10
Target Met? Yes - 1 permit activity at Easter Posey dock, Renee Gallimore conducted inspection

5. Monitor/manage wetland mitigation areas throuhout FY10
Target Met? No

6. Maintain up-to-date GIS layer for wetlands and mitigation areas - maintenance completed and possible changes integrated into GIS on annual basis, NLT 4th Quarter of FY10
Target Met? Yes

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7. Collaborate with USACE on field verification of jurisdictional wetlands --> performed on as needed basis throughout FY10 (CWA)
Target Met? Yes - 1 need/1 collaboration (100%)

2009:

1. Establish annual work plan for INRMP --> work plans completed and integrated into INRMP on annual basis, NLT 4th Quarter of the FY (Sikes Act Improvement Act)
Target Met? Yes

2. Review all Installation actions for possible impacts to wetlands in order to comply with federal mandate of no net loss of wetlands --> performed on as needed basis throughout FY09 (National Environmental Policy Act, Clean Water Act)
* review of Installation actions for wetland impacts includes encroachment possibilities due to Installation actions, potential for point source and non-point source discharges as a result of actions, ensure efficient water reuse through project actions, ensure stewardship of wetlands as key natural resources at RSA.
Target met? 96% of projects submitted for EMD review during FY09 were reviewed for effects to wetlands.

3. Collaborate with USACE on field verification of jurisdictional wetlands --> performed on as needed basis throughout FY09 (Clean Water Act)
Target met? 100% (3 site consultation/verifications requested and performed)

4. Apply for and obtain CWA Section 404 and Section 401 permit(s) for any actions which may affect Installation wetlands --> performed on as needed basis throughout FY09 (Clean Water Act)
* Adhere to mitigation requirements set forth by these permits. Mitigation wetlands are wetlands that replace the functions performed by drained, filled, or degraded wetlands on Installation project sites. Site these projects within the same watershed as the impacted Installation wetlands --> performed on as needed basis throughout FY09
* Develop/initiate & implement projects that enhance, utilize & conserve wetland resources at RSA --> performed on as needed basis throughout FY09
Target met? 100% (3 permits applied for and obtained)

5. Perform mitigation compliance inspection on projects requiring 404/401 permit --> performed on as needed basis (Clean Water Act) throughout FY09
Target met? 100% (2 projects required mitigation compliance inspection, both completed)

6. Establish GIS layer for mitigation areas - target completion NLT 4th Quarter, FY2009
Target met? No.

7. Maintain up-to-date GIS layer for wetlands and mitigation areas - maintenance completed and possible changes integrated into GIS on annual basis, NLT 4th Quarter of FY09
Target met? Yes

8. Remove woody and overgrown vegetation from flood control structure at tupelo mitigation bank - target completion NLT 3rd Quarter, FY2009
Target met? No.

9. Create checklist for laws & regulations pertaining to wetlands - target completion NLT 4th Quarter, FY2009
Target met? Yes.

Letters of Instructions

Legal Requirements

Clean Water Act, Section 404:
The primary federal statute regulating the discharge of dredged or fill material into waters of the United States. Section 404 applies to the disposal of dredged or fill material into lakes, rivers and wetlands. It also applies to any return water from the

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upland disposal of dredged material, such as the effluent from an confined disposal facility, or CDF. Section 404 does not apply to the placement of dredged material at upland sites, unless that site is a fill created in waters of the U.S.

Clean Water Act, Section 401 Certification and Wetlands:
Under Section 401, States and Tribes can review and approve, condition, or deny all Federal permits or licenses that might result in a discharge to State or Tribal waters, including wetlands. The major Federal licenses and permits subject to Section 401 are Section 402 and 404 permits (in nondelegated States), Federal Energy Regulatory Commission (FERC) hydropower licenses, and Rivers and Harbors Act Section 9 and 10 permits. States and Tribes may choose to waive their Section 401 certification authority. States and Tribes make their decisions to deny, certify, or condition permits or licenses primarily by ensuring the activity will comply with State water quality standards. In addition, States and Tribes look at whether the activity will violate effluent limitations, new source performance standards, toxic pollutants, and other water resource requirements of State/Tribal law or regulation.

32 CFR 651:
Brings the Army into compliance with the National Environmental Policy Act (NEPA). This Federal Law requires various levels of environmental impact studies for different uses of the land.

AR 200-1:
Establishes the Army’s Environmental Protection and Enhancement Program. It defines responsibility for environmental concerns within the chain of command, and requires units to have trained environmental compliance officers.

65 FR 62565-62572, 18 October 2000: Implement the Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management.

40 CFR Parts 22, 230 through 233 (Includes Compensatory Mitigation Rule issued by EPA & USACE in 2008):
On March 31, 2008, EPA and the U.S. Army Corps of Engineers (the Corps) issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area, expand public participation in compensatory mitigation decision making, and increase the efficiency and predictability of the mitigation project review process. More specifically, Part 22 relates to Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits. Part 230 relates to Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Part 231 relates to Section 404© Procedures. Part 232 relates to 404 Program Definitions; Exempt Activities Not Requiring 404 Permits. Part 233 relates to 404 State Program Regulations.

Rivers and Harbors Appropriation Act, Section 10:
The building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Chief of Engineers. Service concerns include contaminated sediments associated with dredge or fill projects in navigable waters.

Executive Order 11990:
The basic requirement is that a Federal agency avoid construction or management practices that would adversely affect wetlands unless that agency finds that (1) there is no practicable alternative, and (2) the proposed action includes all practicable measures to minimize harm to the wetlands. Executive Order 11990 directs all Federal agencies to minimize the destruction, loss, or degradation of wetlands; and preserve and enhance the natural beneficial values of wetlands in the conduct of the agency's responsibilities for:
(1) acquiring, managing, and disposing of Federal lands and facilities;
(2) providing Federally undertaken, financed, or assisted construction and improvements;

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and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Sikes Act:
Authorizes the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. The Act makes the Secretary of each military department responsible for [Revised March 1998]:
1.determining whether an Integrated Natural Resources Management Plan (INRMP) is appropriate for each installation
2.preparing the INRMP in cooperation with the Secretary of the Interior, acting through the Director of the US FWS, and the head of each appropriate state fish and wildlife agency
3.preparing and implementing the INRMP to reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources
4.ensuring, to the extent feasible, that sufficient number of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to carry out all of Title 16 - Conservation, including the preparation and implementation of INRMPs (16 USC 670e-2).

Tennessee Valley Authority Act, Section 26a:
Requires that TVA approval be obtained before any construction activities can be carried out that affect navigation, flood control, or public lands along the shoreline of the TVA reservoirs or in the Tennessee River or its tributaries. Designed to ensure that construction along the shoreline and in waters of the Tennessee River system does not have a negative effect on the agency's management of the river system or its ability to carry out what the TVA Act describes as the "unified development and regulation of the Tennessee River."

Training Requirements

There are no legal requirements for training to manage effects to wetlands, however, delineation of jurisdictional wetlands requires training.

Awareness

FY 15 Awareness Activities for Redstone Wetlands:

Continue to promote awareness through work order review program and coordination with project planning in the Garrison and with Team Redstone tenants.

Promote awareness through annual educational outreach programs (Earth Day, Bring Your Child to Work Day, Madison County Drinking Water Festival, RTC Safety Day) and article publication in the Redstone Rocket, should educational information be necessary to provide to RSA.

Earthscope activities at Path to Nature.

EMD web page can be found through the DPW link on the RSA Garrison webpage:

http://www.garrison.redstone.army.mil/default.aspx

Information on natural resource management, to include wetland management, is available on that webpage.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operational controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs),

Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow:

Clean Water Act, Section 404
Clean Water Act, Section 401 Certification and Wetlands
Army Regulation 200-1, Environmental Protection and Enhancement
65 FR 62565-62572, Unified Federal Policy for a Watershed Approach to Federal Land and Resource
Management
40 CFR Parts 22, 230 through 233, Wetland Protection
33 CFR Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources
Rivers and Harbors Appropriation Act, Section 10
EO 11990, Protection of Wetlands
Sikes Act Improvement Act
Integrated Natural Resources Management Plan (as required by Sikes Act)
DoD Instruction Number 4715.3, Environmental Consveration Program
Tennessee Valley Authority Act, Section 26a
National Environmental Policy Act
32 CFR 651, Environmental Analysis of Army Actions

Operational control of the Advanced Mitigation Credit Bank:
CWA Section 404/401 & TVA Act Section 26a for Martin Road Improvement (USACE File No. 2000-02264, TVA File No. 12451) (Required record for management of the Garrison Wetland Mitigation Bank):
* General permit conditions (Limit for completing construction is 8/21/2008 (construction was completed in 2002-2003); maintain authorized activity in good condition and in conformance with permit terms/conditions; notify DA of discovery of previously unknown archaeological remains; obtain signature of new owner (if property is sold) and provide to DA; comply with Section 401 water quality certification; and allow DA represntatives to inspect authorized activity).
* Special permit conditions (work performed IAW permit plans; copy of permit on-site and known by contractors; fill activities performed during low flow conditions; disturbed areas stabilized as soon as practicable after construction; Regulatory Office contacted at least 2 weeks prior to construction; wetland mitigation plan (Plan for an Advanced Credit Wetland Mitigation Site) carried out in its entirity

Required Permits

Clean Water Act Section 404 permit from USACE. Permit application is sumbitted on a DA Form (OMB No.
0710-0003) if the project does not involve Section 401 certification or activities pertinent to TVA.

Clean Water Act Section 401 permit from ADEM. Permit application is submitted on ADEM-DA Joint 404-401
Joint Form (ADEM Form 166).

Section 26a permit from TVA (necessary if affecting waters of Tennessee River or its tributaries).
Permit application is submitted on a DA/TVA Joint Form (OMB No. 3316-0060)

Section 10, Rivers and Harbors Act of 1899. Permit application is sumbitted on a DA Form (OMB No.
0710-0003) if the project does not involve Section 401 certification or activities pertinent to TVA.

Required Plans

Integrated Natural Resources Management Plan (required by Sikes Act Improvement Act of 1997)

Required Records

-Integrated Natural Resources Management Plan is developed and maintained by the Cultural & Natural Resources Branch of the Environmental Management Division
-NEPA Documentation for Federal Actions are maintained in a database by the CNR Branch of

EMD
-CWA Section 404/401 permits & TVA Section 26a permit, if necessary, are maintained by the CNR Branch of EMD. Permits for 2010-2014 include:

1) Section 404/401 for High Volume Controlled Ambient Service Magazine (DA Permit File No. LRN-2013-00663)
2) Section 404/401 for TA-3 Communication Fiber Line (DA Permit File No. LRN-2012-01151)
3) Section 404/401 for Zierdt Road Widening (permit held by City of Huntsville) (DA Permit File No. LRN-2007-02541
4) Section 404/401 for VBIII Ring Road Relocation (DA Permit File No. LRN-2005-02706)
5) Section 404/401 for TA-1 Sled Track #2 Widening (DA Permit File No. LRN-2007-01990, ADEM JPN# AL11-03)
6) Section 404/401 for Martin Road West Widening (DA Permit File No. LRN-2011-00977)

Permits previous to 2010 are on file in the EMD.

Monitoring/Measuring Requiremens

* Clean Water Act Section 404/401: Permitee required to submit certification that the permitted activity has been completed as well as the required mitigation, in accordance with the US Army Corps of Engineers (USACE).

* Monitoring required by Section 404/401 & Section 26a for Martin Road Improvement (USACE File No. 2000-02264, TVA File No. 12451) in order to determine if advanced mitigation credit site success criteria have been met as established by these permits.

* Monitoring through NEPA:
32 CFR 651.15 Mitigation and monitoring: Full discussion presented in CFR. Synopsis:
* Consider mitigation measures to avoid or minimize environmental harm.
* Mitigation measures (only those considered practical - this term is defined in the CFR) identified in FNSI or ROD must be implemented by proponent because they are commitments made as part of the Army decision. Funded in accordance with laws/regulations. Penalties against a contractor for noncompliance may also be specified as appropriate.
* A monitoring and enforcement program for any mitigation will be adopted and summarized in the NEPA documentation (see Appendix C of CFR for guidelines on implementing such a program). Monitoring program should be established before action begins and should remain in effect as long as needed to address impacts of the action.
* Prepare environmental monitoring report after action execution.

Calibration

None Required

What Significant Impacts Are

Any action in or affecting a wetland that would not be mitigable (i.e., would not be permitable), or any action that could not be permitted which degrades the biotic or abiotic function of wetlands, or that could release hazardous materials, hazardous wastes or contaminants into the waters of the U.S. will be considered a significant impact.

Any loss of wetlands violates laws presenting a significant environmental impact that must be mitigated.

Responsible Person(s)

AR 200-1 “Environmental Protection and Enhancement”

1-24. Garrison commanders

Garrison commanders (GC) as used in this regulation include commanders of USAR Regional Readiness Support Commands (RRSCs), State Adjutants General relative to the concept of the State as an installation, OCONUS U.S. Army Garrisons, and GCs as appropriate as determined by the IMCOM, Headquarters NGB–ARNG, and State Adjutants General. The GC will—

a. Comply with applicable Federal, State, and local environmental laws, regulations,

internal directives and goals, EOs, and overseas FGS.
b. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
c. Maintain appropriate environmental records as required by law.
d. Implement and maintain a mission-focused EMS in accordance with the ISO 14001 standard. Third party registration to the standard is not required, and environmental funds will not be used for this purpose. However, GCs may pursue third party registration when it provides clear and documented mission benefits.
e. Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
f. Approve integrated natural resource management plans (INRMPs).

The Director of Public Works (Joe Davis) serves as the principal staff engineer and advisor to the Garrison Commander on all Installation Real Property Management activities. He is responsible for the planning, direction, and execution of all work programs at Redstone Arsenal, including, but not limited to, engineering, construction, operations, maintenance, environmental, housing, and real property. Acting through the Chief of the Environmental Management Division (Terry Hazle), he is responsible for reviewing all environmental documents and construction designs and proposals to ensure protection of natural resources and coordinating with local, state, and Federal government and civilian organizations relative to natural resources management at Redstone Arsenal.

The Chief of the Environmental Management Division (Terry Hazle) is responsible for carrying out the integrated management of natural resources on Redstone Arsenal addressed in the Integrated Natural Resources Management Plan, including environmental quality and land, forest, fish and wildlife, and endangered species management. The environmental policy at Redstone Arsenal is to commit to complying with environmental laws and regulations, the prevention of pollution, and continually improving the system for managing these requirements.

The Chief of the Cultural and Natural Resources (Tom Richardson) Branch include management of the Wetlands Program (through the Wetlands Program Manager (Christine Easterwood)) for Installation planning and actions.

Resources

Achieving the goals to comply with all federal, state and local environmental laws, regulations, executive orders and policies can be accomplished with in-house resources. Development and operations of Team Redstone tenants that may impact wetlands require the tenant(s) to fund wetland delineations, permit fees, and any associated mitigation required by the permit.

Sustainability

The purpose of wetlands management is to comply with the laws and regulations detailed in the Legal tab of the Aspects database and to ensure there is no net loss of wetland areas.

Consequences

Violation of Clean Water Act, Section 404 can result in a revoked permit and/or civil penalties of up to $25,000 per day for each violation.

Violation of Clean Water Act, Section 401 can result in a revoked permit.

Failure to protect and manage wetlands according to AR 200-1 and Army Policy may result in potential loss of or restrictions on lands available for Army mission.

Violation of 40 CFR Parts 22, 230 through 233 (Includes Compensatory Mitigation Rule) may result in civil penalties to be determined by governing authority (judge?).

Violation of the Rivers and Harbors Act may result in a penalty of $100; and removal of any unpermitted structure or workretary of Homeland Security.

Violation of Executive Order 11990 will result in same penalties as violations of Clean

Water Act.

Violation of Tennessee Valley Authority Act, Section 26a amy result in additional fees may be assessed for processing after-the-fact permits for activities already conducted without a permit in violation of Federal regulations.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Status of measureable targets updated.
Have we done anything to make people aware of Redstone Wetlands? Newspaper? Earth Day activities? Path to Nature? Education Center?
The monitoring requirements section is too wordy.

Location

Top Three Issues

Top Three Successes

1. The Garrison has been able to maintain "no net loss" of wetlands with the help of the work order review system, which identifies potential impacts to waters of the United States.
2. A Final Report on the status of the Advanced Wetland Mitigation Credit Site has been prepared and is awaiting review coordination with the USACE.
3. Wetland management allows me to get out of the office and into the field. This is a major success.

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ID	Aspect	Subject Matter Expert(s)
16	**Energy Management**	Mark Smith

Discussion

DA ordered that Energy Management be added to EMS to meet the requirement of EO 13423.

Impacts or possible impacts

- Opportunity for renewable resource substitution
- Opportunity to lower amount used

Goals

Comply with Laws and Regulations

Reduce Pollution

Measurable Targets

Energy management goals -
Annual energy reduction goal of 2% from FY 2006 - FY 2015

Letters of Instructions

Legal Requirements

There are no Environmental Laws or Regulations that affect energy management at Redstone Arsenal

E.O. 12902, Energy Efficiency and Water Conservation at Federal Facilities

E.O. 13148, Greening the Government through Leadership in Environmental Management, April 21, 2000
This EO, dated 21 April 2000, mandates that environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management. The primary goal of this EO in the hazardous materials arena is that Federal facilities shall be leaders and responsible members of their communities by informing the public and their workers of possible sources of pollution resulting from facility operations.

AR 420-1 (.pdf, 9.2Mb) Army Facilities Management, addresses the management of Army facilities. Specifically, it describes the management of public works activities, housing, and other facilities operations and management, military construction program development and execution, master planning, utilities services and energy management, and fire and emergency services. Also, it identifies and synopsizes other regulations that provide detailed facilities management policy. The Army Energy and Water Management Program is in Chapter 22. AR 420-1 supersedes AR 11-27, AR 210-50, AR 415-15, AR 420-10, AR 420-18, AR 420-49, AR 420-70, AR 420-72, AR 420-90

AR 420-41 (.pdf, 537Kb) establishes policies, responsibilities, and procedures for the acquisition and sale of utility services. The sections pertaining to acquisition implement DOD Directive 5100.32. The sections pertaining to sale of utilities services implement 10 USC 2481.

Policy and guidance formerly found in AR 420-49, Utility Services, is now found in Chapter 22 of AR 420-1, Army Facilities Management

The Energy Policy Act of 2005 reauthorizes Energy Savings Performance Contracts (ESPCs) through 30 September 2016. EISA 2007 permanently extends the ESPC authority.

Assistant Secretary of the Army for Installations and Environment memorandum (.pdf, 153Kb) 5 May 2004 - Utilities Services Reimbursement Policy for Residential Communities (RCI) Partnerships provides policy and implementing instructions for the purpose of determining reimbursement for utilities services provided to RCI projects.

Assistant Secretary of the Army for Installations and Environment memorandum (.pdf, 161Kb) 5 May 2004 - Army Residential Communities Initiative (RCI) Utility Policy provides the

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policies and implementing instructions for residents of privatized housing under the RCI.

ACSIM Memo (.pdf, 49Kb) 22 Dec 2004 - Utilities Usage Reporting at Installations with RCI Housing

DOD Instruction 4170.11 (.pdf, 1.2Mb), 22 November 2005, provides procedures for DOD installation energy management and pertains to all phases of administration, planning, programming, budgeting, operations, maintenance, training and material acquisition activities that impact the supply, reliability and consumption of energy at DOD installations. This instruction implements DOD Directive 4140.25 (.pdf, 49Kb) DOD Management Policy for Energy Commodities and Related Services, 25 August 2003 which updated the policies and responsibilities to: 1) manage energy commodities; 2) minimize the number and complexity of fuels and maximize the use of commercial fuel; and 3) continue authorization to publish DOD 4140.25-M DOD Management of Bulk Petroleum Products, Natural Gas and Coal and other DOD publications on energy commodities. View the Installation Energy Policy Goals Memo (.pdf, 62Kb) dated 18 November 2005.

Energy Policy Act of 2005 (Public Law 109-58)
There are many elements of the Energy Policy Act of 2005 that directly impact the federal sector, and, depending upon future federal appropriations, will significantly help the federal sector reduce energy costs and meet energy goals.
New energy reduction goal of 2% per year from 2005-2015, with FY 2003 as the new baseline
Increased emphasis on renewable energy
Reauthorization of the Energy Savings Performance Contract program to 30 September 2016 to provide an avenue for federal agencies to meet the new goals and save operational costs.

The Energy Independence and Security Act of 2007 (EISA 2007) in some cases reaffirmed goals set in the Energy Policy Act of 2005 and in other cases expanded previous goals. Two specific examples follow or view the full text of EISA 2007 (.pdf).

Section 431 of EISA 2007 increased the federal energy reduction goal from 2% per year (as established by EPAct 2005) to 3% per year, with a new target of 30% greater efficiency by 2015. The percentage reductions for each fiscal year (FY) are:
FY 2006 .....2%
FY 2007 .....4%
FY 2008 .....9%
FY 2009 .....12%
FY 2010 .....15%
FY 2011 .....18%
FY 2012 .....21%
FY 2013 .....24%
FY 2014 .....27%
FY 2015 .....30%
Section 523 of EISA 2007 requires that at least 30% of the hot water demand for each new federal building (or major renovations to existing federal buildings) be met through the use of solar hot water heating (if life-cycle cost-effective).

Executive Order 13423 - Strengthening Federal Environmental, Energy, and Transportation Management
EPACT/EISA 2007/EO 13423 Cross Walk (.xls, 40Kb)
Executive Order 13031 - Federal Alternative Fueled Vehicle Leadership
Executive Order 13150 - Federal Workforce Transportation

Code of Federal Regulations (CFR)
OACSIM Issues Guidance Regarding ASHRAE Standards for UEPH
On 4 December 2006, DOE published interim energy conservation policy in the Federal Register (.pdf 110Kb). EPAct 2005 states that low-rise buildings are to follow the 2004 International Energy Conservation Code (IECC). EPAct 2005 also states that high-rise buildings (e.g., 4 stories and higher) must follow ASHRAE Standard 90.1. OACSIM policy establishes that the single energy efficiency standard for ALL new construction, regardless of building height, be 30% better than ASHRAE 90.1 as set forth by the Energy Policy Act of

2005. View the OACSIM guidance memo (.pdf 61Kb).
10 CFR 434 - Energy Code for New Federal Commercial and Multi-Family High Rise Residential Buildings applies to new Federal multi-family high rise residential buildings and new Federal commercial buildings.
10 CFR 435 - Subpart C Energy Conservation Voluntary Performance Standards for New Buildings; Mandatory for Federal Buildings - Mandatory Standards for New Federal Residential Buildings applies to the design of all new residential buildings except multi-family buildings more than three stories above grade.
10 CFR 436 - Federal Energy Management and Planning Programs sets the rules for Federal energy management and planning programs to reduce Federal energy consumption and to promote life cycle cost effective investments in building energy systems, building water systems and energy and water conservation measures for Federal buildings.
41 CFR - Public Contracts and Property Management, Subtitle C Federal Property Management Regulations System.

In EO 13423, Section 2, Federal agencies are required to:

improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity by:
3 percent annually through the end of fiscal year 2015 relative to the baseline of the agency's energy use in fiscal year 2003, or
30 percent by the end of fiscal year 2015 relative to the baseline of the agency's energy use in fiscal year 2003
ensure that:
at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources, and
to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.

In relationship to Energy, Section 3(a) mandates that the heads of each agency implement within the agency sustainable practices for:

energy efficiency
greenhouse gas emissions avoidance or reduction, and
renewable energy, including bioenergy.

EO 13423 Section 9 provides the following definitions applicable to this Program Area.

greenhouse gases - carbon dioxide, methane, nitrous oxide,hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
new renewable sources - sources of renewable energy placed into service after January 1, 1999.
renewable energy - energy produced by solar, wind, biomass, landfill gas, ocean (including tidal, wave, current and thermal), geothermal, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project.
energy intensity - energy consumption per square foot of building space, including industrial or laboratory facilities.
sustainable - to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans.

Training Requirements

There are no legal requirements for training under the aspect of Energy Usage.

Awareness

Newspaper:
Title: Steam Plant Upgrade to Bring Energy Savings
Date: 14 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\034.pdf

Title: Flying Skies with Coal Mix Fuel

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Date: 28 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\038.pdf

Title: Environmental Efficiency Helps Ensure Existence
Date: 31 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\011.pdf

Title: Low Speed Electric Vehicles Get Plug From Vendor
Date: 5 May 2010
Locatioin: T:\DATA\Correspondence\EMS Training Documents\017.pdf

Title: Energy Conservation Project Should Save $2M Annually
Date: 13 April 2011
Location: T:\DATA\Correspondence\EMS Training Documents\057.pdf

Title: Power Outage Sheds Light On Energy Consumption
Date: 11 May 11
Location: T:\DATA\Correspondence\EMS Training Documents\060.pdf

Title: Homeowners Turned On To Energy Conservation
Date: 18 May 2011
Location: T:\DATA\Correspondence\EMS Training Documents\061.pdf

Title: Redstone Energy Tab Surges to $4M
Date: 31 August 2011
Location: T:\DATA\Correspondence\EMS Training Documents\064.pdf

Title: Top Electric Users at Redstone Listed for Fiscal Year 2011
Date: 5 October 11
Location: T:\DATA\Correspondence\EMS Training Documents\065.pdf

Title: Energy office Sends Awareness Reminders
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\068.pdf

Title: Energy Expenses Drain Taxpayers' Dollars
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\072.pdf

Title: Redstone Buys Water from Huntsville
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\073.pdf

Title: Energy Security Essential for Expeditionary Army
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\074.pdf

Title: Time To Change Misconception About Light Bulbs
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\075.pdf

Title: Steam Energy Carries Heat to Arsenal
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\076.pdf

Title: Natural Gas an Alternative Clean Power Solution
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\077.pdf

Title: Longtime Electrical Engineer Stays Current on Conservation
Date: 26 October 2011

Location: T:\DATA\Correspondence\EMS Training Documents\078.pdf

Title: Arsenal Builds Up to Energy Savings
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\079.pdf

Title: Energy Conservation Project Should Save $2M Annually
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\080.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

There are no permits required related to energy usage

Required Plans

Required Records

Monitoring/Measuring Requiremens

Calibration

What Significant Impacts Are

Responsible Person(s)

Energy Manager is responsible for:
Setting and tracking engery goals and targets on Redstone Arsenal

Resources

Adminstration Overhead Cost (Chief's Office) - 137 Hours - $6423

Sustainability

The Energy and Water Master Plan is a roadmap that envisions secure, reliable, and sustainable energy and water services for Redstone Arsenal. The Plan acts as a framework to achieve at a minimum the mandates outlined in EPAct 2005, EO13423, and EISA 2007 through awareness, measurement, efficiency, and the control of supply and distribution, while establishing stewardship of the environment as a fundamental principle to sound energy and water management.
Redstone Arsenal’s long range goal to move toward a self-sustaining future while continuing to support its mission landscape requires a flexible and adaptive plan. This plan must raise environmental awareness for Redstone Arsenal personnel, local communities, and other government agencies. Through the implementation of new technologies, enhanced monitoring and

control systems, increased efficiencies, and renewable energy, the plan will achieve new levels of accountability, systems integration, and a path toward elimination of fossil fuel use while maintaining quality of life for Redstone Arsenal personnel.

Energy Systems Existing Conditions
• Electric power purchased from the local provider
• Distributed steam purchased from the nearby waste-to-energy plant
• Decentralized steam from several on-post steam production plants
• Natural gas for heat and equipment operation
• Fuel oil for emergency generators and back-up heat
• Propane as a less polluting alternative to fuel oil
The vast majority of energy is supplied and consumed through electricity, natural gas and steam. The preponderance of RSA's electrical power comes from the Tennessee Valley Authority (TVA). There are three primary substations distributing power to unit substations, which in turn supply facilities. There are some meters in place; however the majority of the individual buildings are unmetered. A project to install 300 meters is currently underway, and another has been initiated to meter all buildings over 29,000 sq ft and reimbursable customers. This will effectively double the number of new meters with remote communication capability.
RSA purchases most natural gas through the Defense Energy Support Center (DESC) and a third-party broker, Interconn Resources. Huntsville Utilities is paid a transportation tariff on these accounts. Eighty-eight (88) gas meters, located throughout the Garrison, represent a capacity of 631,590 cubic feet per hour (CF/hr). The existing natural gas lines are being replaced due to ineffective cathodic protection, which causes corrosion of the system. Additional gas lines are being installed by TVA Energy services to provide for future boilers in facilities which are currently heated by the steam system.
Steam is purchased from a waste-to-energy plant owned by the Huntsville Solid Waste Disposal Authority (SWDA). In a 2003-2004 study of the steam system, it was noted that approximately 45% of the steam energy CEWMP VISION STATEMENT Redstone Arsenal was lost in the distribution system, providing for opportunities to reduce consumption through repair. There are also several steam production plants on-post that serve individual or groups of facilities proximally located to each of the plants. These plants use natural gas or fuel oil and have a total steam capacity of 217,000 pounds per hour (lbs/hr).
Energy consumption rates, evaluated over several years, result in trends that are graphical representations of the projected path of energy consumption. This provides a visual picture of progress made toward meeting Federal mandates.
Energy Trends
RSA must continue energy efficiency efforts to meet the 3% annual energy intensity reduction target in accordance with EO 13423. Due to the fact that "energy" is distributed in several forms on RSA, it is important to evaluate individual component trends and make improvements in every facet of energy usage to maximize energy reductions.

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

In the awareness, we need to include all the newspaper articles and poster campaigns that Mark Smith has done.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
17	**Smoke from Prescribed Burns**	Greg Hicks

Discussion

Redstone Arsenal provides a service of forestry management. An environmetnal aspect of forestry managemernt is prescribed burning. Prescribed burn of approximately 2500 acres per year. Prescribed burning is a significant aspect that will be managed by EMS.

Impacts or possible impacts

- Complaints by citizens
- Damage to health
- Possible increase in laws and ordinances
- Positive Ecological Benefits
- Largest air emission source
- Reduction of catastrophic fire hazard

Goals

Comply with environmetnal laws and policies.

Goal is to prevent pollution while effectively managing the property with this essential tool.

Measurable Targets

Develop and maintain a wild land fire management plan. To be complete by June 1, 2009

Write an annual prescribed burning plan that tells how to do it in accordance with the laws and regulations before burning.

Complete daily burn plans and provide notice to the employees of the arsenal as well as outside entities with a need to know before implementing each prescribed burn.

Letters of Instructions

Legal Requirements

Clean Air Act

SIKES Act

AR 200-1, dated December 2007
Environmental Protection & Enhancement
This regulation provides a brief overview of environmental programs and requirements. It does not provide a complete listing of requirements or detailed guidance on complying with environmental laws and regulations. In addressing environmental issues, readers must consult the applicable laws, regulations, and guidance documents referenced in this regulation. This regulation supplements Federal, state, and local environmental laws for preserving, protecting, and restoring the quality of the environment. It also integrates pollution prevention, natural and cultural resources, and the National Environmental Policy Act (NEPA) into the Army Environmental Program.

STATE OF ALABAMA
SMOKE MANAGEMENT PROGRAM
I. GENERAL
This Smoke Management Program (SMP) utilizes a basic framework of requirements and procedures for managing smoke from fires managed for resource benefits developed by the State of Alabama with the cooperation and participation of land owners and managers. Historically, prescribed fires have had no significant impact on air quality or visibility in Alabama, but this SMP will list actions to be taken if they do in the future. This SMP also serves as a coordinating document between the Alabama Department of Environmental Management and the Alabama Forestry Commission, the two State of Alabama agencies involved with the program.
II. PURPOSES
The purposes of this SMP are to mitigate the nuisance and public safety hazards posed by smoke intrusions into populated areas; to prevent deterioration of air quality and NAAQS

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violations; and to address visibility impacts in mandatory Class I Federal areas.

III. ROLE OF PRESCRIBED BURNING IN ALABAMA

Prescribed burning, the controlled use of fire under specific conditions to accomplish resource management objectives, has had a long history in Alabama. The Native Americans used controlled fire to improve wildlife habitat and forest visibility, as well as to clear land for agriculture. Early settlers also burned the woods extensively, for visibility, pest prevention and improved forage for cattle. In the 1920's Alabama began to implement forest fire controlprograms to reduce the damage caused by these fires. Figure 1 shows the acres lost to wildfiresin Alabama since 1940.

Organized prescribed burning was begun by the Alabama Forestry Commission (AFC) in the late 1970's as a way to reduce fire damage, improve wildlife habitat and increase the amount of reforestation in the State. Initially, nearly all burns were done by AFC employees. After severalyears of education and extension outreach programs, private foresters and land managers alsobegan to use prescribed burning on their own and clients' lands.

Prescribed burning has accomplished several goals within the state. It has helped reduce the acres lost to wildfire. It has improved wildlife habitat to the point that Alabama has all-time high populations of whitetail deer and wild turkey. It has played a critical part in the recovery of the Red Cockaded Woodpecker, endangered species, and the nearly lost Longleaf Pine-Wiregrass ecosystem. Prescribe burning is accepted by the population of Alabama as an important tool in forest resource management and is supported by the environmental community in the state as well.

In 1996, the Alabama State Legislature passed a "Right to Burn" Law that listed prescribed burning as an inherent property right for landowners. The same bill also implemented reforms in the way prescribed burn managers operated and instituted smoke management programs in Alabama.

-2-

IV. SMOKE MANAGEMENT PROGRAM COMPONENTS

A. Authorization to Burn

Under Alabama law, the AFC is authorized to issue Prescribed Burning Permits. Permits are required for any person, firm, association or corporation to burn woodland, grassland, fields or "new ground" that is over one-quarter (1/4) acre in size or that is done within 25 feet of continuous natural cover. The AFC Burning Permit System has been in place since the early 1980's, with a major revisionin the early 1990's. The system begins with an applicant telephoning one of ten AFC dispatch centers and requesting a Burn Permit. The trained dispatcher collects information from the applicant, consults with them about weather and air quality issues, and grants the permit, issuing a unique permit number. The permit data is entered into a database and transferred to the AFC main database in Montgomery. All prescribed burning in Alabama requires a permit, for both private and public lands.

The AFC criteria for authorizing a prescribed burn for resource benefits include weather conditions, air quality, safety and the perceived ability of the permittee to control the fire. Dispatchers take time to ensure that private landowners burning on their own lands are aware of all aspects of burning, including fire control and smoke management. The AFC is authorized under state law to deny permits if there is an increased danger of uncontrolled wild fires, if the landowner appears unable to control the proposed fire, or if air quality within an airshed is already impaired.

The AFC Prescribed Burning Permit collects information on all aspects of the burning project.

Basic data includes:

Location (County, Section, Township, Range)

Landowner and Person Responsible for Fire

Type of Burn (fuel reduction, hardwood control, debris, agriculture, wildlife, etc.)

Acres to be burned

Time of burn; time permit issued; and length of burn in days

Stagnation Index for that day and that night

The State of Alabama has a law that grants limited liability protection to all fire managers who become a Certified Prescribed Burn Manager and who develop and follow a Smoke Management Plan for the prescribed burn. This voluntary program has been widely accepted by forest managers, with over 700 burn managers being certified. To be certified, a manager must be trained in fire control and smoke management and have at least two years experience. Courses for Certified Prescribed Burners are taught by Auburn University on a

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semi-annual basis. All prescribed burns for natural resource benefits that are done by Certified Prescribed Burn Managers follow a written Fire Plan (or Burning Prescription). These plans are voluntary, but give liability protection to the burner, under Alabama law. .
-3-
Private landowners burning on their own land are encouraged to have a fire plan. Many of these burns are small in area (less than 10 acres) and are referred to as "de minimus' fires. The AFC dispatcher will go over the basics with the landowner and help them put a basic plan in place.
These de minimus fires do not require written fire plans.
B. Minimizing Air Pollutant Emissions
As part of its overall landowner assistance and forest management assistance programs, the AFC helps landowners identify and implement the most economical and most environmentally beneficial ways to manage and develop their properties. Prescribed burning is used both for understory control and to prepare a site for reforestation after harvest. The AFC is working with landowners to use economically feasible treatments that meet their landownership objectives with minimal environmental disturbance, including minimal air pollution emissions.
The AFC has worked with landowners to reduce the amount of piling and burning done during site preparation for replanting. Instead, landowners are encouraged to use low-impact herbicides followed by a broadcast burn. This system reduces the concentration of the fuels and prevents soil movement. The result is a fire that burns quicker, with fewer emissions, especially "carryover" smoke from fires that burn overnight.
C. Smoke Management Components of Burn Plans
Alabama has a voluntary program of Prescribed Burning Plans that is utilized by Certified Prescribed Burn Managers throughout the state. Burn Plans are required if a manager wishes to be covered by Alabama's limited liability law. Private landowners burning on their own land, or other land managers who do not wish to be covered by the lowered liability regulations, do not have to have a written burn plan. The exact details of each plan will vary based on the needs of the manager and the opportunities present on the site.
The AFC has a basic Prescribed Burning Plan (Figure 3) for its own employees, who do a significant amount of prescribed burning on private lands (for a fee). The Plan includes data on the type of fire desired, fuel conditions, topography, preferred weather conditions (including air 1quality) and fire control parameters.
All Burn Plans, developed by both the AFC and privately, contain basic smoke management components. These components are described in a publication, A Smoke Screening System for Prescribed Fires in Alabama, published by the AFC in 1992. The following discussions are taken from this document.
1. Actions to Minimize Fire Emissions
The Alabama system uses basic strategies that work to "improve and reduce the burning of heavy fuels and to conduct prescribed burning in good smoke dispersion weather". The system specifically works to reduce smoke loading. Specific actions suggested in this voluntary system
include:

ALABAMA FORESTRY COMMISSION
PRESCRIBED BURNING PLAN
Unit or Landowner: Permit No.
Tract No. S T R District County
Acres to Burn Chains to Plow Previous Burn Date
STAND DESCRIPTION
Overstory Type Height to Bottom of Crown
Understory Type
Fuel Description and Amount
Purpose of Burn Topography & Soil
Intensity Desired % Litter to Leave
Manpower Needs Equipment Needs
Maximum Scorch Acceptable
List Smoke-Sensitive Areas
Special Precautions
Passed Screening System?
Adjacent Landowners to Notify

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WEATHER FACTORS: Preferred Alternate
(if needed)
Actual
Surface Winds
Transport Winds
Minimum Mixing Height
Stagnation Index
Maximum Temperature
Relative Humidity
Fuel Moisture
Starting Time
Completion of Ignition
Burning Technique
Lower Litter Moist
Date Burned
Prescription Done By Chains Plowed
Title Date
Cut stumps low and fell snags.
Minimize amount of logging debris by close utilization.
Leave debris scattered, if possible, and utilize larger material.
Use small piles (which burn quicker and cleaner) instead of windrows.
Pile debris when dry and shake out dirt.
Burn debris when it is dry.
Take precautions to keep stumps and snags from burning.
Use backing fires for less smoke production.
Besides specific guidelines published in the Smoke Screening System, the AFC has worked with landowners and resource managers to reduce the amount of windrow burning as a method of site preparation for reforestation, in favor of herbicide use followed by a broadcast prescribed burn. The resulting burns have significantly less smoke and particulate matter and also burn quicker,
so that residual smoke can dissipate before nightfall.
2. Evaluate Smoke Dispersion
The Alabama Smoke Screening System is a detailed evaluation done by all certified burn managers before any prescribed burn. This system lists smoke sensitive areas within the airshed of the fire, the weather conditions needed to minimize impacts, and burning techniques to minimize smoke production and maximize dispersion.
In support of this system, the National Weather Service (NWS) daily publishes a Dispersion Index, Mixing Height Levels, and Transport Winds direction and speed. These are calculated at the NWS office in Birmingham and published for regions within the state. The Dispersion Index
indicates how well and rapidly smoke will be dispersed into the atmosphere, based upon atmospheric stability, mixing height, transport winds, and temperature. The Index uses a numerical rating from 1 to 100. Index values of 1 to 6 indicate severe inversion/high stabilityand no burning should be done. Index values close to 100 indicate very high lift and dispersion,but may indicate fire control problems.
Based upon this data, and in support of the Smoke Screening System, the AFC publishes the NWS data on its web page and verbally gives it to all applicants for a burning permit.
All prescribed burning plans developed by the AFC, and most developed by private resource managers, utilize the smoke screening system and establish specific parameters for any planned burn so as to minimize smoke emissions and impacts.
3. Public Notification and Exposure Reduction Procedures
The burning plans developed under the Alabama system identify “smoke sensitive areas” and include procedures for alerting them to possible smoke impacts. Managers planning to burn large areas notify adjacent residents as well as identifiable “target” sites such as airports, hospitals, and nursing homes about their plans.
Managers who follow the Alabama Smoke Screening System and use a Prescribed Burning Plan have not had a history of local residential complaints. The AFC works closely with residents who raise concerns to mediate the issue with the burn manager. There have not been repeat offenses in this area.
Since the AFC has been involved with these activities, ADEM has noticed a significant decrease in the number of complaints concerning smoke from silvicultural activities. In the

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early 1970's there were approximately 15 complaints a year. Now ADEM receives less than three each year.

4. Air Quality Monitoring

The USDA Forest Service maintains and operates a speciated particulate monitor in the Sipsey Wilderness Area, the state's only mandatory Class I Federal Area. This monitor has the capability of collecting samples that can be analyzed to determine the constituents of haze. There is also a meteorological station in the area.

The ADEM maintains and operates PM2.5, PM10, and TSP monitors throughout the state. Elevated PM levels are routinely investigated by microscopically analyzing TSP and PM10 filters to determine primary constituents. The ADEM also maintains and operates other air pollution monitors in the state concerned with ozone, nitrogen oxides, carbon monoxide, and sulfur dioxide. The ADEM is capable of positioning real-time PM monitors in areas where resource burning is suspected of influencing air quality problems, but this requirement is assumed to be very rare.

D. Public Education and Awareness

The AFC has worked with the media and educators to improve the public's knowledge of the use of prescribed burning and its impact on the environment. The AFC has been joined in this effort by the Alabama Environmental Council, the Alabama League of Environmental Voters, the Longleaf Alliance and the US Fish and Wildlife Service.

The AFC does have the authority to restrict prescribed burning during periods of poor air quality and drought. This is done with appropriate public notices and media outreach. The use of the Alabama Smoke Screening System has also been explained in the media and outreach materials.

The large number of prescribed burns in Alabama, around 30,000 yearly, and their small average size (under 30 acres) precludes the AFC from publishing public advisories and results for each fire. The monitoring of the AFC and ADEM could result in various actions to address air quality and nuisance smoke problems.

E. Surveillance and Enforcement

The AFC is responsible for monitoring all fires within Alabama. It keeps all permitted burns under surveillance and enforces laws and regulations preventing unpermitted burning. The AFC can issue Unlawful Burning Notices, and can arrest repeat offenders under the Alabama Criminal Code. It can also take civil action against an unpermitted burn for fire suppression costs.

Burning plans that call for specific smoke management parameters are monitored by the AFC. If problems with smoke drift occur, the AFC will and does notify the burn manager immediately so that preventive actions can begin.

For several years ADEM has referred complaints concerning smoke from prescribed burning to the AFC for action. Their responses have been rapid and thorough.

F. Program Evaluation

The Alabama prescribed burning system of issuing permits and implementing smoke screening systems is under steady review and has had frequent refinements. The AFC has an open dialog with all stakeholders in forest management and resource protection through the Alabama Forestry Planning Committee (AFPC). The AFPC consists of leaders of all state and federal agencies that directly impact forest management in Alabama as well as representatives of environmental groups, landowners, and resource users. The AFPC was involved in the public education programs about prescribed burning and gives feedback to the AFC on ways to improve the systems.

The most recent modification to the system occurred in 1998, when following a series of discussions with various stakeholders, the AFC was given the authority to restrict the issuance of burning permits during periods of low air quality.

The AFC does not have a formal review program for its Prescribed Burning Permit System. It is not the AFC's intention, during a period of budget restriction, to begin such a program. All AFC regulations are subject to review already, following the Alabama Administrative Procedures Act.

There has been a recent occurrence that should improve prescribed burning in Alabama. The Alabama Prescribed Burning Council held its charter meeting on April 18, 2001.

G. Optional Air Quality Protection ADEM has several options when responding to recorded and predicted violations of criteria air pollutant standards. One of these options involves open burning activities. For example, elevated ozone levels and revised standards have caused most open burning not regulated by the AFC to be halted in five counties during the summer "ozone" months.

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V. SUMMARY
Smoke from managed burning and wildfires is not a serious problem in Alabama. This is primarily due to the effective programs of the AFC, which disperse and minimize periods of smoke and limit wildfires. Additionally, Alabama is not a state with as much public land as western states. This limits the volume of burning required for good forest management. Also, Federal and State authorities in Alabama have become proactive in their efforts to improve smoke management and address such issues as sprawl, changing land use and population growth. The AFC is ready to respond to smoke problems associated with prescribed burning and wildfire. The ADEM is ready to evaluate problem smoke.
Given this the _____ day of May, 2001.

_____ _____
Timothy C. Boyce Ronald W. Gore, Chief
State Forester Air Division
Alabama Forestry Commission Alabama Department of
Environmental Management

Training Requirements

Certified Prescribed Burn Manager

Awareness

EMD Web Page
The Forestry program web page begins at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/NaturalRes/forestry.html
The Forestry program web page was checked by Terry Hazle on 11/14/2011 and was determined to be adaquate for Environmental Awareness.

Newspaper:
Title: Environmental Managers Set Friendly Fires
Date: 7 April 2010
Location: T:\DATA\Correspondence\EMS Training Documents\013.pdf

Title: Rite of Spring
Date: 9 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\054.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

_____

Required to write a site specific plan before each burn based on conditions . Wild land Fire Manager completes and maintains in his office.

Required Permits

State Burn Permit required by Alabama Forestry Commission. Maintained in office by installation forester/wildland fire manager.

Required Plans

wild land fire management plan
INRMP
Annual Burn Plan

Operational Control Plans

Required Records

NEPA Documentation for Federal Actions
Number of acres burned.
Maps of acres burned by year for planning and reporting.

Monitoring/Measuring Requiremens

At end of burning season write the Chief EMD a memo telling the deviations from the original burn plan.

Calibration

The are no requirements for calibration

What Significant Impacts Are

Responsible Person(s)

Garrison commander

Director of Public Works

Chief, EMD - signs the annual prescribed burn plan, wildland fire management plan,

Chief, Natural/Cultural Resources

Wild land Fire Manager

Helpers

Resources

FY2010

Labor (OMA):
Chief Oversite and direction .05 FTE - 94
hours $2,714.40
Program planning .70 FTE - 1306
hours $39,388.96
Adminstration Overhead Cost (Chief's Office) 260
hours $12,262.00

TOTAL GS LABOR 1,660
hours $54,365.36

Contract Labor (OMA):
GIS support 80
hours $4,502.00
Database Management 20
hours $1,126.00

TOTAL CONTRACT LABOR 100
hours $5,628.00

* Prescription Burning Execution part of Natural Resources Management

Sustainability

As fire frequency decreases across the country, biodiversity is rapidly declining. Since fire can no longer be conducted throughout the landscape, sustaining frequent fire is only accomplished with prescribed burning. Although burning is necessary for specific resources to be conserved, no fire proxy exists. Therefore using prescribed fire as a land management tool comes with costs, including emissions to air.
Smoke emissions from fire to the atmosphere is a consequence of prescribed burning, and some of the constituents of smoke from prescribed burning can cause health and safety

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concerns. These concerns have caused some to consider regulation that could make prescribed burning difficult, resulting in reduced fire intervals. However, many of the fire dependent ecosystems across the country have burned for millennium and even removing prescribed burning will not eliminate fire from the forest. Rather the fire regime will move from one of frequent controlled burning to infrequent wildfires. These wildfires often have health and safety concerns that are greater than that of prescribed fire. This wildfire regime not only results in risks associated with air quality, but also exposes people and property to the whims of weather, fuels, and wildfire.

In summary, prescribed fire is essential to conserve the various fire dependent ecosystems across the country. No surrogate to fire exists. Without prescribed fire, we do not eliminate fire from the woods but substitute frequent, low-intensity burning with benefits from management and minimal liabilities to infrequent, often catastrophic fire, with little to no control of its risks and loss of most of fire's benefits.

The Strategic Plan for the National Coalition clearly states that the Coalition will collect, organize, promote, and facilitate access to the information, tools, and techniques of prescribed fire. This includes the development of research needs assessments for priority fire science research. The National Coalition of Prescribed Fire Councils will also participate in national and multi-state legislation and rule making, such as the NAAQS discussed in this document. The Coalition was created to provide assistance and consultation to regional councils. We are here to help you identify prescribed fire barriers and assist in developing solutions. If ignored, air quality standards have the potential to become a barrier to the use of prescribed fire. We hope that this document has served as a guide to smoke management. As the wildland urban interface grows and natural areas dwindle, proper management of our smoke will be an imperative part of retaining the right and privilege to use prescribed fire as a land management tool.

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

How did we do on our measureable targets?
What did we do to make people aware of prescribed burn program? What more can we do?
What are some significant impacts of poor smoke management?
What are the consequences of not managing this correctly?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
18	**Natural Resources Management**	Tom Richardson

Discussion

Natural Resources Management is an environmental element of Real Property Management which is a service that is overseen by the US Army Garrison - Redstone. There are laws and regulations that require proper management of natural resources on federal properity. Natural Resources Management is a significant environmental aspect that will be managed as an aspect of the Redstone Arsenal Environmental Management System.

Impacts or possible impacts

Violation of US Law:

- Loss of habitat
- Loss of species diversity
- Loss of specific population
- Increase potential for surface water pollution
- Degradation of surface water quality
- Degradation of ground water recharge
- Increase potential for air pollution
- Erosion

- Habitat conservation in support of mission
- Maintain species diversity while in support of mission
- Maintain population dynamics while in support of mission
- Maintain functional ecosystems and communities
- Loss of habitat
- Loss of species diversity
- Loss of specific population
- Increase potential for surface water pollution
- Degradation of surface water quality
- Degradation of ground water recharge
- Increase potential for air pollution

Justification for Prescription Fire, Wildlife Management, Ag Support: Technician Support (FY 2010 = $ 85,000):

Contract labor is required as there are more demands for natural resource management than EMD has civil service positions to cover. The Army mission is to manage natural resources on RSA to assure good stewardship of public lands entrusted to the care of United States Army. Federal laws and regulations, including the Sikes Act Improvement Act, Endangered Species Act, and AR 200-1 require that fish and wildlife resources are maintained and enhanced in manners consistent with both accepted scientific practices and military mission requirements. EMD personnel are charged with supporting Army program objectives and can only do so with the support of contract labor in the Wildlife and Agricultural Programs. Prescribed fire is used as a management tool on an annual basis at Redstone Arsenal to reduce the risk of wildfire from military training related to usage of flares, tracers, and explosives.

GIS Support Justification (FY 2010 = $13,168):

The GIS working group in Redstone Arsenal’s EMD is responsible for the transition from the use of USGS topographic quadrangle maps to the use of databases to collect, track, and analyze data. The system allows Cultural/Natural Resource (CNR) Branch Managers to conduct preliminary reviews for proposed construction projects and mission actions. Proposed project locations are created as shape files which can then be overlain with natural, cultural and other environmental resource data layers in a map document. The GIS also allows CNR managers to work with proponent organizations in the early stages of a project to incorporate existing environmental constraints into the design. GIS allows EMD personnel to better manage natural resources without compromising the Army mission. Shape files that are maintained as natural resource management tools include hunting, fishing and trapping areas, wildlife openings and food plots, active agricultural outleases, ecologically sensitive areas, land vegetation areas, proposed burn areas, and wildlife

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management areas. Loss of funding for GIS support will obstruct the ability for natural resource managers at Redstone Arsenal to incorporate technology into their decision making process, therefore hindering the future growth and development at Redstone Arsenal.

Justification for Supplies and Equipment (Ag & Wildlife) (FY 2010 = $20,000):

The Army mission is to manage natural resources on RSA to assure good stewardship of public lands entrusted to the care of United States Army. It is federal law (Sikes Act, AR 200-1, Endangered Species Act, Clean Water Act, National Environmental Policy Act) to maintain and enhance fish and wildlife resources at Redstone Arsenal. In order to do so, funding must be held in place to acquire and retain supplies and equipment in the Wildlife and Agricultural Programs.

Funding for supplies and equipment for natural resource management is often acquired from several sources, all of which continue to shrink in size in times of budget reductions. Management of wildlife game species is funded by the sale of hunting, fishing, and trapping permits (21X5095) at Redstone Arsenal, however these sales continue to shrink as the population of hunters in society dwindles. Additional funding for wildlife related projects are at times derived from the Agricultural Outlease Program. Yet, due to RSA mission changes, the amount of acreage in the outlease program has decreased over the last five to six years, accompanied by a loss of annual cash revenue. This trend is not expected to change in the future due to anticipated growth and development at Redstone Arsenal.

Natural resource management activities require funding for supplies and equipment that may overlooked by those not familiar in this field. Management of nuisance animals becomes necessary when beavers create dams, flooding training areas and potentially damaging infrastructure. Hip waders, rakes, and other equipment is needed to trap and remove these animals. Prescribed burning is used to reduce fire hazards on test ranges; fire retardant suits, gloves, hats, equipment, and vehicles are necessary to accomplish those tasks. Agricultural fields that are currently not under lease must still be maintained, requiring farm equipment and fuel.

Justification for Silvopasture research for feasibility of restoring native ecosystems at RSA (FY 2010 = $100,000):

This proposed study seeks to compare and contrast impacts on tree and stand dynamics for two popular southern pine species, shortleaf (Pinus echinata Mill.) and loblolly (Pinus taeda), in silvopasture systems. Propose to examine how agroforestry techniques impact native understory establishment, wildlife habitat, the use of fire vs. herbicide, and soil quality. In addition, this research will aid in the development of management techniques and publications to assist natural resource managers at Redstone Arsenal and in the private sector with implementation of silvopasture systems. This study will not only provide a functional and educational analysis of a system not readily utilized or documented in this region, but will also allow for the coordination and creation of relationships between numerous academic/professional organizations and government agencies.

Goals

Comply with US laws and regulations with natural resources.

Comply with Sikes Act Requirements to enhance fish and wildlife resources

Implement Integrated Natural Resources Management Plan to the maximum extent practicable within funding constraints

Measurable Targets

Develop a checklist for all the laws and regulation governing Natural Resources and complete NLT 30 September 2009

Update Integrated Natural Resource Management Plan NLT 31 March 2009.

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Enhance wildlife habitats through elimination of 40 acres of invasive species (Privet) NLT 30 September 2009

Maintain 120 acres of wildlife openings by 15 June 2009 for spring food plot plantings and 30 September 2009 for Fall plantings.

Maintain additional 1,500 acres of wildlife openings via burning, disking, and chemical applications by 30 September 2009.

Construct new & maintain existing fire lanes, installation-wide (92 miles) NLT 30 November 2009

Review Installation actions to determine impact to wildlife/natural resources, as needed

Initiate 2-year telemetry research project to determine movements & migrations of beaver on RSA NLT 2012

Collect samples & analyze deer gestation data prior to 31 April 2009

Establish annual work plan for INRMP by 31 March 2009

Animal damage control in various areas throughout RSA, as needed

Prescribed burn on 2,500 acres, installation-wide NLT 1 April 2009

Maintain food plot GIS layer (ground truth and integration into RSA's GIS)

Maintain fire break GIS layer (ground truth and integration into RSA's GIS)

Update RSA Reg 200-3, as needed (completed 2nd Q FY09)

Spotlight surveys to estimate deer population at RSA NLT 15 April 2009 (post-hunt season) and 30 September 2009 (pre-hunt season)

Supervise daily work & project accomplishment of WS employees under interagency agreement

Maintain plant community/cover type map for GIS

Prepare annual work plans & budget requirements for Fish & Wildlife Management NLT 31 March 2009

Letters of Instructions

Legal Requirements

Natural Resource Management B. Federal Regulations

•EPA and Corps of Engineers Legal Memorandum, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. This memorandum, dated 5 June 2007, provides guidance to EPA regions and Corps districts implementing the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States [Added July 2007].

•The Endangered Species Act (ESA) of 1973. The purpose of this act (16 USC 1531-1547, et al., last amended in October 1988), is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions for protection of endangered species (16 USC 1531(b)). Under ESA, the policy of Congress is that all Federal departments and agencies must seek to conserve endangered species and threatened species and must use their authorities in furtherance of the purposes of this act. Further, Federal agencies must cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species (16 USC 1531(c)).

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•Sikes Act. This act (16 USC 670a-670f, last amended in November 1997) authorizes the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. The Act makes the Secretary of each military department responsible for [Revised March 1998]:
1.determining whether an Integrated Natural Resources Management Plan (INRMP) is appropriate for each installation
2.preparing the INRMP in cooperation with the Secretary of the Interior, acting through the Director of the US FWS, and the head of each appropriate state fish and wildlife agency
3.preparing and implementing the INRMP to reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources
4.ensuring, to the extent feasible, that sufficient number of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to carry out all of Title 16 - Conservation, including the preparation and implementation of INRMPs (16 USC 670e-2).

•Wild and Scenic Rivers Act of 1986. This act (16 USC 1271-1287, last amended in May 1991) outlines the policy of the United States that certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, must be preserved in free-flowing condition, and that they and their immediate environments must be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and fulfill other vital national conservation purposes (16 USC 1271). The purpose of this act is to implement the declared policy of Congress by instituting a national wild and scenic rivers system, by designing the initial components of that system, and by prescribing the methods by which and standards to which additional components may be added to the system from time to time (16 USC 1272).

•Withdrawal of Public Lands for Military Purposes. This act (Public Law (PL) 99-606), dated 6 November 1986, authorized the withdrawal of certain public lands for use by the military. This use includes training activities such as air-to-air combat and bombing and ground maneuvers.

•Farmland Protection Policy Act of 1981. The purpose of this act (7 USC 4201-4209, last amended in December 1991), is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland (7 USC 4201(b)).

•The Fish and Wildlife Coordination Act of 1946. This act (16 USC 666c, last amended in July 1965), is the Federal legislation that coordinates programs and activities regarding the conservation and rehabilitation of fish and wildlife in the United States. Unless provided for otherwise, whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first must consult with the U.S. Fish and Wildlife Service, Department of the Interior (DOI), and the head of the agency exercising administration over the wildlife resources of the particular state where the impoundment, diversion, or other control facility is to be constructed, with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water-resource development (16 USC 662(a)).

•Fish and Wildlife Conservation Act of 1980. This act (PL 96-366) encourages Federal departments and agencies to utilize their statutory and administrative authority to the maximum extent possible to conserve and protect non-game fish and wildlife and their

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habitats.

•Bald Eagle Protection Act. This act (PL 86-70) establishes penalties for taking, possessing, selling, purchasing, bartering, offering to sell, transporting, exporting, or importing any bald eagle or golden eagles. The prohibitions also apply to any part, nest, or egg.

•Anadromous Fish Conservation Act. This act (PL 89-304) was passed to promote the conservation, development, and enhancement within several states the anadromous fishing resources of the Nation.

•Marine Protection, Research, and Sanctuaries Act of 1972. This act (16 USC 1401 - 1444) declares that the United States will strictly limit all dumping into the ocean of any material which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.

•Marine Mammal Protection Act of 1972. This act, (16 USC 1362 - 1407) states policy to prevent the extinction or depletion of marine mammals as a result of man's activities. It further encourages the development of international arrangements for research on and conservation of all marine mammals.

•The Wilderness Act. This act (16 USC 1133), mandates that each agency administering any area designated as wilderness is responsible for preserving the wilderness character of the area. When the agency uses the area for another purpose, it will do so in a manner that preserves the wilderness character.

•The National Recreational Trails Act. This act (16 USC 1261, Section 1301 of The Surface Transportation Efficiency Act), outlines the national recreational trails funding program. The money available under this act is allocated to the states for the purpose of providing and maintaining recreational trails.

•Outleasing for Grazing and Agriculture on Military Lands. This section (10 USC 2667(d) addresses the taking of fees by Federal agencies for the leasing of Federal lands for grazing and agricultural purposes.

•Outdoor Recreation on Federal Lands. This section (16 USC 4601) addresses the development of recreational resources. This include the development of a nationwide outdoor recreation plan, classification of outdoor resources, and technical assistance from the SOI.

•Coastal Barrier Resources Act. This act (PL 97-348) restricts Federal expenditure and financial assistance for the encouragement of development of coastal barriers. The long term goal is to prevent the damage to fish and wildlife and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts.

•The Migratory Bird Treaty Act of 1918. This act (16 USC 703-711, last amended in December 1989), is a Federal law that enforces international conventions for the protection of migratory birds and game animals to which the United States is a party. Unless permitted by regulations, it is unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions for the protection and conservation of migratory birds and game mammals between the United States and the USSR, the United States and Mexico, and the United States and Japan (16 USC 703). It is also unlawful to ship, transport, or carry, by any means whatever, from one state, territory, or district to or through another state, territory, or district, or to or through a foreign country, any bird, or any part, nest, or egg thereof, captured, killed, taken, shipped, transported, or carried at any time contrary to the laws of the state, territory, or district in which it was captured, killed, or taken, or from which it was shipped, transported, or carried (16 USC 705). [NOTE: This law includes essentially all species of birds, not just those

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typically considered migratory. Only exceptions include Rock Dove (pigeon) and European Starling].

•Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Signed on August 10, 2005 SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-yr period 2005-2009. SAFETEA-LU includes the following [Added October 2005]:
1. Projects are prohibited on publicly owned parks, recreation areas, wildlife and waterfowl refuges, or historic sites unless there is no feasible and prudent alternative and all possible mitigation is used.
2. A total of $370 million is provided through 2009 to continue the program to develop and maintain trails for recreational purposes that include pedestrian, equestrian, bicycling and non-motorized snow activities as well as off-road motorized vehicle activities.
3. The conduct of an Wildlife Vehicle Collision Reduction Study of methods to reduce collisions between motor vehicles and wildlife, and report to Congress within 2 years on causes, impacts, and solutions. A manual of best practices is due 1 year after report to Congress. The Secretary is required to develop a training course for transportation professionals.

•Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality. This EO, issued on 5 March 1970 and amended by EO 11990 issued on 24 May 1977, is a Presidential order that implements NEPA. Under this EO, the Federal Government must provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals.

•EO 11988, Floodplain Management. This EO, dated 24 May 1977 and amended by EO 12148, 20 July 1979, implements NEPA, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. Each agency must provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. Each agency must evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this order. Each agency must take floodplain management into account when formulating or evaluating any water and land use plans, and must require land and water resources use appropriate to the degree of hazard involved. Agencies must include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the license, permits, loan or grants-in- aid programs that they administer (Section 2(c)).

Those responsible for Federal real property and facilities must take the following additional actions:
1.The regulations and procedures established under Section 2(d) of this order require, at a minimum, the construction of Federal structures and facilities to be consistent with standards, criteria, and the intent of those issued under the National Flood Insurance Program. They may deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.
2.If, after compliance with the requirements of this order, new construction of structures or facilities is to be located in a floodplain, accepted flood-proofing and other flood protection measures must be applied to new construction or rehabilitation. To achieve flood protection, Services must, wherever practicable, elevate structures above the base flood level rather than filling in land (Section 3(a)(b)).

•EO 11989, Use of Off-Road Vehicles (ORVs) on The Public Lands. This EO specifies that ORVs may not be used without special use and location designation.

•EO 11990, The Protection of Wetlands. This EO, dated 24 May 1977 and amended by EO 12608, dated 9 September 1987, implements NEPA. Under this EO each Federal agency must provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Each agency, to

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the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds:
1.that there is no practical alternative to such construction
2.that the proposed action includes all practical measures to minimize harm to wetlands that may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors (Section 2(a)).

Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands (Section 2(b)).

• The Convention on Wetlands of International Importance Especially as Waterfowl Habitat. This Convention was created on 2 February 1971, in Ramsar, amended by Paris Protocol of 3 December 1982, and entered into force for the United States on 18 December 1986. Each country must promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands and provide adequately for their wardening (Article 4, para 1). The contracting countries must promote the training of personnel competent in the fields of wetland research, management, and wardening (Article 4, para 4). Those countries that are Contracting Parties to the convention agreed [Revised October 2002]:
1.wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable
2.the progressive encroachment on and loss of wetlands now and in the future should be stemmed
3.waterfowl in their seasonal migration should be regarded as an international resource
4.conservation of wetlands and their flora and fauna can be ensured by combining far-sighted national policies with coordinated international action.

•The North American Wetland Conservation Act. This act (PL 101-233), dated 13 December 1989, was promulgated to conserve North American wetland ecosystems and waterfowl and the other migratory birds and fish and wildlife that depend upon such habitat. The act encourages partnership among public agencies and other interested to:
1.protect, enhance, restore, and manage an appropriate distribution and diversity of wetland ecosystems and other habitats for migratory birds and other fish and wildlife in North America
2.maintain current or improved distribution of migratory bird populations, and
3.sustain an abundance of waterfowl and other migratory birds consistent with the goals of the North American Waterfowl Management Plan and the international obligations contained in the migratory bird treaties and conventions and other agreements with Canada, Mexico, and other countries.

•EO 12088, Federal Compliance with Pollution Standards. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" were revoked by EO 13148 [Revised October 2002].

•EO 12962, Recreational Fisheries. This EO, dated 7 June 1995, mandates that Federal agencies, to the extent permitted by law and where practicable, improve the quality, function, and sustainable productivity and distribution of U.S. aquatic resources for increased recreational fishing opportunities. It also established the National Recreational Fisheries Coordination Council.

•EO 13112, Invasive Species. This EO, dated 3 February 1999, addresses the prevention of the introduction of invasive species and provides for their control and minimization of the economic, ecological, and human health impacts the invasive species causes. The EO establishes the Invasive Species Council, which is responsible for the preparation and issuance of the National Invasive Species Management Plan, which details and recommends performance-oriented goals and objectives and specific measures of success for Federal

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Agencies [Added April 1999].

•EO 13158, Marine Protected Areas. This EO, dated 26 May 2000, mandates strengthening the management, protection, and conservation of existing marine protected areas (MPA) and establishment of new or expanded MPAs; the development of a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems and the Nation's natural and cultural resources; and the avoiding causing harm to MPAs through federally conducted, approved, or funded activities [Added July 2000].

•EO 13186, Responsibilities of Federal Agencies To Protect Migratory Birds. This EO, dated 10 January 2001, directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. The EO requires that Each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 yr, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) that shall promote the conservation of migratory bird populations. Under this EO, the SOI will establish the interagency Council for the Conservation of Migratory Birds (Council) to oversee the implementation of the EO [Added April 2001].

•EO 13195, Trails for America in the 21st Century. This EO, dated 18 January 2001, mandates that Federal agencies will, to the extent permitted by law and where practicable--and in cooperation with Tribes, States, local governments, and interested citizen groups--protect, connect, promote, and assist trails of all types throughout the United States [Added April 2001].

•EO 13352, Facilitation of Cooperative Conservation. This EO, dated 26 August 2004, requires that the Secretaries of the Interior, Agriculture, Commerce, and Defense and the Administrator of the Environmental Protection Agency shall, to the extent permitted by law and subject to the availability of appropriations and in coordination with each other as appropriate:
1. carry out the programs, projects, and activities of the agency that they respectively head that implement laws relating to the environment and natural resources in a manner that:
a. facilitates cooperative conservation;
b. takes appropriate account of and respects the interests of persons with ownership or other legally recognized interests in land and other natural resources;
c. properly accommodates local participation in Federal decisionmaking; and
d. provides that the programs, projects, and activities are consistent with protecting public health and safety;
2. report annually to the Chairman of the Council on Environmental Quality (CEQ)on actions taken to implement this order; and
3. provide funding to the Office of Environmental Quality Management Fund (42 U.S.C. 4375) for the Conference for which section 4 of the order provides.
The term "cooperative conservation" means actions that relate to use, enhancement, and enjoyment of natural resources, protection of the environment, or both, and that involve collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals [Added October 2004].
•The Coastal Zone Management Act of 1972. This act (16 USC 1451-1464, last amended in November 1990), is the Federal legislation that governs the preservation and management of coastal waters in the nation. In relation to coastal zones, the national policy is (16 USC 145):
1.to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations
2.to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development
3.to encourage the preparation of special area management plans which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including

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those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making
4.to encourage the participation and cooperation of the public, state and local governments, and interstate and other regional agencies, as well as of the Federal agencies having programs affecting the coastal zone, in carrying out the purposes of this act
5.to encourage coordination and cooperation with and among the appropriate Federal, state, and local agencies, and international organizations where appropriate, in collection, analysis, synthesis, and dissemination of coastal management information, research results, and technical assistance, to support state and Federal regulation of land use practices affecting the coastal land ocean resources of the United States
6.to respond to changing circumstances affecting the coastal environment and coastal resource management by encouraging states to consider such issues as ocean uses potentially affecting the coastal zone.

•The Federal Noxious Weed Act of 1975. This act, Public Law 93-629 (7 U.S.C. 2801 et seq.; 88 Stat. 2148), states that no person is permitted to move any noxious weed identified in a regulation into or through the United States or interstate, unless such movement is (42 USC 2803):
1.from Canada, or authorized under general or specific permit from the Secretary [of Agriculture]
2.made in accordance with such conditions as the Secretary may prescribe in a permit and in regulations to prevent the dissemination into the United States, or interstate, of such noxious weed.

•Hunting, Fishing, and Trapping on Military Lands. This law (10 USC 2671, PL86-337) requires that all hunting, fishing, and trapping be in accordance with the fish and game laws of the state in which it is located, and that appropriate state licenses can be obtained for these activities. State license do not substitute for Federal facility permits that may also be required.

•Timber Sales on Military Lands. This law (10 USC 2665, PL 86 -717) requires that projects be developed and maintained to encourage, promote, and assure adequate and dependable future resources, including supplies of forest products. The forest lands will be administered to increase the value of project lands for recreation and wildlife, and to promote ecological conditions by following accepted conservation practices.

•Clean Water Act (CWA). Section 404 of this act (33 USC 1344) requires that all discharges of dredged and fill material in the waters of the United States, including wetlands, meet the requirements of USEPA's 404(b)(1) guidelines (40 CFR 230) and obtain water quality certification from the state (33 USC 1341) unless exempted by Congress through implementation of Section 404(r).
•EO 13443, Facilitation of Hunting Heritage and Wildlife Conservation – The purpose of this EO, dated 16 August 2007, is to direct Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat [Added October 2007].

Natural Resource Management C. State/Local Regulations
For information on regulations in specific states, see the State Supplements to TEAM Guide.
States develop lists for their local threatened or endangered species in addition to the Federal lists.
States develop regulations and management practices (MPs) for the protection of surface waters, coastal zones, wetlands, and the prevention of nonpoint source pollution.
States also establish regulations governing hunting and fishing activities.

Training Requirements

Personnel assigned duties in natural resources are required to have the appropriate knowledge, skills, professional training, and education to carry out their responsibilities. (DoDI, 4715.3, para 4.1.10)[Added December 1996, Revised April 2004].

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Installation with listed species or critical habitat, training or testing directorates, will have a mandatory ongoing training program for personnel with potential contact with listed species or their habitats. (AR 200-3, para 11-10)[Revised February 1996].

Installations are required to coordinate environmental training in order to conserve resources and avoid unnecessary duplication. (AR 200-1, para 15-13)[Added October 2004].

Awareness

EMD Web Page
The Natural Resource Web page begins at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/NaturalRes/NaturalRes.html
Terry Hazle checked the Natural Resource Web pages and determined they are adaquate for environmental awareness.

Newspaper:
Title: Huntsville Center Helps Reduce Excess Buildings
Date: 28 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\039.pdf

Title: Arbor Day (18 March 2010)
Date: 12 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\001.pdf

Title: Tree Has Roots to Sir Isaac Newton's Apple
Date: 24 March 2010
Location: T:\DATA\Correspondence\EMS Traing Documents\006.pdf

Title: Hunting Regulations Revised for Increased Safety
Date: 31 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\012.pdf

Title: Youngsters Get Eyeful during Earth Day Event
Date: 28 April 2010
Location: T:\DATA\Correspondence\EMS Training Documents\014.pdf

Title: Youngsters Try Their Hands at Interactive Earth Day
Date: 27 April 2011
Location: T:\DATA\Correspondence\EMS Training Documents\052.pdf

Title: Foundation Nurtures Support for Tree Planting
Date: 23 February 2011
Location: T:\DATA\Correspondence\EMS Training Documents\053.pdf

Title: Rite of Spring
Date: 9 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\054.pdf

Title: DoD 2011 NPLD Project - Upgrades to Wetland & Cultural Center, RSA
Date: 3 November 2011
Location: T:\DATA\Correspondence\EMS Training Documents\071.pdf

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help

understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Intregrated Natural Resources Management Plan

Required Permits

Required Plans

Intregrated Natural Resources Management Plan
Erosion Control Plan
•Bird Animal Strike Hazard Plan
•Land Management Plan
•Fish and Wildlife Management Plan
•Invasive Species Management Plan
•Fire Protection Plan
•Annual Prescribed Burning Plan

Required Records

Natural Resource Management
• Environmental Impact Statement/Assessments
• Master Plans
• Land Management Plan
• Fish and Wildlife Cooperative Agreement
• Outdoor Recreation Cooperative Agreement
• Forest Management Plan
• Grounds Maintenance Contracts
• Agricultural and Grazing Lease Contracts
• Threatened and Endangered Species Survey
• Environmental Protection Technical Specifications
• MOA or MOUs with other agencies
• Pesticide Management Plans
All natural resource related permits

Records To Review in Addition to Those Listed in TEAM Guide

•Natural Resources Management Plan
•Agricultural and Grazing Lease Contracts, and Land Use Plans
•Natural Resources Annual Work Plans and Approvals
•Government-Owned Contractor-Operated (GOCO) Maintenance Plan
•Outdoor Recreation Plan
•Outdoor Recreation Cooperative Agreement
•Budget Documents (DD 1383 report, Facilities Engineers Annual Work Plan)
•Biological Inventory Reports

Monitoring/Measuring Requiremens

Sikes Act and other natural resource laws and regulations monitoring by Natural Resource and Environmental Management Division Employees is conducted in order to ensure compliance.

NEPA follow-up monitoring by Natural Resource and Environmental Management Division Employees is conducted on a case-by-case basis to insure compliance with required protocol stipulated in NEPA documents.

Calibration

What Significant Impacts Are

A single or many similar projects which would remove an area or areas that provide

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irreplaceable foraging, resting, or reproductive habitat on the installation would be considered a significant impact to the environment because of harm to wildlife species for Redstone Arsenal only. If this is the case then the next thing would be to look at the effect from the perspective of Madison County then Alabama then the US.

Any action that is not in accordance with the RSA INRMP could cause a significant environmental impact and mitigation should be investigated.

Responsible Person(s)

From the team guide

•ICs are ultimately responsible for managing natural resources in an effective manner to preserve biodiversity and perform ecosystem management such that the mission is not adversely impacted. The IC is responsible for programming funds for natural resources management.

•The Environmental Coordinator (EC) is responsible for identifying funding requirements, supervising, controlling, and managing installation natural resources, including plant and animal species.

•Directorate of Plans, Training, Mobilization, and Security (DPTMS) is responsible for resourcing the ITAM program.

•Provost Marshal is responsible for enforcing requirements to protect natural resources. This responsibility may be assumed by Game Wardens at certain installations.

•The Natural Resources Management Professional is responsible for preparing, updating, and implementing management plans and cooperative agreements, budgets, and the annual endangered species report to the maximum extent practicable. On installations without a full-time Natural Resources Management Professional, these duties could be assigned to the environmental coordinator (EC) or community planner.

Resources

FY 2010
Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38,539

LABOR REQUIRED:

Implementing INRMP (OMA)-- 2.15 FTE - 4012 hours $120,999

Supervision, planning, (OMA) .10 FTE - 187 hours $ 5,628

OMA GS LABOR 2.25 5018 hours $ 165,166

GIS Support: -- .125 FTE - 234 hours $ 13,168
OMA CONTRACT LABOR HOURS 234 $ 13,168

SUSTAINABILITY:
Prescription Fire, wildlife management and ag support
Technician Support (Forestry, Ag Wildlife)2.5 FTE - 4,665 hours $ 85,000

Supplies And Equipment (OMA) $20,000 TOTAL $ 20,000
Supplies and Equipment (Ag, Wildlife) $40,000

Stewardship:
Silvopasture research for feasibility of restoring native ecosystems at RSA $100,000

Justification for Prescription Fire, Wildlife Management, Ag Support: Technician Support ($

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85,000):
Contract labor is required as there are more demands for natural resource management than EMD has civil service positions to cover. The Army mission is to manage natural resources on RSA to assure good stewardship of public lands entrusted to the care of United States Army. Federal laws and regulations, including the Sikes Act Improvement Act, Endangered Species Act, and AR 200-1 require that fish and wildlife resources are maintained and enhanced in manners consistent with both accepted scientific practices and military mission requirements. EMD personnel are charged with supporting Army program objectives and can only do so with the support of contract labor in the Wildlife and Agricultural Programs. Prescribed fire is used as a management tool on an annual basis at Redstone Arsenal to reduce the risk of wildfire from military training related to usage of flares, tracers, and explosives.

GIS Support Justification ($13,168):
The GIS working group in Redstone Arsenal's EMD is responsible for the transition from the use of USGS topographic quadrangle maps to the use of databases to collect, track, and analyze data. The system allows Cultural/Natural Resource (CNR) Branch Managers to conduct preliminary reviews for proposed construction projects and mission actions. Proposed project locations are created as shape files which can then be overlain with natural, cultural and other environmental resource data layers in a map document. The GIS also allows CNR managers to work with proponent organizations in the early stages of a project to incorporate existing environmental constraints into the design. GIS allows EMD personnel to better manage natural resources without compromising the Army mission. Shape files that are maintained as natural resource management tools include hunting, fishing and trapping areas, wildlife openings and food plots, active agricultural outleases, ecologically sensitive areas, land vegetation areas, proposed burn areas, and wildlife management areas. Loss of funding for GIS support will obstruct the ability for natural resource managers at Redstone Arsenal to incorporate technology into their decision making process, therefore hindering the future growth and development at Redstone Arsenal.

Justification for Supplies and Equipment (Ag & Wildlife) ($20,000):

The Army mission is to manage natural resources on RSA to assure good stewardship of public lands entrusted to the care of United States Army. It is federal law (Sikes Act, AR 200-1, Endangered Species Act, Clean Water Act, National Environmental Policy Act) to maintain and enhance fish and wildlife resources at Redstone Arsenal. In order to do so, funding must be held in place to acquire and retain supplies and equipment in the Wildlife and Agricultural Programs.

Funding for supplies and equipment for natural resource management is often acquired from several sources, all of which continue to shrink in size in times of budget reductions. Management of wildlife game species is funded by the sale of hunting, fishing, and trapping permits (21X5095) at Redstone Arsenal, however these sales continue to shrink as the population of hunters in society dwindles. Additional funding for wildlife related projects are at times derived from the Agricultural Outlease Program. Yet, due to RSA mission changes, the amount of acreage in the outlease program has decreased over the last five to six years, accompanied by a loss of annual cash revenue. This trend is not expected to change in the future due to anticipated growth and development at Redstone Arsenal.

Natural resource management activities require funding for supplies and equipment that may overlooked by those not familiar in this field. Management of nuisance animals becomes necessary when beavers create dams, flooding training areas and potentially damaging infrastructure. Hip waders, rakes, and other equipment is needed to trap and remove these animals. Prescribed burning is used to reduce fire hazards on test ranges; fire retardant suits, gloves, hats, equipment, and vehicles are necessary to accomplish those tasks. Agricultural fields that are currently not under lease must still be maintained, requiring farm equipment and fuel.

Justification for Silvopasture research for feasibility of restoring native ecosystems at

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RSA ($100,000):
This proposed study seeks to compare and contrast impacts on tree and stand dynamics for two popular southern pine species, shortleaf (Pinus echinata Mill.) and loblolly (Pinus taeda), in silvopasture systems. Propose to examine how agroforestry techniques impact native understory establishment, wildlife habitat, the use of fire vs. herbicide, and soil quality. In addition, this research will aid in the development of management techniques and publications to assist natural resource managers at Redstone Arsenal and in the private sector with implementation of silvopasture systems. This study will not only provide a functional and educational analysis of a system not readily utilized or documented in this region, but will also allow for the coordination and creation of relationships between numerous academic/professional organizations and government agencies.

Sustainability

Consequences

Non-action on any of the described goals will result in adverse impacts to management of natural resources and to the mission of Redstone Arsenal.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need to update on how we did on meeting the targets.
Need to set 2012 targets.
Are no permits required for natural resources management? If true, write it.
Write - No equipment to calibrate.
What needs to happen for Natural Resources to sustain the mission; the community and the environment?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
19	**Pest Management**	Greg Hicks

Discussion

Pest Management is an environmental element of real property management which is a service provided by the US Army Garrison - Redstone. There are laws and regulations that apply to Pest Management. Redstone Arsenal expends resources on Pest Management. Pest Management is a significant environmental aspect to be managed as part of the Redstone Arsenal Environmental Management System.

Impacts or possible impacts

- Expose People, plants and animals to toxic contamination.
- Need for proper and appropriate facilities
- Legal requirements for tracking, reporting
- Possible cleanup requirements
- Emergency planning necessary

Goals

Comply with laws and regulations

1. Monitor and control pests that pose a threat to the health and safety of the installation population
2. Maintain current pest management plans
3. Minimize the use of pesticides through appropriate surveillance mthods and programs
4. Ensure that all pesticide applicators are properly trained and certified
5. Develop and enforce measures to properly store and safeguard pesticides and pesticide application equipment for installation pesticide security
6. Ensure all pesticide waste is properly disposed.

Measurable Targets

Review of 100% of pesticide work orders (ongoing). PMC, COR

Inspect Golf course pesticide operation and storage facilities before September 30, 2009 (completed 03/09). PMC

Review and update IPMP annually by December 30, 2009. PMC

Compile and review pesticide application records for the installation to meet annual AEC data call. PMP, COR

Inspect pesticide contractor operations to provide a statistically valid sample each year of contract operation to ensure that pest management contractors are implementing integrated pest management as required by the IPMP. COR

Inspect contractor mosquito monitoring operations and monitoring data to determine where and when aerial spraying for mosquitoes may be approved each mosquito season. COR

Inspect food services (sample completed by IPMP 03/09)(ongoing by veterinary services technician)

Inspect commissary (completed 03/09)(ongoing by veterinary services technician)

Complete rewrite of Integrated Pest Management Plan by June 30, 2009 (completed and sent to AEC for review 6/09) (reviewed and accepted draft from AEC 3/10).

Letters of Instructions

Legal Requirements

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

This act deals with the sale, distribution, and use of pesticides and provides EPA with the authority to oversee the registration, distribution, sale and use of pesticides. EPA was given authority under FIFRA not only to study the consequences of pesticide usage but to

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also require users (farmers, utility companies, and others) to register when purchasing pesticides. The Act applies to all types of pesticides, including insecticides, herbicides, fungicides, rodenticides, and antimicrobials. The only part of the federal regulations that apply to the project is 40 CFR 171 Certification of Pesticide Applicators.

Certified applicator, etc.

(1) Certified applicator The term certified applicator means any individual who is certified under
FIFRA 4 [136a-l]' of this title as authorized to use or supervise the use of any pesticide which is
classified for restricted use. Any applicator who holds or applies registered pesticides, or use2
dilutions of registered pesticides consistent with subsection (ee) of this section, only to provide
service of controlling pests without delivering any unapplied pesticide to any person served is not
deemed to be seller or distributor of pesticides under this subchapter.

(2) Private applicator The term private applicator means a certified applicator who uses or supervises the use of any pesticide which is classified for restricted use for purposes of producing any
agricultural commodity property owned rented by him or his employer or (if applied without compensation other than trading of personal services between producers ofagricultural commodities)
on the property of another person.

(3) Commercial applicator The term 'commercial applicator means an applicator (whether or not
he is a private applicator with respect to some uses) who uses or supervises the use of any pesticide
which is classified for restricted for any purpose or on any property other than as provided by
paragraph (2).

(4) Under the direct supervision of a certified applicator Unless otherwise prescribed by its
labeling, pesticide shall be considered to be applied under the direct supervision of certified
applicator if it is applied by competent person acting under the instructions and control of a
certified applicator who is available if and when needed, even though such certified applicator is not
physically present at the time and place the pesticide is applied

(a) Requirement of Registration

Except as provided by this Act, no person in any State may distribute
or sell to any person any pesticide that is not registered under this Act. To the extent necessary to prevent
unreasonable adverse effects on the environment, the Administrator may by regulation limit the
distribution, sale, or use in any State of any pesticide that is not registered under this Act and that is not
the subject of an experimental use permit under PIERA 5 [Bfic] or an emergency exemption under
FIERA 18 [136p].

(2) State certification If any State, at any time, desires to certify applicators of pesticides, the Governor
of such State shall submit State plan for such purpose. The Administrator shall approve the

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plan
submitted by any State, or any modification thereof, if such plan in his judgment-
(A) designates a State agency as the agency responsible for administering the plan throughout the
State;
(B) contains satisfactory assurances that such agency has will have the legal authority and qualified
personnel necessary to carry out the plan;
(C) gives satisfactory assurances that the State will devote adequate funds to the administration of the
plan;
(D) provides that the State agency will make such reports to the Administrator in such form and
containing such information as the Administrator may from time to time require; and
(E) contains satisfactory that State standards for the certification of applicators of pesticides conform with those standards prescribed by the Administrator under paragraph (1). Any State certification program

Federal Insecticide Fungicide and Rodenticide Act 136r-1. Integrated Pest Management

The Secretary of Agriculture, in cooperation with the Administrator, shall implement research, demonstration, and education programs to support adoption of Integrated Pest Management. Integrated Pest Management is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. The Secretary of Agriculture and the Administrator shall make information on Integrated Pest Management widely available to pesticide users, including Federal agencies. Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities.

Pesticides classified for restricted use, 40 CFR 152.175

E.O. 12088, Federal Compliance with Pollution Standards, October 13, 1978
This EO requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities the agency funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. [Replaced with EO 13148]

Army Regulation 200-1, Environmental Protection and Enhancement

It is the policy of the Army to:

1. Protect real property and the health of soldiers, civilians, and family members from pests through use of Integrated Pest Management Strategies
2. Reduce the use of chemical pesticides
3. Reduce environmental risks from pesticides through proper storage, handling, application, and disposal of pesticides.

DoD Regulation (DoDR) 4145.19-1 Storage and Materials Handling

Chapter 5, Section 4 addresses the storage and handling of compressed gases and other hazardous commodities

DoD Instruction (DoDI) 4150.7, DoD Pest Management Program
Implements policy, assigns responsibilities, and prescribes procedures for the DoD Integrated Pest Management (IPM) Program. Details the DoD Measures of Merit for Pest

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Management.

Measure of Merit 1: IPM Planning. Through the end of Fiscal Year 2010 100 percent of DoD installation will maintain IPM plans that are reviewed and approved by a DoD-certified pest management consultant and annually updated by the installation pest management coordinator.
Measure of Merit 2: Pesticide Use Reduction. Through the end of FY 2010, the Department of Defense will maintain the reduction goal in annual pesticide use by both government and contractor pesticded apllicators on DoD Installations. This reduction goal is set at an average of the FY 2002 and 2003 usage, which is 389,000 lbs of active ingredient (45 percent of the original 1993 baseline - a 55 percent reduction).
Measure of Merit 3: Pesticide Applicator Certification Through the end of FY 2010, 100 percent of DoD pesticide applicators will be certified. Direct hire employees have a maximum of 2 years to become certified after initial employment. Contracted employees shall have appropriate State of host-nation certification in the appropriate categories at the time the contract is let.

DoD 4150.7-P, DoD Plan for the Certification of Pesticide Applicators. Establishes the policies, criteria, and curriculum for granting DoD certification of pesticide applicators at DoD installation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) jurisdiction. The United States Environmental Protection Agency (USEPA) has approved the DoD Plan. The DoD plan does not apply to the civil works functions of the Army Corps of Engineers. It also does not apply to state-owned or state-operated (funded) installation or facilities that the National Guard uses part-time or full-time.

Training Requirements

Pesticide Application - The DoD is an USEPA approved Federal Certifying Agency under Federal Insecticide Fungicide and Rodenticide Act. Therefore the Department of Defense has an US Environmental Protection Agency approved training and pesticide application certification plan, DoD Plan for the Certification of Applicators of Restricted-Use Pesticides, 1985, that allows the DoD, in the same manner as states, to specify more stringent training, handling, recordkeeping and other requirements than found in Federal regulations. Under this plan, DoD personnel can be trained and certified under the DoD plan are not required to have state certification. The DoD Plan does not apply to the civil works functions of the Army. But contractors used for pest management must have current state certification for the categories of applications being performed. [Revised October 2002].

Pest management and disease vector control during military contingency operations, readiness training exercises, and deployments are required to follow specific parameters. (DoDI 4150.7, Enclosure 4, para E4.1.9; AR 200-5,para 1-8b, 1-9d, 1-13, 2-8b(5), 2-10e, 2-11f, Appendix C-9n)[Citation Revised June 1998, Citation Revised October 2001].

Installation pest management personnel are required to meet specific training and certification requirements. (DoDI 4150.7, para. 5.3.22.4 and Enclosure 4, para E4.1.5.2, E4.1.5.3, E4.1.5.2.5, and E4.1.5.2.6; AR 200-05, 1-4a(3), 1-11e, 2-8, 2-9, 2-12c(3), 2-16b(2), and Appendix B-2d(2))[Revised April 2000, Revised October 2001].

Agricultural employers must provide pesticide safety training for certain workers. (40 CFR 170.104(a), 170.130(a), and 170.130(b))[Added April 2000, Reviewed September 2000].

Pesticide safety information training is required to meet specific parameters. (40 CFR 170.104(a), 170.130©, and 170.130(d))[Added April 2000, Reviewed September 2000, Citation Revised July 2007].

Handlers must satisfy certain safety training prior to performing handling tasks. (40 CFR 170.204(a) and 170.230)[Added April 2000, Reviewed September 2000].

Integrated Pest Management Coordinator and Quality Assurance Evaluators will have DOD PEST MGT QUALITY ASSURANCE EVALUATOR COURSE 6H-F33/322-F31.

Awareness

EMD Web Page

The Pest Management Web page is at link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/NaturalRes/pest.html
Terry Hazle checked the page on 11/14/2011 and determined the page to be adaquate for Environmental Awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

_____

Installation Pest Management Plan

Federal Insecticide Fungicide and Rodenticide Act

Army Regulation 200-1

Required Permits

License Requirements

AL or reciprocal state certification for pesticide applicators
-contractor personnel

DoD Pest Management Certification
-IPMC

DoD Integrated Pest Management Coordinator/Quality Assurance Evaluator
-IPMC
-Contracting Officer Representative

Required Plans

Installation Pest Management Plan which is reviewed and updated as necessary by December 30, 2009. This plan is developed and updated by the Pest Management Coordinator and is maintained by the Cultural and Natural Resources Branch of the Environmental Management Division. The draft plan will be reviewed by Army Environmental Command (command consultant) revised and sent up to be signed by the garrison commander and a representative of the command consultant.

Required Records

Work orders for pesticide application
-all grounds maintenance work orders for pesticide application will be reviewed by the IPMC

Pesticide application data Form numbers
-lessees, contractors, and government employees will keep up with pesticide usage on a DD Form 1532
-IPMC will turn in a Pesticide Use Proposal (PUP) and a Plan Update Form (PUF) each FY to the command consultant for review to annually update the Integrated Pest Management Plan and the pesticides approved for use on the installation.

NEPA Documentation for Federal Actions

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Records of Environmental Consideration (REC's), Environmental Assessments (EA's), Environmental Impact Statements (EIS's), Job Order Requests (JOR's), and Minor Service Orders (MSO's) will be reviewed by the IPMC to determine compliance with National Environmental Policy Act and other relevant federal laws and regulations.

Monitoring/Measuring Requiremens

Monitoring of pesticide applications as per work orders conducted by pest contract COR
-COR JoAnn Miller
-Contractor MHM Pest Control Services

Inspection of Commissary and Food Preparation areas by Veterinary Services
Veterinary Service Technician - Sgt. Rodriguez

Monitoring of mosquito populations to justify aerial spraying
-Pest Control Contractor

Monitoring of structures annually by contractor for termite activity
-Initial inspection and treatment done by the subcontractor of the construction project manager
-follow up inspections and treatments by IPMC and subcontractor

Annual monitoring of pesticide materials applied from all sources on the installation
-IPMC through records keeping DD Form 1532

Monitoring of licensing and application training for all personnel applying pesticides on the installation
-IPMC

NEPA Follow-On Monitoring
-IPMC
-Environmental Personnel

Calibration

All pesticide dispersal equipment must be calibrated to the manufacturers specifications.

What Significant Impacts Are

Pest Infestations potentially causing or currently causing adverse health conditions of Military, employees, or family members.

Improper use, storage, mixing, handling, or disposal of pesticides contributing unnecessarily to hazardous materials inventory

Responsible Person(s)

•Installation Commanders will comply with applicable Federal, State, and local pesticide and pest management regulations; ensure adequate funding for the installation pest management program requirements; approve the Installation Pest Management Plan; ensure pest management personnel who perform pest management operations meet DoD training standards and designate a qualified Installation Pest Management Coordinator [Added October 2001].

•Preventive Medicine Services (PMS) will [Revised October 2001]:
* survey the medically important pest population and analyze the impact on the overall health of the installation
* conduct the installation's surveillance program for medically important pests
* obtain timely identification and susceptibility of pests to pesticides as necessary and report to the DPW/Installation Pest Management Coordinator
* perform the medical surveillance of pesticide applicators.

•The Installation Pest Management Coordinator (IPMC) is designated by the installation commander as the primary staff proponent with responsibilities that include: preparing the pest management plan, ensuring complete and accurate pest management program records and reports, to include training qualifications of installation pest management personnel, pest management operations and pesticide use, and pest management services contracts for all

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installation pest management activities and operations (to include tenant activities). The Major Army Command Consultant will specify the background and training requirements for the IPMCs (AR 200-5, paragraph 2-8b(3)) [Revised October 2001].

Vet services
-Inspect food served
-inspect food at commissary for pest problems
-enoforce recalls for food stuffs
-monitor and survey for pest problems in the Horse stables.

Resources

Adminstration Overhead Cost (Chief's Office) -			137 Hours	- $ 6,423
Program Preparation/ Revision of Pest Management Plan/Approval of Pesticides for Installation Use	.25	manyear -	467 hours	- $14,692
Review of Use Work Orders and Problems	.2	manyear -	374 hours	- $11,280
Supervision, Review, Project Planning	.1	manyear -	187 hours	- $ 5,640
		GS Hours	1,165	$35,137
Database Management		-	20 hours	- $1,126
		Contract	20	$ 1,126

Sustainability

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Measureable targets need updating (need new targets and enter how they did on existing targets).
Did we do anything to make people aware of us having a pest management program?
Under required permits, which ones do we have, when did we get and when to update.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
5	**Non-Hazardous Waste Management**	Mark Subido

Discussion

Trash, when not properly disposed, can enter into the waterways and affect wildlife. Both the Federal government and the Alabama Department of Environmental management have enached laws and regulations for management of hazardous waste; therefore, non-hazardous waste will be managed under this Environmental Management System.

The SWARWeb report for 2012 was submitted on 10/1/2012.

SWARWeb data for the first two quarters of 2013 has been submitted.

SWAR report has been submitted for FY 2014 to IMCOM in order to comply with the annual reporting.

Impacts or possible impacts

Litter
Ground Contamination
Releases to the Environment
Violation of Regulations - fines
Consuming the capacity of the landfill before projected dates.

Goals

Reduce the amount of solid waste going into the landfill
The following is a summary of the solid waste-related goals outlined in EO 13423:
1. Building Performance: Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
2. Procurement: Expand purchases of environmentally-sound goods and services, including biobased products.
3. Pollution Prevention: Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials from top priority list.
Personnel.
- The permittee shall maintain adequate personnel to ensure continued and efficient operation of the facility.

The lanfill continues to get excellent scores from the State inspectors.

Measurable Targets

Diversion of 40% of Municiple Solid Waste by 2010.

Diversion of 50% of C&D Waste by 2010.

Zero Solid Waste (no landfill, no incinerator) 31 DEC 2020
100% Recycling of the white paper stream by 1 JUN 2016
Transfer the removal/recycle of waste streams to the custodial contractors by 1 JUN 2018
Electronic Ewaste program identified and information dessiminated- DLADS continues to spearhead the program
Environmental Coordinators are trained by PM quarterly about solid waste streams.
Develop a list of all waste streams and identify major players on RSA 2 JAN 2018

From Integrated Solid Waste Mangement Plan, Feb 2010:

1. 100% copliance with Affirmative (Green) Procurement requirements by 2015.
2. Reduce the total amount of waste generated on a per capita basis by 2% per year between 2010 and 2020.
3. Divert 50% of non Construction/Demolition wastes from landfill by 2015 through 2020.
4. Divert 60% of construction and demolition debris form the solid waste stream by 2015 through 2020.
5. Increase the diversion of compostable and organic material from the waste stream.
6. Minimize Solid Waste collection frequency to lowest possible cost while maintaining sanitary conditons.

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Diversion rates are not being properly scored due to the non-communication between the contractors, the Corps of Engineers which has goals written into contracts, and the EMD which reports the numbers.

Letters of Instructions

Legal Requirements

•Resource Conservation and Recovery Act (RCRA) of 1976. This is the Federal law that governs the disposal of solid waste. Subtitle D of this act, as last amended in November 1984, Public Law (PL) 98-616, 42 U.S. Code (USC) 6941-6949a, establishes Federal standards and requirements for state and regional authorities respecting solid waste disposal. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941).

•The Solid Waste Disposal Act of 1965, as amended. This act requires that Federal facilities comply with all Federal, state, interstate, and local requirements concerning the disposal and management of solid wastes. These requirements include permitting, licensing, and reporting.

•The Occupational Safety and Health Act (OSHA). The general purpose of this act is to assure, as much as possible, every individual working in the United States safe and healthful working conditions. The control of medical waste, including infectious and pathological waste, is one aspect of assuring safe and healthy working conditions.

•The Clean Air Act Amendments of 1990 (CAAA90). This act, Public Law (PL) 101-549 (42 U.S. Code (USC) 7401-7671q), is currently the Federal legislation regulating the prevention and control of air pollution. As a result of this act, regulations have been promulgated concerning the control, monitoring, and reporting of emissions from municipal solid waste landfills (MSWLFs).

•EO 12088, Federal Compliance with Pollution Standards. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 [Revised October 2002].

•Executive Order (EO) 13423, Strengthing Federal Environmental, Energy, and Transportation Management. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation's energy security and environmental performance by achieving goals outlined in the EO. This EO revokes the following EOs [Added July 2007]:
1. Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition of September 14, 1998;
2. Executive Order 13123, Greening the Government Through Efficient Energy Management of June 3, 1999;
3. Executive Order 13134, Developing and Promoting Biobased Products and Bioenergy of August 12, 1999, as amended;
4. Executive Order 13148, Greening the Government through Leadership in Environmental Management of April 21, 2000; and
5. Executive Order 13149, Greening the Government Through Federal Fleet and Transportation Efficiency of April 21, 2000.

Alabama Laws and Regulations:
Alabama is an "authorized" state, meaning that it is authorized by the EPA to administer

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state environmental law in lieu of most federal environmental laws. This is consistent with Alabama statutes that created ADEM, and which express legislative intent to have federal environmental laws administered at the state level. The scope of the Department's statutory authorities is listed below. These are the only laws under which ADEM can write regulations. Our laws are found under Title 22 of the Code of Alabama 1975.
Chapter 27 Solid Waste.

ADEM Regulations:
Division 13 Solid Waste Program -
http://www.adem.state.al.us/regulations/Div13/Div13eff93008.pdf
This Division is promulgated to establish criteria for the disposal of solid waste and the design, location, operation, closure and post-closure of landfill units.
The following are the plans incorporated in Chapter 335-13-9:
Solid Waste Management Plan - May 2008

Other Requirements:

AR 200-1 28 August 2007 - 10-2 Solid Waste

(1) 42 USC 6901, Subtitle D (as amended); PL 98-616; Paragraph a, Sections 6941-6949, Title 42, United States
Code (42 USC 6941-6949a, Subtitle D; as amended; Parts 239-258 and Part 261, Title 40, Code of Federal
Regulations (40 CFR 239-258 and 261); applicable FGS; and EO 13423.
(2) AR 420-49, chapter 3 defines the Army's policy for managing solid waste. This section of AR 200-1
supplements AR 420-49 by identifying environmental aspects of solid waste management.
(3) AR 415-15, appendix F, Item F-37, Army Disposal/Demolition Program, describes the Army requirement to
dispose of one square foot of facilities to offset each square foot of new construction added to the real property
inventory.
(4) DA Pam 40-11, chapter 4, Section 4-11 defines the Army's policy for managing regulated medical wastes.

Recycle Laws and Regulations
10 USC 2577. Disposal of Recyclable Materials
Resource Conservation and Recovery Act
32 Code of Federal Regulations (CFR) 172, Disposition of Proceeds from DoD Sales of Surplus Personal Property
40 CFR 246, Source Separation for Mateial Recovery Guidelines
Executive Order 13423, Strenthening Federal Environmental, Energy and Transportation Management
DoD Instruction 4715.4, Pollution Prevention
DoD Manual 4160.21-M, Defense Material Disposition Manual
OUSD (AT&L) Policy Memo, Qualified Recycling Program Guidance, 24 Apr 03
OUSD (AT&L) Policy Memo, DoD Environmental Management Systems (EMS), 2002.

Training Requirements

There are no legal training requirements under solid waste management regulations.

In February of 2010, ADEM proposed Rule 335-13-12, which was proposed to establish the procedures to be followed for the implementaion of a certification program for solid waste landfill operators. Based on the definition of "private landfill operator," Mr. Scott Storey, ADEM, indicated that Redstone Arsenal's landfill is not currently subject to the provisions covered in this proposed rule. See Draft ADEM Landfill Cert document in PM's c: drive, Memorandum for Record, dtd. 2 FEB 2010.

Awareness. As part of the NEPA project review process, any project that may require the use of RSA's landfill will have a passage in the review to assist the proponents. Typically the message will request the use of crushed concrete and gravel for substrata, request that excess spoils be sent to the RSA Landfill for reuse, and will state the

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necessity of obtaining a Material Certification Form and a delivery ticket.

Typically, because of LEED standards, the contractors are looking for a way to earn points to achieve a silver rating. This assists us in meeting our goals for diversion and recycling.

For Recycling, the PM has given briefings to assist with the recycling effort.
Attended the RSA Board of Directors - Installation Planning Board
EQCC - Sustainabilty () Recycling ()

A hand-out describing Redstone's recycling program is being given out at meetings and whenever bins are distributed.
Articles have been posted in the newspaper (Redstone Rocket)-
A few lines are dedicated in the Happenings section -

Awareness

Newspaper:
Title: Recycle Phonebooks
Date: 16 June 2010
Location: T:\DATA\Correspondence\EMS Training Documents\025.pdf

Title: Recycle Phonebooks
Date: 23 June 2010
Location: T:\DATA\Correspondence\EMS Training Documents\027.pdf

Title: Steam Plant Upgrade to Bring Energy Savings
Date: 14 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\034.pdf

Title: Remember to Wash Reusable Grocery Bags
Date: 21 July 2010
Location: T:\DATA\Correspondence\EMS Training Documents\037.pdf

Title: 'Be food Safe' with Reusable Grocery Bags
Date: 4 August 2010
Location: T:\DATA\Correspondence\EMS Training Documents\041.pdf

Title: Recycle Glass
Date: 10 November 2010
Location: T:\DATA\Correspondence\EMS Training Documents\043.pdf

Title: Recycling Paper
Date: 24 February 2010
Location: T:\DATA\Correspondence\EMS Training Documents\016.pdf

Title: Redstone Recycling
Date: 3 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\010.pdf

Title: Redstone Recycling
Date: 3 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\002.pdf

Title: Redstone Recycling
Date: 17 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\005.pdf

Title: Redstone Recycling
Date: 24 March 2010
Location: T:\DATA\Correspondence\EMS Training Documents\008.pdf

Title: Newspaper Recycling Suggestion Made

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Date: 26 May 2010
Location: T:\DATA\Correspondence\EMS Training Documents\021.pdf

Title: Dumpster Divers Have Worth While Experience
Date: 9 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\049.pdf

Title: Letter to the Editor - Post Generates Energy From Plastic
Date: 16 March 2011
Location: T:\DATA\Correspondence\EMS Training Documents\056.pdf

Title: Steam Energy Carries Heat to Arsenal
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\076.pdf

Communications

Operational Controls

The laws and the regulations are the most comprehensive controls for this aspect. The laws and regulations may require that additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

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Material Certification - DES Form 2435-R, Revised Mar 2010

Required Permits

Solid Waste Disposal Facility Permit
Permit number - 45-03
C & D Landfill Permit
Effective Date April 21, 2008
Expiration Date April 20, 2013
Effective Date February 6, 2014
New Expiration Date February 5, 2019

ADEM Materials Recovery/Recovered Materials Processing Facility Registration
Qualified Recycling Permit
Registration number - RF12514
Effective Date September 11, 2013

Required Plans

Intregrated Solid Waste Management Plan - updated October 2008; this plan is scheduled to be updated in October 2013 in accordance with regulations requiring updated plans.

Closure Plan - Solid Waste Management Facility Support Activities; Redstone Arsenal, Alabama, Contract DACA-96-D-0010, Delivery Order 0005, RSA EPA ID NO. AL7210020742; Corps of Engineers, Savanah District, April 1997 (Prepared by hodges, Harbin, Newberry & Tribble, Inc. Consulting Engineers, 484 Mulberry Street, Suite 265, Macon, GA 31201. *This plan was submitted to ADEM to meet the requirements of Code of alabama 1975 SS 22-27-3, 22-27-7. Issued November 18,1981, amended July 21, 1988; November 2, 1993. Section 335-13-4-20 Closure and Post-Closure. Section (2)(a) The owner or operator must prepare a written closure plan that describes the steps as necessary to close all existing and proposed landfill units at any point during their active life in accordance with the cover design requirements 335-13-4-.20 (2)(b). The owner or operator must submit the closure plan as

part of the permit application to the Department….
This requirement was met and submitted in the permit application that was granted and effective on October 9, 2001. (This plan is located in the bookcase at the Program Manager's location).

Operation Plan fo Construction/Demolition Waste, Solid Waste Management Facility Support Activities, Redstone Arsenal, April 1997.(This plan is located in the bookcase at the Program Manager's location).

Directorate of Environmental Management and Planning (DEMP) Standard Operating Procedure (SOP)Operation of Contstruction/Demolition Landfill (General), April 1997.(This plan is located in the bookcase at the Program Manager's location).

Required Records

From Permit
-Documentation of inspection and maintenance activity (These records are at the landfill.)
-Daily Volume Report (These records are maintained in the PM's records and at the landfill.)
-Personel Training documents and records (These records are maintained at the landfill.)
-Solid/Hazardous Waste Determinatiion Forms for Indrustrial Waste, and associated ADEM disposal approval correspondence for indrustrial waste and special waste.
-Groundwater monitoring records (PM's location)
-Explosives gas monitoring records (variance issued)(This information is in the permit. Copies are kept at the PM's location and at the landfill.)
-Copies of Permit and Application (PM's location and landfill)
-Copies of all variances granted by ADEM, including copies of all approvals of special operating conditions. (PM's location and landfill).

Quarterly Volume Report (prepared by Chugach and submitted to EMD, in corespondence log, on file at PM's location. It is sent in to ADEM NLT 10 days following the end of the quarter).

Monitoring and Corrective Action Report

Operating Record

The majority of documents for solid waste are maintained via EMD databases.

Monitoring/Measuring Requiremens

EPAS Checklist - Solid Waste (Landfill)
We have been granted a variance from required explosive gas monitoring.

•The following is a summary of the solid waste-related goals outlined in EO 13423:
1. Building Performance: Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
2. Procurement: Expand purchases of environmentally-sound goods and services, including biobased products.
3. Pollution Prevention: Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials from top priority list.

ADEM Checklist (Inspections as of 09)
Regulation
General Operational Requirements for Landfills
13-4.16(2)c(4) Explosve gas monitoring points located as required
13-4.17(1) Run-on system constructed and maintained
13-4.17(2) Run-off system constructed and maintained
13-4.17(3)On-site drainage structures constructed and maintained
13-4.19Access control measures adequate
13-4.21(1)(a)Operation as stipulated in the permit
13-4.21(1)(a)Current disposal cell certified by professional engineer
13-4.21(1)(b)Only approved waste streams accepted
13-4.21(1)(d)No unauthorized discharge or water pollution
13-4.21(1)(f)Are the scales operable

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13-4.21(2)(a)No open burning unless approved by ADEM
13-4.29(1)Records maintained as required; operating record available for review
Construction and Demolition and Industrial Landfill Requirements
13-4.31(1)(a)1.All waste covered weekly with 6-inches of soil
13-4.23(1)(b)All waste spread in <2 ft. thick layers; thoroughly compacted
13-4.23(1)(c)Waste confined to small area; on appropriate slope (>4:1)
13-4.23(1)(d)Operation as stipulated on the permit and in approved plans
13-4.23(1)(e)Site security adequate
13-4.23(1)(f)Proper sign located at the entrance
13-4.23(1)(h)Adequate personnel provided
13-4.23(1)(i)Adequate equipment provided
13-4.23(1)(k)Large empty containers >10 gallon rendered unsuitable for holding liquids
13-4.23(2)(a)Scavenging prohibited and salvaging controlled
13-4.23(2)(b)Litter controlled
13-4.23(2)(c)Completed areas properly closed
13-4.23(2)(d)All-weather access road to operating face of landfill
13-4.23(2)(e)Monitoring/treatment structures protected and maintained in good repair
13-4.23(2)(f)Records maintained on daily volumes; operating records available for review
13-4.23(2)(g)Vector control measures adequate

Federal Requirements (2009)
-Physical Features to Inspect
-•Resource recovery facilities
-•Incineration and land disposal sites (active and inactive)
-•Areas where nonhazardous waste is disposed
-•Construction debris areas
-•Waste receptacles
-•Solid waste vehicle storage and washing areas
-•Compost facilities
-•Transfer stations
-•Recycling centers

•Storage/Collection - All solid waste and materials separated for recycling must be stored so that it does not cause a fire, safety, or health hazard.
-Collection systems are required to be operated in a manner to protect the health and safety of personnel associated with the operation.
-All collection equipment is required to have a suitable cover to prevent spillage and be constructed, operated, and maintained adequately.
-Solid wastes or materials separated for recycling are required to be collected according to a certain schedule, and in a safe, efficient manner (40 CFR 243.200-1, 24------3.201-1, 243.202-1(a) through 243.202-1(c), 243.203-1, and 243.204-1) [Reviewed March 2000].

•Solid Waste Containers - Personnel should be periodically informed about materials that are prohibited from disposal in solid waste receptacles (MP).

•Open Dumping – Is there evidence of open dumping? 40 CFR 257 details the criteria for determining whether or not an activity would be considered an open dump for the purposes of state solid waste management planning under RCRA. See Appendix 9-1a for a list of the criteria that a facility or practice must meet in order for it to not be considered and open dump. [Reviewed March 2000].
•Municipal Solid Waste Landfills (MSWLFs) - MSWLFs must meet restrictions for location, the types of waste to be placed in them, emissions from the MSWLF, and the types of monitoring required. Limitations, design criteria, and closure requirements vary depending on whether it is a new or existing MSWLF (40 CFR 258 and 40 CFR 60.750 through 60.759) [Reviewed March 2000].

Records to Review
•Record of current nonhazardous solid waste management practices
• Estimated generation rates (Daily volume reports)
•Documentation of locations (map) and descriptions of all nonhazardous waste storage, and disposal sites

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•Records of operational history of all active and inactive disposal sites
•State and Federal inspection reports
Documentation of inspection and maintenance activities
•Environmental monitoring procedures or plans
•Records of resource recovery practices, including the sale of materials for the purpose of recycling
•Solid waste removal contracts and inspection records
•Operating record for onsite MSWLFs
• Ground water monitoring well data
• Surface water and leachate monitoring records
•Regional solid waste management plan
•Pollution prevention management plan
•Personnel training documents and records
• Copies of permit and applications
• Copies of variances granted by ADEM, including copies of all approvals of special operating conditions.
• Copies of quarterly reports
• Were reports submitted within 30 days of the end of the operating quarter?
• Did the average daily volume of waste disposed exceed 300 tons/day?

Verify that the State Director is notified when the above listed documents have been placed in or added to the operating record.

Waste Placement

• Verify that a facility or practice does not contaminate an underground drinking water source beyond the solid waste boundary or beyond a specified alternative boundary.
• Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through air emissions.
• Are water run-on, run-off controls designed according to specifications?
• Is the solid waste covered with 6 inches of earthen material or another approved material at alternative thickness at the end of each operating day or more frequently if necessary, in order to control disease vectors, fires, odors, blowing, litter and scavenging?
• Are the boundary markers present – facility to be identified with a sufficient number of permanent boundary markers that are at least visible from one marker to the next?
• Are layers spread two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional waste?

Inspections
Are random inspections being conducted?
Are records of the inspections of incoming loads kept and included in the operating record?

Security
Are there artificial and/or natural barriers, which prevent entry of unauthorized vehicular traffic to the facility?

Recycling
-Verify that a recycling program exists. Facilities should participate in any state or local recycling programs and reduce the volume of solid waste materials at the source whenever practical.
-Verify that high-grade paper is separated at source of generation, separately collected, sold for recycling. Businesses and other organizations employing over 100 office workers are required to recover high-grade paper.
-Residential facilities at which more than 500 families reside are required to recycle newspapers. (Currently we have 480 est. but the City of Huntsville recycles their wastes).
-Any facility generating 10 tons or more of waste corrugated containers per month is required to segregate or collect them separately for recycling (40 CFR 246.200-1 and 246.202-1) [Reviewed March 2000]. Recycle or use as an alternative energy source SO.25.2US (40 CFR 246.202-1)
-SO.10.5 US Solid wastes or materials separated for recycling are required to be collected

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according to a certain schedule (40CFR 243.100 (b), 243.100(i), and 243.203-1) [Revised January 2000; Reviewed March 2000; Revised January 2004]
-Verify that reusable or marketable materials are collected at regular intervals.
-Verify that there is a designated recycling coordinator.

Calibration

The Landfill Operator has the scales calibrated once every quarter as a best management practise to ensure that NASAs bills are correct. The once-a-quarter timeframe was selected based on the frequency of trucks crossing the scales. Currently, the scales is calibrated once a month. Last date of calibration was on 09/17/2014.

What Significant Impacts Are

Not following regulations for disposal of waste could lead to violation of law.

Regarding the landfill, any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of Code of Alabama 1975, Section 22-27-1 et.seq., as amended, is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application.

Based on the criterialisted in Title 40 CFR Part 246.200 to .202, Source Separation for Material Recovery, Redstone Arsenal is required to recycle hig-grade paper and corrugated container waste (QRP Binder, PM's location).

By not properly managing our solid waste, the space allocated in our landfill would be expended before its projected capacity date. Depending upon our management history, RSA may not be allowed to obtain a new permit for an additional landfill. If a permit were granted, an additonal landfill would consume valuable, in-demand land.

Violation of RCRA or related regulation would be a significant impact.

Responsible Person(s)

Garrison Commander Responsibilities per AR200-1
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant’s mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and

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monitor completion of
n. installation-wide corrective actions.
o. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.
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q. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14.
r. Maintain a public affairs program that encourages public involvement.
s. Ensure that the installation master plan incorporates environmental considerations.
t. Identify environmental requirements, forward through command channels, and maintain auditable records.
u. Execute the environmental budget to meet critical requirements.
v. Maintain an efficient and well-trained environmental staff.
w. Hold tenant units accountable for complying with the policies and standards of the installation.
x. Signs the Subpart D permits and applications

•The DPW is responsible for the operation of onsite landfills including site location and construction of onsite landfills. Additionally, they may perform or oversee solid waste collection and transportation. Composting facilities and landfarming activities are also operated by DPW.

The Chief, Environmental Management Division, supports the Garrison Commander in carrying out the following responsibilities.
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
n. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.12 AR 200-1 • 28 August 2007
o. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14, AR 200-1 • 28 August 2007
p. Work with public affairs office to encourages public involvement.

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q. Ensure that the installation master plan incorporates environmental considerations.
r. Identify environmental requirements, forward through command channels, and maintain auditable records.
s. Execute the environmental budget to meet critical requirements.
t. Maintain an efficient and well-trained environmental staff.
u. Work with tenants for compliance with the policies and standards of the installation.
v. Sign all correspondence on environmental matters.

The Chief, EMD, Compliance Branch is responsible for:
* Management of the Air Quality program.
* The collection of data required by all reporting requirements.
* Preparation of all reports under this aspect.
* Preparation of all permits under this aspect.
* Identifications of resources necessary to meet the goals of this aspect.
* Identification of all persons, by name and position, on Redstone Arsenal with responsibilities for compliance under this aspect.
* Auditing for compliance under the laws, regulations and other requirements of this aspects.
* Preparation of Corrective Action Plans for non compliance issues.

The EMD Non-Hazardous Waste Manager is responsible for:
* Oversight of the programs
* Completion of reports to show recycle commodity values and amounts
* Completion of the Solid Waste Annual Report (SWAR)
* Quality assurance of the products and work provided by the contractor (Chugach)

The Landfill Operator is responsible for:
* Completion of applicable reports
* Compliance with permitting requirements
* Safe operation
* Maintenance of historical informaiton and records (digital and physical) within regulatory requirements.

Recycling of tires is performed through DLADS.

Trash hauling is performed by Bmaak.

Resources

Adminstration Overhead Cost (Chief's Office) - 819 Hours - $38538
Branch Chief - 52 Hours -$2,949
Team Leader - 280 Hours -$15,884
Program Manager - 1560 Hours - $88,498
Environmental Database hours 80 hours - $4,000

Contracts required by Law or Permit:

C&D Landfill Monitoring - $44,000 (two events)

Estimated Cost for Recycling Operations Labor
1.2 man-hours on Chugach contract - 10000$100,000
1 on-call contractor* - 12,400.00

Landfill Permit Fee's - $2000

Sustainability:
3,200- training to stay current with regs

- Funding requirements for this program can be found in the EMD's EPR database.

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Currently, we employ the following technologies for waste management. The accompanying resources are detailed.

Concrete Recycling. Concrete debris from demolition is taken and stockpiled at the landfill. When a large quantity accumulates, a concrete crusher is hired. The quantity of concrete must be sufficient enough to warrant calling in the machine because it is quite expensive. An operator will utilize a jackhammer on a utlitity machine to break the concrete into sizes that the crusher can break. A front-end loader will scoop the concrete, carefully lifting it from the surrounding ground because soil is not wanted in the machine. The loader dumps the concrete into a machine that crushes the concrete and ejects it into a pile. Soil is ejected from the side, and rebar is collected with a magnet in the machine and ejected to a pile for metal recycle. A backhoe manipulates the pile. A front-end loader takes the concrete an puts it into a truck for use on the Installation.

Construction and Demoliton Debris (C&D). C&D materials are accepted by the RSA Landfill. When a hauler wants to send material to the RSA Landfill, they must complete a Material Certification Form, which verifies that the project is allowed to send the identified materials to the landfill. A delivery ticket must accompany each load. The C&D material is trucked to the landfill, weighed, and then dumped in a designated cell. A utility vehicle manipulates the material into rows of an acceptable depth. Cover soil is applied when a row is completed to prevent odors and animal interference.

Recycling- General. RSA recycles high-grade, white office paper, cardboard, and toners. The resources necessary for operation are 55-gallon blue bins, 55-gallon grey bins, gaylord boxes for collection at the warehouse, the warehouse for storage space, a truck for hauling and delivering,and two people for lifting bins (at EMD).

Chugach, LLC supports the recycling program with 1.2 manhours. This provides for the collection, sorting, and preparation for sale of commodities. A bailer, sorting bins, and a forklift are the necessary equipment. Metal wires also are necessary for binding the bales.

Sustainability

Solid Waste management and diverson protects the resource;i.e. the landfill, by extending the operating life through compliance with laws and regulations.

How does Non-Hazardous Waste Management affect sustainability in:
Mission -

Community -

Environment -

Consequences

The cosequences of not operating the landfill in accordance ewith applicable laws and regulations could result in a notice of violation or a fine. Not managing the landfill properly can consume all of the available space before the projected date. This action would require the opening of a new landfill and requesting a new permit. Based on operational history, it is possible that a new landfill permit would not be issued if neglegence and poor management were involved in the premature closure.
Users of the current landfill would have to find alternative locations that would accept the wastes. This could result in an increase in the amounts paid to dispose of solid waste.

Recycling wastes helps extend the projected life of the landfill.

Annual Review

Marc Subido reviewed it on 8 September 14 and had the following comments:

Update measureable targets.
How did we do?
What new targets do we need?
What have we done to make people aware of this aspect? What should we do?

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Do we have all the records listed?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
20	**Noise Management**	John Souza

Discussion

Noise is an environmental element of Helicopter testing and Munitions Explosions which are two of the services that occur at Redstone Arsenal. There are laws and regulations that require some management of noise. Redstone occasionally gets complaints about noise. Noise is a significant environmental aspect that will be managed as part of the environmental management system at Redstone Arsenal.

Impacts or possible impacts

Compliants from neighbors.

Poor public relations.

Goals

To foster positive relationships with the commuities surrounding Redstone Arsenal.
Comply with local noise ordinances, laws, and regulations.

Measurable Targets

Maintain records of noise complaints to include GIS tracking points of complaint locations to detect any possible future patterns of noise annoyance.

Letters of Instructions

Legal Requirements

AR 200-1 • 28 August 2007
Chapter 14
Operational Noise
14-1. Policy
a. Evaluate and document the impact of noise produced by ongoing and proposed Army actions/activities and minimize annoyance to humans to the extent practicable.
b. Develop installation noise management plans as appropriate.
c. Reduce noise to acceptable levels in on-post noise sensitive locations (for example, medical treatment, education,family housing) through appropriate land use planning and/or architectural and engineering controls.
d. Monitor, record, archive and address operational noise complaints.
e. Develop and procure weapons systems and other military combat equipment (for example, electrical generators,etc.) that produce less noise, when consistent with operational requirements. Measure the noise emitted by all combat equipment and weapons systems to be used in training before deployed to units.
f. Procure commercially manufactured products, or those adapted for general military use that produce less noise, and comply with regulatory noise emissions standards.
g. Acquire property only as a last resort to resolve off-post noise issues.
h. Manage operational noise issues and community relations to maintain sustainable testing and training capabilities and prevent encroachment.
14-2. Legal and other requirements
Property and tort law; Noise Control Act of 1972, Quiet Communities Act of 1978; AR 95-1; AR 210-20; AR 350-19; and applicable State and local laws.
14-3. Major program goals
a. Control operational noise to protect the health and welfare of people, on- and off-post, impacted by all Army produced noise, including on- and off-post noise sources.
b. Reduce community annoyance from operational noise to the extent feasible, consistent with Army training and materiel testing mission requirements.
c. Actively engage local communities in land use planning in areas subject to high levels of operational noise and a high potential for noise complaints.
14-4. Program requirements a. Noise descriptors (metrics) appropriate for determination of compatible land use, and assessment procedures will be based on the best available scientific information.
(1) The day-night level (DNL) is the primary descriptor for military noise, except small arms, see table 14-1. The DNL is the time weighted energy average sound level with a 10-decibel (dB) penalty added to the nighttime levels (2200 to 0700 hours). The DNL noise metric may be further defined, as appropriate, by the installation with a specific,

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designated time period (for example, annual average DNL, average busy month DNL). The typical assessment period over which the noise energy is averaged is 250 days for Active Army installations and 104 days for Army Reserve and National Guard installations. The use of average busy month DNL is appropriate when the OPTEMPO is significantly different during certain peak periods of the year. For future land use planning and encroachment assessment purposes,
a reasonable annual growth factor in activity (for example, 10 or 15 percent) may be assumed.
(2) Supplemental metrics, such as single event noise data (for example, Peak, PK 15(met) or CSEL), may be employed where appropriate to provide additional information on the effects of noise from test and training ranges. Aweighted maximum noise levels will be used to assess aviation low level military training routes (MTRs) and/or flight
tracks.
(3) The use of average noise levels over a protracted time period generally does not adequately assess the probability of community noise complaints. Assess the risk of noise complaints from large caliber impulsive noise resulting from testing and training activities, ex. armor, artillery, mortars and demolition activities, in terms of a single event metric, either peak sound pressure level (PK 15(met)) or C-weighted sound exposure level (CSEL). The metric PK 15(met) accounts for statistical variation in received single event peak noise level that is due to weather. It is the calculated peak noise level, without frequency weighting, expected to be exceeded by 15 percent of all events that might occur. If there are multiple weapon types fired from one location, or multiple firing locations, the single event level used should be the loudest level that occurs at each receiver location.
(4) Assess noise from small arms ranges using a single event metric, either PK 15(met) or A-weighted sound exposure level (ASEL).
(5) Use the land use planning zone (LUPZ) contour to better predict noise impacts when levels of operations at airfields or large caliber weapons ranges are above average.
(6) Use available DOD noise assessment software as the primary means of operational noise assessment.
(7) Prepare noise maps showing noise zones and limits as defined in tables 14-1 and 14-2.
(8) Manage noise-sensitive land uses, such as housing, schools, and medical facilities as being acceptable within the LUPZ and noise zone I, normally not recommended in noise zone II, and not recommended in noise zone III. These noise zones are defined in table 14-1.
(9) Single event noise limits in table 14-2 correspond to areas of low to high risk of noise complaints from large caliber weapons and weapons systems. These should be used to supplement the noise zones defined in table 14-1 for land use decisions. Noise sensitive land uses are discouraged in areas where PK 15(met) is between 115 and 130 dB; medium risk of complaints. Noise sensitive land uses are strongly discouraged in areas equal to or greater than PK 15(met) = 130 dB; high risk of noise complaints. For infrequent noise events, installations should determine if land use compatibility within these areas is necessary for mission protection. In the case of infrequent noise events, such as the detonation of explosives, the installation should communicate with the public.
(10) Transportation and industrial noise will be assessed on a case by case basis using appropriate noise metrics, including U.S. Department of Transportation guidelines.
b. Address issues concerning building vibration and rattle due to weapons blast through the appropriate subject matter experts and legal counsel.
c. Address noise impacts on domestic animals and wildlife, as required, through the study of each species' response or a surrogate response to noise. The noise levels set forth herein apply to humans only and do not apply to domestic animals or wildlife.

Training Requirements

No training requirements.

Awareness

EMD Web Page
The Noise Program web page begins at:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/other/other.html
The Noise Program page was checked on 07/01/2013 and determined to be adaquate for Environmental Awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

No permits.

Required Plans

Installation Environmental Noise Management Plan does not have a set period for a required update. Updates to contours associated with this plan have made to account for BRAC, FBI, and ATF activities. Revisions to the plan are on as needed basis. There have been very few noise complaints recently, therefore, changes to the plan are not anticipated.

Required Records

Records of noise events are kept and plotted on GIS.

Monitoring/Measuring Requiremens

EPAS Checklist:

O Guidance documents on hand:

-AR 200-1: Environmental Protection and Enhancement
-TM 5-803-2: Planning in the Noise Environment
-EO 12088, Federal Compliance with Pollution Standards.

O Ensure Environmental Noise Plan is current.

O A noise complaint procedure is in place.

O Ensure that noise contours and associated maps are current.

O Ensure that Environmental Noise Plan is updated to include consideration of new tenants.

O Maintain current records of all noise complaints.

O Establish and maintain communication with PAO and POC’s of noise generating sources.

O DOD noise assessment software is used as the primary means of operational noise assessment.

O Noise maps are prepared showing noise zones and limits as defined.

O Small arms ranges are assessed using a single event metric.

O Supplemental metrics are employed where appropriate to provide additional information on the effects of noise from test and training ranges.

O Supplemental metrics are used to assess aviation low level military training routes and/or flight tracks where appropriate.

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O Issues concerning building vibration and rattle due to weapons blast are addressed through the appropriate subject matter experts and legal counsel.

O Noise impacts on domestic animals and wildlife are assessed through study of each species' response or a surrogate response to noise

O Noise effects from both on post and off post sources have been addressed.

O Noise mitigation measures have been identified.

O Noise-sensitive land uses are considered in management plan.

Calibration

Not applicable

What Significant Impacts Are

Any noise that would leave the installation would need to be identified for effects or the population outside the fence. The public will be given a chance to comment on the noise.

Responsible Person(s)

Resources

Adminstration Overhead Cost (Chief's Office) - 137 Hours - $6423
Branch Chief - 52 Hours $2,949
Program Manager - 52 Hours - $2,949

No required contracts

Sustainability

Consequences

Annual Review

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
21	**Waste Munitions**	Lisa Douglas

Discussion

A military munition is not a solid waste when it is used for its intended purpose. This includes activities like training military personnel or explosives and munitions emergency response specialists; used in research, development, testing, and evaluation of military munitions, weapons, weapon systems; or recovery, collection and on-range destruction of UXO and munition fragments during range clearance activities at active ranges or inactive ranges. However, it does not include the on-range disposal or burial of UXO and contaminants when the burial is not a result of product use.

It is also not a waste munition when an unused muntion or component is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involde use constituting disposal or burning for energy recovery.

An unused military munition is a solid waste when any of the following occurs:

The munition is abandoned by being disposed of, burned, detonated, incinerated, or treated prior to disposal or is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned or incinerated, or treated prior to disposal or the munition is deteriorated or damaged to the point that it cannot be put into serviceable condiiton, and cannot reasonably be recycled or used for other purposes, or the munition has been declared a solid waste by an authorized military official.

Waste munitions are a significant environmental aspect that will be managed as part of the Environmental Management System.

Impacts or possible impacts

Contamination of groundwater or soils.
Potential damaging effects to personnel and property from explosive waste.

Goals

Comply with Environmental Laws and Regulations

Prevent Pollution

Implement the WMM handling procedure to aid in reducing waste.

Identify potential opportunties to reduce the amount of WMM items being treated at OB/OD

Identify additional items for removal from the OB/OD process.

Improve user knowledge of the waste profile procedures and purpose.

Find means to dispose of select WMM outside of being treated at OB/OD.

Measurable Targets

Identify additional expended munitions items that can be certified inert without treatment at OB/OD.

- We have been able to divert munitons related fiberglass and expended colored smoke grenades to the Huntsville landfill as solid waste. This procedure allows these items to disposed of as a solid waste and doesn’t require treatment prior to disposal.

Train WMM handlers in the proper procedures for completion of turn-in documentation.

- Completed a powerpoint training slide show on emergency demilitarization.

Identify additional expended munitions items that can be certified inert without treatment at OB/OD.

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Conduct range inspections for 100% of ranges annually.

Letters of Instructions

Legal Requirements

DOD Ammunition and Explosive Safety Standards (DoD 6055.9.std)

DoD 4160.21-M Chapter 4 amended by ammunition, explosives and dangerous articles (AEDA) and Range Residue Interim Policy

Department of Defense Directive (DoDD) 3200.15 establishes policy and assigned responsibility under Title 10, United States Code for the sustainment of training and test ranges

Army's Sustainable Range Program (SRP) AR 350-19

AR 200-1; a. Section 9601, Title 42, United States Code (42 USC 9601); Section 300f, Title 42, United States Code (42 USC 300f); Section 26, Title 33, United States Code (33 USC 26); Section 7401, Title 42, United States Code (42USC 7401); and other regulations that apply to soil, water, and air.
b. Sections 200 to 206, Part 266, Title 40, Code of Federal Regulations (40 CFR 266.200 to 40 CFR 266.206) or applicable State versions.
c. DODD 4715.11 and DODD 4715.12.
d. DODI 4140.62. AR 200-1 • 28 August 2007 31

40 CFR 266.200 to 40 CFR 266.206 follows.
Subpart M—Military Munitions

Source: 62 FR 6654, Feb. 12, 1997, unless otherwise noted.

§ 266.200 Applicability.

(a) The regulations in this subpart identify when military munitions become a solid waste, and, if these wastes are also hazardous under this subpart or 40 CFR part 261, the management standards that apply to these wastes.

(b) Unless otherwise specified in this subpart, all applicable requirements in 40 CFR parts 260 through 270 apply to waste military munitions.

§ 266.201 Definitions.
top
In addition to the definitions in 40 CFR 260.10, the following definitions apply to this subpart:

Active range means a military range that is currently in service and is being regularly used for range activities.

Chemical agents and munitions are defined as in 50 U.S.C. section 1521(j)(1).

Director is as defined in 40 CFR 270.2.

Explosives or munitions emergency response specialist is as defined in 40 CFR 260.10.

Explosives or munitions emergency is as defined in 40 CFR 260.10.

Explosives or munitions emergency response is as defined in 40 CFR 260.10.

Inactive range means a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities.

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Military means the Department of Defense (DOD), the Armed Services, Coast Guard, National Guard, Department of Energy (DOE), or other parties under contract or acting as an agent for the foregoing, who handle military munitions.

Military munitions is as defined in 40 CFR 260.10.

Military range means designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

Unexploded ordnance (UXO) means military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause.

§ 266.202 Definition of solid waste.
top
(a) A military munition is not a solid waste when:

(1) Used for its intended purpose, including:

(i) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions); or

(ii) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or

(iii) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, "use for intended purpose" does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

(2) An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal as defined in 40 CFR 261.2(c)(1), or burning for energy recovery as defined in 40 CFR 261.2(c)(2).

(b) An unused military munition is a solid waste when any of the following occurs:

(1) The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in paragraph (a) of this section), incinerated, or treated prior to disposal; or

(2) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal, or

(3) The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or

(4) The munition has been declared a solid waste by an authorized military official.

(c) A used or fired military munition is a solid waste:

(1) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to

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disposal; or

(2) If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

(d) For purposes of RCRA section 1004(27), a used or fired military munition is a solid waste, and, therefore, is potentially subject to RCRA corrective action authorities under sections 3004(u) and (v), and 3008(h), or imminent and substantial endangerment authorities under section 7003, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).

§ 266.203 Standards applicable to the transportation of solid waste military munitions.
top
(a) Criteria for hazardous waste regulation of waste non-chemical military munitions in transportation. (1) Waste military munitions that are being transported and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR part 261, are listed or identified as a hazardous waste (and thus are subject to regulation under 40 CFR parts 260 through 270), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions;

(ii) The waste military munitions must be transported in accordance with the Department of Defense shipping controls applicable to the transport of military munitions;

(iii) The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility; and

(iv) The transporter of the waste must provide oral notice to the Director within 24 hours from the time the transporter becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) of this section that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1) of this section.

(2) If any waste military munitions shipped under paragraph (a)(1) of this section are not received by the receiving facility within 45 days of the day the waste was shipped, the owner or operator of the receiving facility must report this non-receipt to the Director within 5 days.

(3) The exemption in paragraph (a)(1) of this section from regulation as hazardous waste shall apply only to the transportation of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment or disposal.

(4) The conditional exemption in paragraph (a)(1) of this section applies only so long as all of the conditions in paragraph (a)(1) of this section are met.

(b) Reinstatement of exemption. If any waste military munition loses its exemption under paragraph (a)(1) of this section, an application may be filed with the Director for reinstatement of the exemption from hazardous waste transportation regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1) of this section. If the Director finds that reinstatement of the exemption is appropriate based on factors such as the transporter's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the Director may reinstate the exemption under paragraph (a)(1) of this section. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted,

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retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if the Director finds that reinstatement is inappropriate based on factors such as the transporter's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the exemption under paragraph (a)(1) of this section, the Director may specify additional conditions as are necessary to ensure and document proper transportation to protect human health and the environment.

(c) Amendments to DOD shipping controls. The Department of Defense shipping controls applicable to the transport of military munitions referenced in paragraph (a)(1)(ii) of this section are Government Bill of Lading (GBL) (GSA Standard Form 1109), requisition tracking form DD Form 1348, the Signature and Talley Record (DD Form 1907), Special Instructions for Motor Vehicle Drivers (DD Form 836), and the Motor Vehicle Inspection Report (DD Form 626) in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the Department of Defense shipping controls shall become effective for purposes of paragraph (a)(1) of this section on the date the Department of Defense publishes notice in the Federal Register that the shipping controls referenced in paragraph (a)(1)(ii) of this section have been amended.

§ 266.204 Standards applicable to emergency responses.

Explosives and munitions emergencies involving military munitions or explosives are subject to 40 CFR 262.10(i), 263.10(e), 264.1(g)(8), 265.1(c)(11), and 270.1(c)(3), or alternatively to 40 CFR 270.61.

§ 266.205 Standards applicable to the storage of solid waste military munitions.

(a) Criteria for hazardous waste regulation of waste non-chemical military munitions in storage. (1) Waste military munitions in storage that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR Part 261, are listed or identified as a hazardous waste (and thus are subject to regulation under 40 CFR Parts 260 through 279), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions.

(ii) The waste military munitions must be subject to the jurisdiction of the Department of Defense Explosives Safety Board (DDESB).

(iii) The waste military munitions must be stored in accordance with the DDESB storage standards applicable to waste military munitions.

(iv) Within 90 days of August 12, 1997 or within 90 days of when a storage unit is first used to store waste military munitions, whichever is later, the owner or operator must notify the Director of the location of any waste storage unit used to store waste military munitions for which the conditional exemption in paragraph (a)(1) is claimed.

(v) The owner or operator must provide oral notice to the Director within 24 hours from the time the owner or operator becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1) of this section.

(vi) The owner or operator must inventory the waste military munitions at least annually, must inspect the waste military munitions at least quarterly for compliance with the conditions of paragraph (a)(1) of this section, and must maintain records of the findings of these inventories and inspections for at least three years.

(vii) Access to the stored waste military munitions must be limited to appropriately

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trained and authorized personnel.

(2) The conditional exemption in paragraph (a)(1) of this section from regulation as hazardous waste shall apply only to the storage of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to transportation, treatment or disposal.

(3) The conditional exemption in paragraph (a)(1) of this section applies only so long as all of the conditions in paragraph (a)(1) of this section are met.

(b) Notice of termination of waste storage. The owner or operator must notify the Director when a storage unit identified in paragraph (a)(1)(iv) of this section will no longer be used to store waste military munitions.

(c) Reinstatement of conditional exemption. If any waste military munition loses its conditional exemption under paragraph (a)(1) of this section, an application may be filed with the Director for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1) of this section. If the Director finds that reinstatement of the conditional exemption is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the Director may reinstate the conditional exemption under paragraph (a)(1) of this section. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the conditional exemption under paragraph (a)(1) of this section, the Director may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.

(d) Waste chemical munitions. (1) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR Part 261, are listed or identified as a hazardous waste and shall be subject to the applicable regulatory requirements of RCRA subtitle C.

(2) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR Part 261, are not subject to the storage prohibition in RCRA section 3004(j), codified at 40 CFR 268.50.

(e) Amendments to DDESB storage standards. The DDESB storage standards applicable to waste military munitions, referenced in paragraph (a)(1)(iii) of this section, are DOD 6055.9-STD ("DOD Ammunition and Explosive Safety Standards"), in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the DDESB storage standards shall become effective for purposes of paragraph (a)(1) of this section on the date the Department of Defense publishes notice in the Federal Register that the DDESB standards referenced in paragraph (a)(1) of this section have been amended.

§ 266.206 Standards applicable to the treatment and disposal of waste military munitions.

The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in 40 CFR Parts 260 through 270.

Alabama Division of Environmental Management Regulations can be found at ADEM Admin Code 335-14-5-.31 335-14-7-.13

335-14-7-.13(6) identifies when the requirements of 335-14-6-.01 apply to the storage of military munitions classified as solid waste under

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335-14-7-.13(3). The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in 335-14-1 through 335-14-9.

Training Requirements

All who work directly with chemical agents and ammunition are required to receive enough training to enable them to work safely and understand the relative significance of agent exposures (DoD 6055.9 STD)

Fire Protection workers and responders are required to be familiar with Chemical Agent Data Sheets, Joint chemical Biological Technical Data Source Book, Special OSHA Standard for the Evaluation and Control of Occupational Exposure to agent GB.

AR 200-1; (1) Train munitions managers and handlers on the Munitions Rule and related State requirements . (PD: Munitions Action Plan)

Completed a powerpoint training slide show on emergency demilitarization

Included an OB/OD and waste munitions section in the annual RCRA training.

Awareness

EMD to develop a web page to support waste munitions.

Communications

Operational Controls

The laws and regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

AMC REGULATION No. 700-107, 3 February 2003, Logistics
PREPARATION OF STANDING OPERATING PROCEDURES(SOP) FOR AMMUNITION OPERATIONS defines the requirements for preparing an SOP and the requirement for the Environmental Office to concur with the SOP before it is approved. It can be found at:

http://www.amc.army.mil/pa/pubs/r700_107.pdf

DA PAM 385-10, Army Safety Program, Chapter 9 section 7, 23 May 2008, Standing Operations Proceedures for Hazardous Operation,Review - Concurrence, supports the requirement for the Envionmental Office to concur with SOPs for Hazardous operations.

Required Permits

RCRA Part B Permit

RCRA Subpart X Permit for Open Burning/Open Detonation (OB/OD) of unserviceable ammunition, training pyrotechnics and propellant.

HAZARDOUS WASTE
FACILITY PERMIT
PERMITTEE: U.S ARMY GARRISON -REDSTONE
ADDRESS:HUNTSVILLE, MADISON COUNTY
PERMIT NUMBER:AL7 210 020 742
UNITS PERMITTED: 9) HAZARDOUS WASTE STORAGE UNITS (2) THERMAL

TREATMENT UNITS (SUBPART X OB Unit and SUBPART X OD Unit)
SOLID WASTE MANAGEMENT UNIT (SWMU) CORRECTIVE ACTION
ISSUANCE DATE: SEPTEMBER 30,2010
EXPIRATION DATE: SEPTEMBER 29, 2020

Required Plans

All storage units are required to have SOPs to provide safety, security and environmental protection.

A contingency plan is required for OB/OD operations.

All SOPs for range operations are required to be maintained

A plan is required which establishes the frequency for conducting periodic range inspections.

OB/OD monitoring report is now annual and is due no later than September 30 of each year.

Required Records

(1) Prepare an annual Toxic Release Inventory (TRI) Form R for operational ranges as required and submit with the installation's TRI report to the U.S. Army Environmental Command (USAEC) via chain of command by 1 May of each calendar year (this does not apply overseas). After review and comment from USAEC, facilities will provide final report to the Environmental Protection Agency (EPA) by 1 July, with copy to USAEC (see para 7-4d)

(2) All waste munitions treated at OB/OD must be reported on the Biennial Hazardous Waste Report. This is on-site treatment and shall be reported as such on the Biennial. All Ash generated from OB/OD activities will be dispose of off site and ash that possess hazardous characteristics will be included in the Biennial hazardous Waste Report.

(3) Where practicable, maintain records of the historical uses of operational ranges; and retain environmental cleanup investigations, hydro-geologic, geologic, and soil surveys, and other environmental documents that support sustainable range planning.

(4) All OB/OD activities are to be recorded in the Demolition database managed by EMD. Input is done by personnel from Ammunition Surveilance (Department of Logistics). Database audits are performed by the Garrison EMD on a monthly basis.

Monitoring/Measuring Requiremens

The Range/Waste Munitions Manager for EMD will maintain an operating log to ensure that all required documentation required under the OB/OD permit has been completed.

Determine if any new regulations concerning waste munitions have been issued since the finalization of the manual.

Determine if the facility has activities or facilities that are regulated but not addressed in this checklist.

Verify that the facility is in compliance with all applicable and newly issued regulations.

Determine if risk management techniques are promoted in environmental efforts.

Determine if the installation has gone above and beyond simply complying with environmental requirements.

Determine what management systems are in place.

Verify that the existing system addresses the issues associated with NEPA by:
interviewing personnel
reviewing paperwork
observing the operation or activity.
Determine if training is being conducted.
Verify that facility environmental policies and regulations are sufficient and fully

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implemented..

Determine whether copies of the following regulations and policy letters, which are applicable, are maintained and kept current at the ARCOM/RSC:
EO 12088, Federal Compliance with Pollution Standards.
DoD Policy to Implement the EPA's Military Munitions Rule.
DoD 4160.21-M, Defense Materiel Disposition Manual.
DoD 4160.21-M-1, Defense Demiliterization Manual.
applicable state and local regulations.

Calibration

We have no monitoring or other equipment needing calibration at this time.

Scales at the Ammuniton Surveillance Office (B.8700G1)are used to weigh all waste munitions prior to OB/OD disposal. These scales must be certified annually. The last certification date for the scales was on 9/17/14 per Mr. Ed Lopaz (256-876-1332).

What Significant Impacts Are

Waste munitions are a significant environmental aspect that will be managed as part of the Environmental Management System. Consequences of non compliance can result in contamination of groundwater and/or soils or potential damaging effects to personnel and property from explosive waste.

Any project or operation that violates the Military Munitions Rules would be a significant environmental impact.

Responsible Person(s)

Garrison commanders
a. Execute the Sustainable Range Program (SRP) in accordance with AR 35-19.
b. Designate a point of contact to serve as the central manager for—
(1) Program execution of all range, training land, and related support requirements.
(2) Coordination with the corresponding MACOM and IMA Region

The Director of Public Works (DPW) Responsibilities
a. Supervises the Chief, Environmental Management Division
b. Provide standard BASOPS services in areas directly supporting the ranges and in accordance with OACSIM
direction and resources for environmental, facilities management, and EIS, including RFMSS, GIS, and the ITAM
Regional Support Center GIS Repository.

The Chief, Environmental Management Division, supports the Garrison Commander in carrying out the following responsibilities.
a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship.
b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals and Executives Orders.
c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS-EL.
d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SME is made aware of these impacts.
e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.
f. Apply for, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.
g. Maintain appropriate environmental records as required by law.
h. Record enforcement actions within 48 hours via the Army Environmental Reporting Online

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(AERO).
i. Coordinate with JALS-EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
j. Ensure that compliance agreements and consent orders that are attributable to a tenant's mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
k. Champion the installation EMS and ensure all planning incorporates the requirements of the EMS.
l. Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
m. Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
n. Ensure all environmental program plans are completed and implemented per guidance in chapter 3.12 AR 200-1 • 28 August 2007
o. Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14, AR 200-1 • 28 August 2007
p. Work with public affairs office to encourages public involvement.
q. Ensure that the installation master plan incorporates environmental considerations.
r. Identify environmental requirements, forward through command channels, and maintain auditable records.
s. Execute the environmental budget to meet critical requirements.
t. Maintain an efficient and well-trained environmental staff.
u. Work with tenants for compliance with the policies and standards of the installation.
v. Sign all correspondence on environmental matters.
W. Informs and seeks the help of the Garrison Commander when an out-of-control condition is discovered that cannot be brought under control without his help.

The Chief, EMD, Compliance Branch Responsibilities
a. Management of the Waste Munitions program.
b. The collection of data required by all reporting requirements.
c. Preparation of all reports under this aspect.
d. Preparation of all permits under this aspect.
e. Identifications of resources necessary to meet the goals of this aspect.
f. Identification of all persons, by name and position, on Redstone Arsenal with responsibilities for compliance under this aspect.
g. Auditing for compliance under the laws, regulations and other requirements of this aspects.
h. Preparation of Corrective Action Plans for non compliance issues.
i. Ensure that environmental compliance and management requirements are mitigated, if possible, and do not restrict
testing and/or training.
J. Ensure that environmental compliance and stewardship requirements and responsibilities that support the installation's
mission are embedded in range operations.

EMD Range/Waste munitions Manager -
a. Manage the RCRA Subpart X Permit for Open Burning/Open Detonation (OB/OD) of unserviceable ammunition, training pyrotechnics and propellant.
b. Maintain the operating log and ensures that all required documentation has been completed.
c. Ensure that all conditions of the permit are met in a timely manner and all necessary submissions to ADEM are made by the DPW.
d. Provide guidance and recommendations to the DPW and Chief, ENRMD on further actions or modifications of the Subpart X permit. Interprets results of quarterly groundwater monitoring program.
e. Support the completion of NEPA analysis by providing timelines, milestones, and required inputs for range actions.
f. Communicate with public affairs when appropriate.
G. Provide management and oversight of clean-up procedures in the event the MEC, CWM, and/or CA incident resulted in contamination of the sight.

H. Review all job work orders , construction siting plans, and other work plans as appropriate to minimize impact of possible MEC, CWM, and/or CA locations during site clearance/construction.
i. Review and staff all MEC, CWM, and/or CA Probability Assessments for approval.
J. Coordinate with necessary agencies to accomplish required first entry monitoring, periodic monitoring, maintenance and repair of the MEC storage igloos as well as the CWM and CA storage igloos.
K. Coordinate with Alabama Department of Environmental Management to maintain compliance with EPA Military Munitions Rule.
L. Report MEC, CWM, and/or CA incidents, storage and disposal to outside agencies as required (Alabama Department of Environmental Management (ADEM) and/or Environmental Protection Agency (EPA)). This does not include the requirements for reporting requirements for the Chemical Biological Emergency Reporting System (CBERS) as required for CWM incidents.
M. Maintain double key control of MEC, CWM, and/or CA storage igloos along with the Safety Office.
N. Maintain an updated listing of the all inventory in the storage igloos designated for MEC, CWM, and/or CA storage.

All tenants will be responsible for:
- Communicating the 3R's (Recognize, Retreat, and Report) response process to their employees and contractor support. Additional information on the 3R's process is located at https://www.denix.osd.mil/portal/page/portal/denix/environment/uxo.
- Prepare and receive approval of the appropriate paperwork prior to conducting intrusive activities, preferably prior to design phase (i.e. job work order, signed probability assessment)
- Ensure dual modes of communications in areas of remote reception during field activities where there is a potential for encountering MEC, CWM, and/or CA.

The Redstone Arsenal Fire Department will be responsible for:
- Notifying the Garrison Safety Office (SO) and the Environmental Management Division (EMD) in the event of a MEC, CWM, and/or CA incident.
- Providing emergency response services during MEC, CWM, and/or CA incident response operations. This will include providing and operating an on-site decontamination station during all MEC, CWM, and/or CA operations.
- Serving as the Incident Commander during a MEC, CWM, and/or CA incident, exercising control over everyone at the scene. The Incident Commander will remain in charge until he or she determines that the immediate threat to life or health has passed. Once life threatening issues, if any, are resolved, the site will be relinquished to an appointed RSA Safety Office representative.
- Ensure all Fire Department personnel responding to a MEC, CWM, and/or CA incident are properly trained and equipped for response action.

The Provost Marshal Office will be responsible for:
a. Site security during incident response operations and after response operations if criminal investigation is required.
B. Evacuation of personnel from areas affected by a MEC, CWM, and/or CA event, should it become necessary.
C. Traffic/access control coordination with local law enforcement as needed, such as evacuation of installation.
D. Ensure all personnel are familiar with response procedures and at no time handle or attempt to disarm, remove, or otherwise intentionally make contact with any MEC, CWM, and/or CA.

The Safety Office (SO), will be responsible for:
a. Management and oversight of the Installation UXO/CWM Program. This includes coordination with EMD, and other responsible agencies to ensure that all RSA emergency response personnel are properly trained and equipped in the event of a UXO/CWM incident.
B. Review and sign on all MEC, CWM, and/or CA Probability Assessments for the

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arsenal to determine the potential for MEC, CWM, and/or CA presence (Section 8).
C. Review and revise the Redstone Arsenal MEC, CWM, and CA Program and Incident Response Plan on an as needed basis but at a minimum annually.
D. Notifying the US Army Garrison - Redstone Commander and providing current information throughout operations from initial incident response to final disposition of recovered MEC, CWM, and/or CA.
E. Assume control of an incident site once the Fire Department and Provost Marshall have determined that life threatening issues, if any, have been resolved.
F. Notifying the Public Affairs Office and providing current information throughout operations from initial incident response to final disposition of recovered MEC, CWM, and/or CA.
G. Coordinating with and providing support to appropriate agencies during MEC, CWM, and/or CA incident response and continuing through final disposition of MEC, CWM, and/or CA items. This will include ensuring that response personnel have the equipment and resources necessary to conduct operations.
H. Development and yearly review of Memoranda of Agreements (MOAs) with emergency response personnel including first responders, emergency transport personnel, emergency care providers, Huntsville Hospital and HEMSI.
i. Ensure all outside responders in support of this plan, including Huntsville Hospital and HEMSI, are properly trained and equipped.
J. Provide support to ensure proper procedures are followed to maximize worker safety during incident response operations.
K. Coordinating with the Garrison Directorate of Emergency Services (DES) to ensure that emergency response personnel are in place, including first responders, on-site emergency support, emergency transport, and emergency treatment personnel.

Huntsville Hospital – Provide emergency treatment of casualties with potential exposure to MEC, CWM, and/or CA.
Huntsville Emergency Medical Services Inc (HEMSI) - Provide emergency transport of casualties with potential exposure to MEC, CWM, and/or CA.

Who will be doing the following from AR 200-1????
A. Consider demilitarization, constituent migration, and range cleanup and clearance in the weapons systems total lifecycle cost.
B. Manage the Army munitions inventory to achieve and maintain compliance with the Military Munitions Rule .
C. Whenever practicable, recycle obsolete, excess, or unserviceable munitions and munitions residue.
D. Incorporate environmental considerations into sustainable range designs to support mission requirements.
E. Coordinate with the Headquarters, Department of the Army, Deputy Chief of Staff, G-3/5/7 before closing an operational range.

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692
Branch Chief - 52 Hours - $2,949
Waste Munition/Range manager 2080 Hours - $177,998
GIS Support - 40 Hours- $1,900
Environmental Database hours - 60 hours - $3,000

Annual OB/OD groundwater monitoring contract - 287 Hours - $57,000

Sustainability:
3,500- training to stay current with regs

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Sustainability

Consequences

Annual Review

On October 1, 2012 AMRDEC assumed responsibility for the operation of the OB/OD facility.

Brian Mason, Austin York and Lisa Douglas inspected all of the active ranges in FY14 and prepared a report for each inspection in the range database. The range inspection includes visual inspection of the range as well as a review of the paperwork including training and required plans.

Required Plans include:

- A contingency plan is required for OB/OD operations.
- All SOPs for range operations are required to be maintained
- A plan is required which establishes the frequency for conducting periodic range inspections.

Location

Top Three Issues

17K pounds of Emergency Demilitarization.

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
22	**Radon**	Ramzi Makkouk

Discussion

Radon Gas is an environmental element of property management which is a service offered on Redstone Arsenal. There are no environmental laws and regulations that require testing and management of Radon but there have been Army policies that require radon testing and mitigations. Redstone Arsenal sits in an area that has been identified to have high levels of Radon Gason. Radon has been determined to be a significant environmental aspect which will be managed as part of the Redstone Arsenal Environmental Management System.

Radon causes an estimated 14,000 lung cancer deaths each year. It is the earth's only naturally produced radioactive gas and comes from the breakdown of uranium in soil, rock, and water. You cannot see or smell radon, but it can become a health hazard when it accumulates indoors. It can enter your home through cracks and openings in the foundation floor and walls. When radon decays and is inhaled into the lungs, it releases energy that can damage the DNA in sensitive lung tissue and cause cancer.
Radon is a gas produced by the radioactive decay of the element radium. Radioactive decay is a natural, spontaneous process in which an atom of one element decays or breaks down to form another element by losing atomic particles (protons, neutrons, or electrons). When solid radium decays to form radon gas, it loses two protons and two neutrons. These two protons and two neutrons are called an alpha particle, which is a type of radiation. The elements that produce radiation are called radioactive. Radon itself is radioactive because it also decays, losing an alpha particle and forming the element polonium.
Elements that are naturally radioactive include uranium, thorium, carbon, and potassium, as well as radon and radium. Uranium is the first element in a long series of decay that produces radium and radon. Uranium is referred to as the parent element, and radium and radon are called daughters. Radium and radon also form daughter elements as they decay.
The decay of each radioactive element occurs at a very specific rate. How fast an element decays is measured in terms of the element half-life, or the amount of time for one half of a given amount of the element to decay. Uranium has a half-life of 4.4 billion years, so a 4.4-billion-year-old rock has only half of the uranium with which it started. The half-life of radon is only 3.8 days. If a jar was filled with radon, in 3.8 days only half of the radon would be left. But the newly made daughter products of radon would also be in the jar, including polonium, bismuth, and lead . Polonium is also radioactive - it is this element, which is produced by radon in the air and in people's lungs, that can hurt lung tissue and cause lung cancer.
Radioactivity is commonly measured in picocuries (pCi). This unit of measure is named for the French physicist Marie Curie, who was a pioneer in the research on radioactive elements and their decay. One pCi is equal to the decay of about two radioactive atoms per minute. Radon is measured in picocuries per liter and written as (pCi/L). One picocurie is one-trillionth of 37 billion disintegrations per second. One curie, named for Marie Curie, the discoverer of metallic radium, is the amount of radiation given off by one gram of radium. Radon decay products (RDPs) such as polonium(218), lead(214), bismuth(214), and polonium(214), lead(210), bismuth(210), polonium(210) are measured in working levels (WL). A working level is the amount of RDP which normally results when the decay products are in equilibrium (maximum concentration) with 100 picocuries of radon in the air.

Impacts or possible impacts

Damage to human health. The only known risk is long-term development of lung cancer. The level of risk depends on the concentration of radon as well as the number of years of exposure.

Goals

Prevent pollution by testing for radon.

With an estimated 21,000 lung cancer deaths attributed to radon exposure yearly, a figure noted by the Environmental Protection Agency (EPA), there is an ever increasing need to make sure your workplace is healthy and the radon level reduced.

Measurable Targets

The Environmental Management Division (EMD) has the full responsibility in ensuring priority structures 1 (All day care centers, hospitals, schools, Living areas (family

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housing, BOQ/BEQ, and billets) are in compliance with EPA's Indoor Air Quality Standards.

Plus, for priority structures 2 (All structures that are not priority 1, but are occupied 24 hours per day (operations centers, training and research, development, and test and evaluation facilities)and priority structures 3 (All other installation structures that are routinely occupied (offices, work areas, and shops)are in compliance with OSHA's regulations, that's 100 pCi/L averaged over a 40-h work week.

Test all new buildings within 30 days of notification that building are complete and ready for occupancy: In 2009 we were notified that there were twelve buildings ready for occupancy; all twelve buildings were tested in 30 days of notification.

Letters of Instructions

Legal Requirements

EPA Guidelines and Regulations

The EPA guideline is not law in the U.S., it pertains only to residential homes, and does not carry force of law (although it is a de facto standard upon which litigation may be supported). It is merely one group’s recommended level of reduction. The EPA does not have mandatory limits for radon for other types of buildings and does not prohibit levels of radon in excess of the 4 pCi/l threshold.

AR 200-1

Radon is not mentioned in AR 200-1, 13 Dec 2007 edition

OSHA's regulations are 100 pCi/L averaged over a 40-h work week.

AR 420-1
3-46. Special considerations
c. Radon. Radon is an invisible, odorless, naturally occurring radioactive gas which can accumulate in housing. The EPA has published monitoring guidance, radon relative risk information, and action level guidelines (see AR 200-1).
Installations will establish a radon assessment and mitigation program per guidance from the Environmental Management Office.

Training Requirements

There is no training requirements for Radon

Awareness

EMD Web Page:
The Radon Web page is on the page linked:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/toxics/toxics.html
The page was checked by Terry Hazle on 11/14/201 and determined to be adaquate for Environmental awareness.

Communications

Operational Controls

There are no controls required for Radon.

Required Permits

There are no Permits required for Radon.

Required Plans

There are no plans required for Radon

Required Records

There are no legal requirements for records

The SME for radon keeps the records for radon.

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Monitoring/Measuring Requiremens

There are no legal monitoring requirements for radon.

Radon Testing Checklist
For reliable test results, follow this Radon Testing Checklist carefully. Testing for radon is not complicated. Improper testing may yield inaccurate results and require another test. Disturbing or interfering with the test device, or with closed-house conditions, may invalidate the test results and is illegal in some states. If the seller or qualified tester cannot confirm that all items have been completed, take another test.
Before Conducting a Radon Test:
• Notify the occupants of the importance of proper testing conditions. Give the occupants written instructions or a copy of this Guide and explain the directions carefully.
• When doing a short-term test ranging from 2-4 days, it is important to maintain closed-house conditions for at least 12 hours before the beginning of the test and during the entire test period.
•When doing a short-term test ranging from 4-7 days, EPA recommends that closed-house conditions be maintained.
•If you conduct the test yourself, use a qualified radon measurement device and follow the laboratory's instructions. Your state may be able to provide you with a list of do-it-yourself test devices available from qualified laboratories.
•If you hire someone to do the test, hire only a qualified individual. Some states issue photo identification (ID) cards; ask to see it. The tester's ID number, if available, should be included or noted in the test report.
•The test should include method(s) to prevent or detect interference with testing conditions or with the testing device itself.
•If the house has an active radon-reduction system, make sure the vent fan is operating properly. If the fan is not operating properly, have it (or ask to have it) repaired and then test.
Closed-house conditions means keeping all windows closed, keeping doors closed except for normal entry and exit, and not operating fans or other machines which bring in air from outside. Fans that are part of a radon-reduction system or small exhaust fans operating for only short periods of time may run during the test.
During a Radon Test:
•Maintain closed-house conditions during he entire time of a short term test, especially for tests shorter than one week in length.
•Operate the home's heating and cooling systems normally during the test. For tests lasting less than one week, operate only air-conditioning units which recirculate interior air.
•Do not disturb the test device at any time during the test.
•If a radon-reduction system is in place, make sure the system is working properly and will be in operation during the entire radon test.
After a Radon Test:
•If you conduct the test yourself, be sure to promptly return the test device to the laboratory. Be sure to complete the required information, including start and stop times, test location, etc.
•If an elevated level is found, fix the home. Contact a qualified radon-reduction contractor about lowering the radon level. EPA recommends that you fix the home when the radon level is 4 pCi/L or more.
•Be sure that you or the radon tester can demonstrate or provide information to ensure that the testing conditions were not violated during the testing period.

Calibration

The EMD has 2 each Continuous Working Level Meters (CWLMs) that may require calibrations. The SME needs to put that information here.

What Significant Impacts Are

Radon levels above certain levels can cause higher cancer risk.

If a test determines that elevated levels of radon exist, a mitigation system should be installed to remove or vent the radioactive gas. Typically this involves the use of a small fan installed to vent the gas from under your foundation and/or a vapor barrier installed over exposed dirt or gravel in a crawl space. Once removed from the interior of the workplace the radon gas is vented outside the workplace.

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Responsible Person(s)

•Evironmental Management Office establishes a radon assessment and mitigation program (AR 420-1, para 3-46c) [Added October 2007].

Chief, Environmental Managemt Division - As the management repersentive is responsible for the development and implementation of a Environmental Management System.

Chief, Environmental Compliance Branch - Oversees and manages the compliance branch which is there to ensure Redstone Arsenal is compling with environmental laws and regulations.

Subject matter expert for radon. - ensures that RSA is compling with all laws and regulation pertaining to Radon. Also manages any testing program for radon and prepares reports/notices on results. Stores any records for istorical reference pertaining to radon.

Resources

Administration Overhead Cost (Chief's Office) - 137 Hours - $6423

Program Manager - 148 hours - $8,396
Perform data/results input into the Environmental Radon Database (32 hours)
Conduct sampling of newly constructed buildings or upon tenant's request (96 hours)
Prepare Memo's for tenants (20 hours)

Required costs/supplies

Radon test kits - $1,500

Sustainability

Radon is a naturally occurring radioactive gas produced by the breakdown of radium and uranium in soil, rock and water. Air pressure inside your workplace is usually lower than pressure in the soil around your building foundation. Because of this pressure difference, your workplace acts like a vacuum, drawing soil gases, including radon, in through foundation cracks and other openings. You can't see, smell or taste radon, and any workplace/home can have a radon problem. The only way to know what the radon level is in your workplace/home is to test.
Monitoring for radon is the key to a sustainable workplace.

Consequences

There are no legal requirement for radon, therefore, there are no legal consequences of not following radon program at RSA.

There could be health effect to people working in buildings therefore in order to protect the health we would need to be monitoring buildings. Need to make a determination if that should be the responsibility of preventive medicine or not.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Look at goals and measureable targets. (Done)
Have we done anything to make people aware of Radon? Not really but in general the building staff are well aware of radon, that may adverse health effects.
Can we do anything to make people more aware? Well, we are doing our part which is monitoring for radon and I do get calls occaingently from tenants wanting to know how to test their own home for radon.
What are sustainability aspects of Radon? To Test and prevent radon from entering our work places.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
23	**Lead Base Paint**	Ramzi Makkouk

Discussion

Lead base paint is an environment element of real property management which is a service of US Army Garrison - Redstone. Redstone has property that has lead base paint which is regulated by laws and regulations. Lead base Paint is a significant environmental aspect that will be managed as part of Redstone Arsenal Environmental Management System. Renovations in target (pre-1978) housing and child-occupied facilities must be conducted by certified renovation firms, using renovators with accredited training, and following the work practice requirements of the Renovation, Repair and Painting Rule.

Compliance with New Federal Lead-Based Paint Requirements: Renovators must comply with new certifi cation, training, pre-renovation notification and work practice standards. The new requirements kick in starting in April 2010. Failure to comply with the new requirements is a violation of the law: it can cause exposure to lead and result in serious health consequences, especially for young children. Penalties can be significant.

The new requirements include notification to property owners and occupants before work begins of the potential hazards from lead-based paint disturbed during the project, certifi cation of renovation companies, training and certification of workers, implementation of work practice standards for controlling lead-based paint dust, post-renovation cleanup requirements and post-renovation cleaning verification.

To assist you in understanding and complying with the lead-based paint rules for renovations, EPA has published the "Small Entity Compliance Guide to Renovate Right." It presents simple steps to follow to comply with EPA's lead program. The Renovate Right compliance handbook is available at www.epa.gov/lead/pubs/sbcomplianceguide.pdf and from the National Lead Information Center at 800-424-5323.
The handbook provides more detailed information on certifications, training, work practice requirements, prohibited practices and recordkeeping provisions than is included in this Enforcement Alert. It also includes information on certain exemptions to the Rules and other useful information about the lead-based paint program.

Where Lead-Based Paint is Found: Approximately three-quarters of the homes built before 1978 contain some lead-based paint. It may be on any surface, but is most commonly found on exterior-painted surfaces, interior woodwork, doors, and windows. The use of lead-based paint in housing was banned in 1978 by the U.S. Consumer Product Safety Commission.
When properly maintained and managed, contaminated paint poses little risk, although friction surfaces (windows and window sills, doors and door frames, stairs and railings) are a concern. Leadbased paint that peels or deteriorates is especially risky. As a general rule, the older a home, the greater the risk of lead-based paint. Exposure to lead may occur through lead-based paint chips and fl akes and through the fine dust that clings to carpets, floors,furniture, toys and other objects.
Dangers from Lead-Based Paint: Lead is a highly toxic metal. It is particularly dangerous to children, whose growing bodies absorb more of the metal and whose brains and nervous systems are more sensitive to its damaging effects. Even low levels of lead in children can reduce IQ, cause learning disabilities and behavioral problems, reduce attention span and retard physical development. Childhood lead poisoning is a major health problem in this country. Young children are much more likely to put their hands or objects in their mouths that can have lead dust on them, or to eat paint chips that contain lead. Lead poisoning in adults can increase blood pressure, cause irritability, poor muscle coordination, and damage the kidneys, nerves and brain. Fetal development can also be affected. Deteriorating lead-based paint and lead contaminated dust are primary sources of lead exposure. Peeling, chipping, chalking or cracking lead-based paint may all be hazardous, particularly when found on surfaces that children can touch or that get a lot of wear-and-tear, such as windows sills, doors and door frames, stairs, railings and banisters. People who sand, scrape, burn or otherwise disturb lead-based paint are at risk from inhalation of lead dust or fumes.

Activities Subject to the Lead-Based Paint Requirements: In general, any activity that disturbs paint in housing and child-occupied facilities built before

1978, including remodeling, repair, maintenance, electrical work, plumbing, painting, carpentry and window replacement, is subject to the requirements. Most minor repair and maintenance activities of less than six square feet per interior room of 20 square feet or exterior project are exempt from the work practice requirements. However, this exemption does not apply to window replacements, demolitions or the use of prohibited practices.

Requirements Effective Now: Pre-renovation education and notification requirements are now in effect. If you are a contractor, property manager or someone who performs renovations for compensation in pre- 1978 residential housing, before you start any work you must distribute the lead information pamphlet entitled "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers, and Families." The pamphlet is available at www.epa.gov/lead/pubs/renovaterightbrochure.pdf. If the renovations are in pre-1978 facilities occupied by children, you must first distribute the "Renovate Right" pamphlet to the owner of the building or the owner's representative. If the work is in common areas of pre-1978 multifamily housing or child-occupied facilities, you must distribute pamphlets to tenants or parents or guardians of children using these areas. In lieu of distributing pamphlets, you must post informational signs about the renovation or repair work. The informational signs must be posted in a conspicuous location, and describe the nature, location and dates that you will be doing the work. A copy of the pamphlet or information on how someone can get the pamphlet free must be posted with the sign.

Certification and Training: All firms, regardless of number of employees, must be certified. You can do this by applying to EPA or to a state, if it has an EPA-authorized program, and paying a fee. To apply, your firm must submit to EPA a completed "Application for Firms" form, signed by an authorized agent of the firm, and pay the correct amount of fees. The form is available from the National Lead Information Center at 800- 424-5323 or at www.epa.gov/lead/pubs/renovation.html.
There must be at least one certified renovator assigned with oversight authority over each job where lead-based paint is disturbed. To become a certified renovator, you must complete an EPA or authorized state-approved training course conducted by an EPA or state-accredited training provider. All workers must be trained on the work practices they will be using during the renovation. Renovation workers can be trained on-the-job by a certified renovator to use prescribed leadsafe work practices or they can become certified renovators themselves. Certified renovators are responsible for ensuring overall compliance with the Lead-Based Paint Renovation, Repair and Painting Program's requirements for lead-safe work practices at renovations they are assigned.

Requirements of a Certified Renovator:A certified renovator must:
• Use an EPA approved lead test kit when testing for lead-based paint on painted surfaces and components being disturbed;
• Provide on-the-job training to other workers on the work practices they will be using, be physically present at the job site when warning signs are posted, while work-area containment is being established and while work-area cleaning is being performed;
• Regularly direct work being performed by others to ensure compliance with work practice standards, including containment requirements;
• Be available on-site or by telephone whenever renovations are being performed;
• Perform project cleaning verification;
• Have with them their initial and most recent (i.e., refresher) course certifi cates; and
• Prepare required records.
Information on obtaining training as a certified renovator is available from the National Lead Information Center at 800-424-5323.

Lead-Safe Work Practices: All renovators must use work-area containment to prevent dust and debris from leaving the work area. All objects must be removed from the work area or covered to prevent contamination. All windows and doors must be closed and doors covered. Floors must be covered to contain dust.
After renovation, all dust and debris must be collected and the walls cleaned by vacuuming or wiping. After cleaning, a certifi ed inspector, risk assessor or dust sampling technician must verify the effectiveness of the cleaning. The renovator must re-clean the work area until it meets the applicable clearance standards. Cleaning verification is

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required to ensure that the work area is adequately cleaned and ready for re-occupancy. When cleanup standards are met, the renovator is done. For exterior renovations, similar work practices must be followed. The work practice standards are summarized in the "Small Entity Compliance Guide." Work practices specifically prohibited include open-flame burning using heat guns at greater than 1,100 degrees Fahrenheit and the use of power tools without the use of high-efficiency particulate air (HEPA) vacuums to collect the dust.

Recordkeeping Requirements: All documents must be retained for at least three years following completion of a regulated renovation, repair or painting activity. This includes reports certifying that lead-based paint is not present, records relating to the distribution of the lead pamphlet ("Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools"), any signed and dated statements from owner-occupants that the requirements do not apply to their location, and documentation of compliance with the Lead-Based Paint Renovation, Repair and Painting Program rules. Compliance Assistance: Additional information about the dangers from lead and lead-based paint, the statutory and regulatory requirements of the lead-based paint program, how to obtain copies of various forms, brochures and pamphlets and how to receive training and certification is available at www.epa.gov/lead or by calling the National Lead Information Center at 800-424-5323. A compendium of lead information and links for contractors on renovation, repair and painting can be found at:
www.epa.gov/lead/pubs/renovation.htm#contractors

Impacts or possible impacts

health problems due to lead contaminations

improper disposal of lead contaimnated products.

Goals

Comply with laws and regulations

Prevent pollutions

Measurable Targets

Priority facilities are defined as those facilities frequented by children (Table 3-1) and therefore pose the greatest potential LBP hazard on the Arsenal. If LBP is found within these facilities, they normally will receive the highest priority for in-place management or material replacement. Risk assessments and comprehensive surveys are only required for priority facilities. The LBPMP shall target the facilities that were built before 1978.

Table 3-1

Priority	Description
1	Child development center, annexes and playground equipment
2	Youth centers, recreational facilities and playground
3	Churches and chapels

Review and update the list of structures designated as prioirty facilities in the LBPMP by June 30, 2009. (The list above is up-to-date)

Perform a semi-annual review and evauluation of interim control measures that have been implemented to reduce human exposue to ensure effectiveness. (The structures listed above are monitored on an annual basis)

Respond to customer requests within 2-days to collect lbp sample.

Review demolision plans to verify they comply with applicable regs. Cite.

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Letters of Instructions

Legal Requirements

AR-200-1, Chapter 9.2 and Alabama Department of Public Health (APH) regulations Chapter 420-3-27, for Lead-Based Paint Contractor Certification.

29 Code of Federal Regulations (CFR) 1926.62, Lead Exposure in Construction.

29 CFR 1910.1025, General Industry Lead Standard (address worker exposure to lead).

Title X- The Residential Lead-Based Paint Reduction Act.

Training Requirements

Abatement contractor training required by LBPMP required by AR-200-1, Chapter 9.2 and Alabama Department of Public Health (APH) regulations Chapter 420-3-27.

Assessor training required for LBP Manager

Painters are certified by their contractors.

Awareness

EMD Web Page:
The Lead Based Paint Web page is on the page linked:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/toxics/toxics.html
The page was checked by Terry Hazle on 11/14/201 and determined to be adaquate for Environmental awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

_____

discuss fate of lead based construction debris

LBP Management Plan

Required Permits

No permit required.

Required Plans

Redstone Arsenal Lead Based Paint Management Plan- Hard copy available for review in EMD office. Updated March 2009. A new LBP managemnet plan will be out in 2011.

Required Records

Analytical data from debris.

Monitoring/Measuring Requiremens

LEAD JOB CHECKLIST

Resident Name: _____ Job # _____
Phone: _____Address/Apt.# _____

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1. Was the building built before 1978? Yes No

If you don't know when the building was built, treat the paint as lead-based paint. If the building was built after 1978, then lead-based paint is probably not present and this is not a lead job.

If the building was built before 1978, then treat the paint as lead-based paint, unless a paint inspection report says that no lead-based paint is present.

2. Could this job: (Y=Yes, N=No)

Create dust that may contain lead? Y N
Disturb known or suspected lead-based paint ? Y N
Require cleanup of dust or debris that may contain lead? Y N
Disturb known or suspected lead contaminated soil? Y N

3. If "Yes" to any of the above, or if you don't know the answer to any of the questions, assume you are dealing with lead-based paint, and circle the level of risk below.

LOW RISK =
Low levels of dust expected to be generated, and
surface and paint in good condition, and
Less than two (2) square feet.

HIGH RISK =
High levels of dust expected to be generated, or
Surface and paint in poor condition, or
Greater than two (2) square feet.

4. Who will do the job? Personnel must be properly trained and skilled, if they will have to wear a respirator, they must be medically qualified, fit-tested, and trained.

Name _____ Name _____

5. How will residents be notified and affected?

Notification: Phone _____ Letter _____ Time_____ Date_____

Work area instructions to residents
Job scheduled: FORM: Time/Date ___TO: Time/ Date___
Resident asked to leave unit: FORM: Time/Date ___TO: Time/ Date__

Resident asked to move personal items? Yes No

Temporary accommodations needed for resident? Yes No
Temporary accommodations needed for resident? Yes No

If "Yes" accommodation provided? Yes No
If "Yes" WHERE _____ PHONE # _____

6. How will work be performed to minimize exposure to lead? Circle specific cards to use for this job:

Materials Card
Equipment Card
Personal Protection Card
Work Practices Card
Prohibited and Unsafe Practices
Cleanup Cards
Carpet Removal Card
Decontamination Card
Quality Control Card

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Calibration

The X-Ray fluorescent gun (XRF) is calibrated at each use. The only maintenance required is to re-source the analyzer every 6 years. Our current instrument is 1 year old.

What Significant Impacts Are

Responsible Person(s)

Army policy is dedicated to providing safe and healthful work facilities for soldiers and civilians, and complying with federal and state occupational health and safety standards. Redstone Arsenal (RSA) personnel and contractors all share responsibility for minimizing their exposure to lead. The Army has adopted the standard work practices contained in the Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (July 1995) and other national consensus standards. This Lead Based Paint Management Plan (LBPMP) has been prepared to incorporate current Lead Based Paint (LBP) activities at RSA along with guidance from Public Works Technical Bulletin 420-70-2, Installation Lead Hazard Management, dated February 20, 1997 in accordance with Army Regulations (AR-200-1, Chapter 9-2d(4)(d) and the Alabama Department of Public Health (APH) regulations Chapter 420-3-27, Lead Hazardous Reduction Contractor Certification. The LBPMP is designed to be an evolving document that tracks LBP-related projects on a facility-by-facility basis. In addition, the LBPMP shall be reviewed and evaluated for its effectiveness periodically and updated as necessary.

The consumer Product Safety Act restricted the amount of lead permitted in paints that were manufactured after February 1978, for sale directly to consumers and in paint to be used in residences, schools, hospitals, parks, playgrounds, public buildings, and other areas where consumers could have direct access to painted surfaces. Federal law does not currently regulate LBP used in industrial facilities.

LBP activities for construction areas are regulated by two Occupational Safety and Health Administration (OSHA) standards, 29 Code of Federal Regulations (CFR) 1926.62, Lead Exposure in Construction, and 29 CFR 1910.1025, General Industry Lead Standard, which address worker exposure to lead. A summary of the applicability of each is provided below.

•1926.62, Lead Exposure in Construction- This standard applies to all construction work where an employee may be occupationally exposed to lead. Construction work is defined as work for construction, alteration and/or repair including painting and decorating and includes the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contains lead, or materials containing lead;
- Installation of products containing lead;
- Lead contamination/emergency cleanup;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- Maintenance operations associated with the construction activities described above.

•1910.1025, General Industry Lead Standard- This standards applies to all potential occupational exposures to lead not covered under the construction standard, 29 CFR 1926.62, or agricultural operations, which are covered by 29 CFR 1928.

Both of these standards contain respiratory protection requirements in addition to those outlined in 29 CFR 1910.134, Respiratory Protection. A comprehensive list of applicable standards and regulations are included in Appendix A. of Redstone Arsenal Lead-Based paint Management Plan.

DoD has an ongoing program, the Defense Environmental Restoration Program, to identify, assess, investigate, and clean up contamination from hazardous substances, pollutants, and wastes resulting from past activities at operational installations and Formerly Used Defense Sites where DoD is the principal responsible party. Although the Environmental

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Protection Agency (EPA) concluded that the release of lead to soil from LBP from structures falls within the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) definition of a hazardous substance release, EPA and DOD agree that for the majority of situations involving target housing, The Residential Lead-Based Paint Reduction Act, Title X, is sufficiently protective to address the hazards posed by LBP.

Resources

Adminstration Overhead Cost (Chief's Office) - 0 Hours - $0
Program Manager- 52 Hours - $2,949
Provide GIS support - 65 hours per year - $3,087

No required contract costs

Sustainability

In order the sustain the target structures(i.e. daycare and Chapel), monitoring for LBP has been established to ensure the safety of children's exposure to LBP. EPA requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes, child care facilities and schools be certified by EPA and that they use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices.
The presence of LBP in a building does not mean that the health of building occupants is endangered. As long as this material remains in good condition and is not disturbed, their presence does not represent a hazard. However, through the Record of Environmental Consideration (REC) process, the Garrison Environmental office staff will review and comment on demolition and renovation projects with properties constructed prior to 1978, to identify any hazards prior to commencing work.

Consequences

Health

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

What is the status of the new lead base paint rule and training requirements for painters?(See discussion tap)
Have we done anything for lead base paint awareness? Yes, we have. We have posted LBP information and the Lead-Based Paint Management Plan dated, March 19, 2012, on Redstone Garrision website. The posted LBP information is strictly for the purpose of lead awareness and management on Redstone Arsenal.
When was our gun last calibrated and when does it need to be calibrated? The gun is calibrated at each usage. Shots are taken of a Quality Control panel before and after the sample shots.
Define who is responsible for what. (Duties and Responsibilities are incorporated in the LBP Plan)
How do we manage to sustain missions, community and the environment? (See Sustainability tab)

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
24	**PCB**	Dan Seaver

Discussion

PCBs are an environmental element of equipment and real property management which are services that occur on Redstone Arsenal. There are laws and regulations that are designed to properly manage PCBs. Redstone arsenal does expend resources to manage PCBs. It has been determined that PCBs are a significant environmental aspect that will be managed as part of the Environmental Management System on Redstone Arsenal.

Impacts or possible impacts

Contamination of soil or groundwater: Once in the environment, PCBs do not readily break down and therefore may remain for long periods of time cycling between air, water, and soil. PCBs can be carried long distances and have been found in areas far away from where they were released into the environment. PCBs can accumulate in the leaves and above-ground parts of plants and food crops. They are also taken up into the bodies of small organisms and fish. As a result, people who ingest fish may be exposed to PCBs that have bioaccumulated in the fish they are ingesting.

Human health effects - Human explosure to PCBs cause harm to the immune, reproductive, nervous, and endocrine systems. PCBs cause cancer in animals and are probably carcinogenic in humans. Recent evidence suggests that PCBs might also have adverse reproductive, developmental, and endocrine effects.

Goals

Comply with laws and regulations about PCBs.

Prevent human exposure to PCB hazards on Army-owned property and maintain compliance with pertinent regulations.

Prevent pollution.

Measurable Targets

Perform weekly inspections on all PCB items stored to ensure compliance with applicable regulations and maintain an inspection log. Weekly inspections will be conducted in accordance with RSA 200-6, Appendix H, paragraph 5.

Letters of Instructions

Legal Requirements

40 CFR, Part 761 - (Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions)
40 CFR, Part 761.65 (Regulates PCB Storage)
40 CFR, Part 761.123 (PCB Spill Response and Cleanup)
40 CFR, Part 761.180 (General Records and Reports)
40 CFR, Part 761, Subpart K (PCB Waste Disposal Records and Reports)

49 CFR, Part 172.300 (regulates PCB containers)

Training Requirements

AR-200-1, paragraphs 1-26.(e)and 9-2.c(4)(c) - Employers will ensure personnel who handle or may potentially be exposed to PCBs to perform PCB-related responsibilities receive the required environmental training and trained in a safe and environmentally sound manner in accordance with 29 CFR 1910.1200 and 1910.120(q).

Awareness

EMD Web Page:
The Polychlorinated Biphenyls (PCBs)web page is on the page linked:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/toxics/toxics.html
The page was checked by Terry Hazle on 11/14/201 and determined to be adaquate for Environmental awareness.

Communications

Chugach provides an annual log in July.

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

There are no required permits. PCB transformers (>500 ppm) must be registered with EPA. Currently there are no known PCB transformers on Redstone Arsenal.

Required Plans

(RSA 200-6, APPENDIX H)

POLYCHLORINATED BIPHENYLS (PCB) STANDARD OPERATING PROCEDURES

Required Records

Records will be maintained in accordance with 40 CFR 761, Subparts J (General Records and Reports) and K (PCB Waste Disposal Records and Reports).

All annual records (manifests and certificates of disposal) and the written annual document log of the disposition of PCBs and PCB items must be developed and maintained . The annual document log must be prepared in accordance with 40 CFR 761.180(a)(1) by 1 July covering the previous calendar year (January through December). The log must be submitted to the Environmental Management Division by 1 July of each year.

All annual records and the annual document log shall be maintained for at least 3 years after the facility ceases using or storing PCBs and PCB items.

The PCB Annual Document Logs and manifests are maintained in the Environmental Management Division, US Army - Garrison, Redstone Arsenal, AL.

The Certificates of Disposal are maintained at the DLA Disposition Services Center-Huntsville (formerly DRMO-Huntsville), Bldg 7408 Warehouse Road, Redstone Arsenal, AL.

A PCB Inspection was conducted by Bill Hogan, ADEM Land Division, under contract from EPA, on our PCB Program on 20 May 2010. No PCB concerns were identified.

Monitoring/Measuring Requiremens

A PCB Inspection was conducted by Bill Hogan, ADEM Land Division, under contract from EPA, on our PCB Program on 20 May 2010. No PCB concerns were identified.

PCB Annual Report submitted in JULY 2013.

Calibration

Records will be maintained in accordance with 40 CFR 761, Subparts J (General Records and Reports) and K (PCB Waste Disposal Records and Reports).

All annual records (manifests and certificates of disposal) and the written annual document log of the disposition of PCBs and PCB items must be developed and maintained . The annual document log must be prepared in accordance with 40 CFR 761.180(a)(1) by 1 July covering the previous calendar year (January through December). The log must be submitted to the Environmental Management Division by 1 July of each year.

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All annual records and the annual document log shall be maintained for at least 3 years after the facility ceases using or storing PCBs and PCB items.

The PCB Annual Document Logs and manifests are maintained in the Correspondence Log in the Environmental Management Division, US Army - Garrison, Redstone Arsenal, AL. A hard copy of PCB files and the annual logs are also maintained in the Environmental Management Division, Room A-332 (file cabinet).

The Certificates of Disposal are maintained at the DLA Disposition Services-Huntsville (formerly DRMO-Huntsville), Bldg 7408 Warehouse Road, Redstone Arsenal, AL.

A PCB Inspection was conducted by Bill Hogan, ADEM Land Division, under contract from EPA, on our PCB Program on 20 May 2010. No PCB concerns were identified.

What Significant Impacts Are

PCBs are a probable human carcinogen.

Human exposure to PCBs cause harm to the immune, reproductive, nervous, and endocrine systems.

Responsible Person(s)

The DLA Disposition Services-Huntsville (formerly DRMO-Huntsville) is responsible for developing and maintaining all annual PCB records and preparing the written annual document log of the disposition of PCBs and PCB items. The annual document log must be prepared in accordance with 40 CFR 761.180(a)(1) by 1 July covering the previous calendar year (January through December). The DRMO-Huntsville shall submit the annual document log to the Environmental Management Division by 1 July of each year.

Resources

Adminstration Overhead Cost (Chief's Office) - 137 Hours - $6423

Program Manager 10 hours - $567
Environmental Database hours - 15 hours $750

No required contracts

DRMO develops and maintains annual report.

Sustainability

Consequences

If you do not follow the PCB waste management and permitting standards listed in 40 CFR Part 761, you may be fined in civil penalties of up to $32,500 per day per violation. You also may be fined if you release PCB waste into the environment. You can lose any existing permits for your construction site and/or need to stop work until you meet EPA requirements.

Annual Review

The annual (July 2013) PCB log was prepared on schedule. There are no PCB regulated items on site according to Chugach.

The annual PCB log was prepared on schedule. There are no PCB regulated items on site according to Chugach.

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Have we done anything to make people aware of PCB’s on Redstone? RSA 200-6, Standard Operating Procedures for PCB Management.
What should we do? Ensure transformers and/or other PCB contaminated electrical equipment are managed and disposed of in accordance with 40 CFR 761.
Are no permits required for PCBs? No, Managed under TSCA Regulations 40 CFR 761. PCB transformers (>500 ppm) must be registered with EPA. Currently there are no known PCB transformers on Redstone Arsenal.

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Do we have the required records? Yes
Where are they? The PCB Annual Document Logs and manifests are maintained in the Correspondence Log in the Environmental Management Division, US Army - Garrison, Redstone Arsenal, AL. A hard copy of PCB files and the annual logs are also maintained in the Environmental Management Division, Room A-332 (file cabinet).
There was none under calibration. Posted information under the Calibration module.
How do you sustain management of PCBs? Weekly inspection of storage areas that store PCB's.
What are the consequences of not managing PCBs correctly? If you do not follow the PCB waste management and permitting standards listed in 40 CFR Part 761, you may be fined in civil penalties of up to $32,500 per day per violation. You also may be fined if you release PCB waste into the environment.

All annual records (manifests and certificates of disposal) and the written annual document log of the disposition of PCBs and PCB items must be available for inspection by authorized state and federal representatives during normal business hours. All required records are available for inspection upon request.

The PCB Annual Document Logs and manifests are maintained in the Correspondence Log in the Environmental Management Division, US Army - Garrison, Redstone Arsenal, AL. A hard copy of PCB files and the annual logs are also maintained in the Environmental Management Division, Room A-332 (file cabinet).

The Certificates of Disposal are maintained at the DLA Disposition Services-Huntsville (formerly DRMO-Huntsville), Bldg 7408 Warehouse Road, Redstone Arsenal, AL.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
25	**Light Bulb Management**	Dan Seaver

Discussion

Light bulb management is an environmental element of building management and building maintenance on Redstone Arsenal. There are thousands of light bulbs on Redstone Arsenal. A large number of these are bulbs that have to be managed under regulations when they no longer have a useful purpose. Light bulb management is a significant environment aspect that will be managed at part of Redstone Arsenal Environmental Management System.

Some of the old lighting systems consist of fluorescent lights. There is a possibility the ballasts in the old fluorescent lighting systems could contain polychlorinated biphenyls (PCBs). Light ballasts are the primary electric components of fluorescent light fixtures and are generally located within the fixture under a metal cover plate. The ballast units are generally composed of a transformer to reduce the incoming voltage, a small capacitor (which may contain 1 to 1 1/2 ounces of PCBs), and possibly a thermal cut-off switch and/or safety fuse. All ballasts manufactured through 1979 contain PCBs. Ballasts manufactured after 1979 do not contain PCBs and should be labeled No PCBs. If the ballasts are not labeled, you must assume they contain PCBs and dispose of in accordance with 40 CFR Part 761. If the ballasts are labeled No PCBs they can be discarded as normal trash.

Impacts or possible impacts

Bulbs could break and spread Mercury contaminated dust.

We could be cited and fined.

Some of the old lighting systems consist of fluorescent lights. There is a possibility the ballasts in the old fluorescent lighting systems could contain polychlorinated biphenyls (PCBs). Light ballasts are the primary electric components of fluorescent light fixtures and are generally located within the fixture under a metal cover plate. The ballast units are generally composed of a transformer to reduce the incoming voltage, a small capacitor (which may contain 1 to 1 1/2 ounces of PCBs), and possibly a thermal cut-off switch and/or safety fuse. All ballasts manufactured through 1979 contain PCBs. Ballasts manufactured after 1979 do not contain PCBs and should be labeled No PCBs. If the ballasts are not labeled, you must assume they contain PCBs and dispose of in accordance with 40 CFR Part 761. If the ballasts are labeled No PCBs they can be discarded as normal trash.

Goals

Comply with laws and regulations.

Prevent pollution.

Measurable Targets

Sent out letter of instructions on light bulb management, on 13 August 2009, to Chugach and Phoenix personnel.

Incorporate light bulb management procedures into the fiscal year 2012 RCRA training classes.

Perform compliance inspections for florescent light bulb management at 30 building by 30 Sep 2012.

Cleanup and turn-in procedures for broken florescent light bulbs: Follow all safety and spill response procedures before attempting clean-up. Broken florescent light bulbs must be immediately placed inside an appropriate container with a tight fitting lid. Mark the container with the name of its contents and the accumulation start date. A Form 1348-1a and hazardous waste profile sheet must be completed and submitted to the environmental management division, environmental coordinator. The documentation will be processed and electronically submitted the DLA Disposition Services Office. The DLA Distribution Services Office environmentalist will contact the generator and setup an appointment to turn-in the containerized waste.

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Letters of Instructions

Legal Requirements

Only the stuff pertaining to lamp management was retainted in the following ADEM regulation

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
LAND DIVISION - HAZARDOUS WASTE PROGRAM
CHAPTER 335-14-11
STANDARDS FOR UNIVERSAL WASTE MANAGEMENT
TABLE OF CONTENTS

335-14-11-.01General
335-14-11-.02Standards for Small Quantity Handlers of Universal Waste (these were removed because redstone is not a small quality generator)
335-14-11-.03Standards for Large Quantity Handlers of Universal Waste
335-14-11-.04Standards for Universal Waste Transporters
335-14-11-.05Standards for Destination facilities
335-14-11-.06Import Requirements (these were removed because redstone is not an importer)
335-14-11-.07Petitions to Include Other Wastes Under
Chapter 335-14-11 (these were removed because this aspect deals with management)

335-14-11-.01General
(1)Scope.
(a)335-14-11 establishes requirements for managing the following:
1.Batteries as described in 335-14-11-.01(2);
2.Pesticides as described in 335-14-11-.01(3);
3.Thermostats as described in 335-14-11-.01(4); and
4.Lamps as described in 335-14-11-.01(5).
(b)335-14-11 provides an alternative set of management standards in lieu of regulation under 335-14-1 through 335-14-9.
(2)Applicability—batteries.
(a)Batteries covered under 335-14-11.
1.The requirements of 335-14-11 apply to persons managing batteries, as described in 335-14-1-.02(1), except those listed in 335-14-11-.01(2)(b).
2.Spent lead-acid batteries which are not managed under 335-14-7-.07 are subject to management under 335-14-11.
(b)Batteries not covered under 335-14-11. The requirements of 335-14-11 do not apply to persons managing the following batteries:
1.Spent lead-acid batteries that are managed under 335-14-7-.07.
2.Batteries, as described in 335-14-1-.02(1), that are not yet wastes under 335-14-2, including those that do not meet the criteria for waste generation in 335-14-11-.01(2)(c).
3.Batteries, as described in 335-14-1-.02(1), that are not hazardous waste. A battery is a hazardous waste if it exhibits one or more of the characteristics identified in 335-14-2-.03.
(c)Generation of waste batteries.
1.A used battery becomes a waste on the date it is discarded (e.g., when sent for reclamation).
2.An unused battery becomes a waste on the date the handler decides to discard it.
(3)Applicability—pesticides.
(a)Pesticides covered under 335-14-11. The requirements of 335-14-11 apply to persons managing pesticides, as described in 335-14-1-.02(1), meeting the following conditions, except those listed in 335-14-11-.01(3)(b):
1.Recalled pesticides that are:
(i)Stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under FIFRA section 19(b), including, but not limited to those owned by the registrant responsible for conducting the recall; or
(ii)Stocks of a suspended or cancelled pesticide, or a pesticide that is not in compliance with FIFRA, that are part of a voluntary recall by the registrant.
2.Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.
(b)Pesticides not covered under 335-14-11. The requirements of 335-14-11 do not apply to

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persons managing the following pesticides:
1.Recalled pesticides described in 335-14-11-.01(3)(a)1., and unused pesticide products described in 335-14-11-.01(3)(a)2., that are managed by farmers in compliance with 335-14-3-.07(1). (335-14-3-.07(1) addresses pesticides disposed of on the farmer's own farm in a manner consistent with the disposal instructions on the pesticide label, providing the container is triple rinsed in accordance with 335-14-2-.01(7)(b)3.);
2.Pesticides not meeting the conditions set forth in 335-14-11-.01(3)(a). These pesticides must be managed in compliance with the hazardous waste regulations in 335-14-1 through 335-14-9;
3.Pesticides that are not wastes under 335-14-2, including those that do not meet the criteria for waste generation in 335-14-11-.01(3)(c) or those that are not wastes as described in 335-14-11-.01(3)(d); and
4.Pesticides that are not hazardous waste. A pesticide is a hazardous waste if it is listed in 335-14-2-.04 or if it exhibits one or more of the characteristics identified in 335-14-2-.03.
(c)When a pesticide becomes a waste.
1.A recalled pesticide described in 335-14-11-.01(3)(a)1. becomes a waste on the first date on which both of the following conditions apply:
(i)The generator of the recalled pesticide agrees to participate in the recall; and
(ii)The person conducting the recall decides to discard (e.g., burn the pesticide for energy recovery).
2.An unused pesticide product described in 335-14-11-.01(3)(a)2. becomes a waste on the date the generator decides to discard it.
(d)Pesticides that are not wastes. The following pesticides are not wastes:
1.Recalled pesticides described in 335-14-11-.01(3)(a)1., provided that the person conducting the recall:
(i)Has not made a decision to discard (e.g., burn for energy recovery) the pesticide. Until such a decision is made, the pesticide does not meet the definition of "solid waste" under 335-14-2-.01(2); thus the pesticide is not a hazardous waste and is not subject to hazardous waste requirements, including 335-14-11. This pesticide remains subject to the requirements of FIFRA; or
(ii)Has made a decision to use a management option that, under 335-14-2-.01(2), does not cause the pesticide to be a solid waste [i.e., the selected option is use (other than use constituting disposal) or reuse (other than burning for energy recovery), or reclamation]. Such a pesticide is not a solid waste and therefore is not a hazardous waste, and is not subject to the hazardous waste requirements including 335-14-11. This pesticide, including a recalled pesticide that is exported to a foreign destination for use or reuse, remains subject to the requirements of FIFRA.
2.Unused pesticide products described in 335-14-11-.01(3)(a)2., if the generator of the unused pesticide product has not decided to discard (e.g., burn for energy recovery) them. These pesticides remain subject to the requirements of FIFRA.
(4)Applicability—mercury thermostats.
(a)Thermostats covered under 335-14-11. The requirements of 335-14-11 apply to persons managing thermostats, as described in 335-14-1-.02(1), except those listed in 335-14-11-.01(4)(b).
(b)Thermostats not covered under 335-14-11. The requirements of 335-14-11 do not apply to persons managing the following thermostats:
1.Thermostats that are not yet wastes under 335-14-2. 335-14-11-.01(4)(c) describes when thermostats become wastes.
2.Thermostats that are not hazardous waste. A thermostat is a hazardous waste if it exhibits one or more of the characteristics identified in 335-14-2-.03.
(c)Generation of waste thermostats.
1.A used thermostat becomes a waste on the date it is discarded (e.g., sent for reclamation).
2.An unused thermostat becomes a waste on the date the handler decides to discard it.
(5)Applicability—Lamps.
(a)Lamps covered under 335-14-11. The requirements of 335-14-11 apply to persons managing lamps, as described in 335-14-1-.02(1), except those listed in 335-14-11-.01(5)(b).
(b)Lamps not covered under 335-14-11. The requirements of 335-14-11 do not apply to persons managing the following lamps:
1.Lamps that are not yet wastes under 335-14-2. 335-14-11-.01(5)(c) describes when lamps

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become wastes.
2.Lamps that are not hazardous waste. A lamp is a hazardous waste if it exhibits one or more of the characteristics identified in 335-14-2-.03.
(c)Generation of waste lamps.
1.A used lamp becomes a waste on the date it is discarded (e.g., sent for reclamation).
2.An unused lamp becomes a waste on the date the handler decides to discard it.
(6)Reserved.
(7)Reserved.
(8)Applicability—household and conditionally exempt small quantity generator waste.
(a)Persons managing the wastes listed below may, at their option, manage them under the requirements of 335-14-11:
1.Household wastes that are exempt under 335-14-2-.01(4)(b)1. and are also of the same type as the universal wastes defined at 335-14-1-.02(1); and/or
2.Conditionally exempt small quantity generator wastes that are exempt under 335-14-2-.01(5) and are also of the same type as the universal wastes defined at 335-14-1-.02(1).
(b)Persons who commingle the wastes described in 335-14-11-.01(8)(a)1. and (a)2. together with universal waste regulated under 335-14-11 must manage the commingled waste under the requirements of 335-14-11.
(9)[Reserved]
Author: Amy P. Zachry; Michael B. Jones; C. Edwin Johnston; Lynn T. Roper; Bradley N. Curvin.
Statutory Authority: Code of Alabama 1975, §§ 22-30-11, 22-30-14, 22-30-15, and 22-30-16.
History: January 12, 1996;
Amended: March 28, 1997; March 27, 1998; March 31, 2000; April 13, 2001; March 31, 2005.

335-14-11-.03Standards for Large Quantity Handlers of Universal Waste
(1)Applicability. 335-14-11-.03 applies to large quantity handlers of universal waste [as defined in Rule 335-14-1-.02(1)].
(2)Prohibitions. A large quantity handler of universal waste is:
(a)Prohibited from disposing of universal waste; and
(b)Prohibited from diluting or treating universal waste, except by responding to releases as provided in 335-14-11-.03(8); or by managing specific wastes as provided in 335-14-11-.03(4) or 335-14-8-.01(1)(c)2.(x).
(3)Notification.
(a)1.Except as provided in 335-14-11-.03(3)(a)2. and 3., a large quantity handler of universal waste must have sent written notification of universal waste management to the Department, and received an EPA Identification Number, before meeting or exceeding the 5,000 kilogram storage limit.
2.A large quantity handler of universal waste who has already notified the Department of his hazardous waste management activities and has received an EPA Identification Number is not required to renotify under 335-14-11-.03(3).
3.A large quantity handler of universal waste who manages recalled universal waste pesticides as described in 335-14-11-.01(3)(a)1. and who has sent notification to EPA as required by 40 CFR Part 165 is not required to notify for those recalled universal waste pesticides under 335-14-11-.03(3).
(b)This notification must include:
1.The universal waste handler’s name and mailing address;
2.The name and business telephone number of the person at the universal waste handler’s site who should be contacted regarding universal waste management activities;
3.The address or physical location of the universal waste management activities;
4.A list of all of the types of universal waste managed by the handler (e.g., batteries, pesticides, thermostats, lamps);
5.A statement indicating that the handler is accumulating more than 5,000 kilograms of universal waste at one time and the types of universal waste (e.g., batteries, pesticides, thermostats, lamps) the handler is accumulating above this quantity.
(4)Waste management.
(a)Universal waste batteries. A large quantity handler of universal waste must manage universal waste batteries in a way that prevents release of any universal waste or component of a universal waste to the environment, as follows:
1.A large quantity handler of universal waste must contain any universal waste battery that

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shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the battery, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
2.A large quantity handler of universal waste may conduct the following activities as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte but must be immediately closed after removal):
(i)Sorting batteries by type;
(ii)Mixing battery types in one container;
(iii)Discharging batteries so as to remove the electric charge;
(iv)Regenerating used batteries;
(v)Disassembling batteries or battery packs into individual batteries or cells;
(vi)Removing batteries from consumer products; or
(vii)Removing electrolyte from batteries.
3.A large quantity handler of universal waste who removes electrolyte from batteries, or who generates other solid waste (e.g., battery pack materials, discarded consumer products) as a result of the activities listed above, must determine whether the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste identified in Rule 335-14-2-.03.
(i)If the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of 335-14-1 through 335-14-9. The handler is considered the generator of the hazardous electrolyte and/or other waste and is subject to 335-14-3.
(ii)If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, State of Alabama, or local solid waste regulations.
(b)Universal waste pesticides. A large quantity handler of universal waste must manage universal waste pesticides in a way that prevents release of any universal waste or component of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:
1.A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions; or
2.A container that does not meet the requirements of 335-14-11-.03(4)(b)1., provided that the unacceptable container is overpacked in a container that does meet the requirements of 335-14-11-.03(4)(b)1.; or
3.A tank that meets the requirements of Rule 335-14-6-.10, except for 335-14-6-.10(8)(e), (11), and (12); or
4.A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
(c)Universal waste thermostats. A large quantity handler of universal waste must manage universal waste thermostats in a way that prevents release of any universal waste or component of a universal waste to the environment, as follows:
1.A large quantity handler of universal waste must contain any universal waste thermostat that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the thermostat, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
2.A large quantity handler of universal waste may remove mercury-containing ampules from universal waste thermostats provided the handler:
(i)Removes the ampules in a manner designed to prevent breakage of the ampules;
(ii)Removes ampules only over or in a containment device (e.g., tray or pan sufficient to contain any mercury released from an ampule in case of breakage);
(iii)Ensures that a mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules, from the containment device to a container that meets the requirements of 335-14-3-.03(5);
(iv)Immediately transfers any mercury resulting from spills or leaks from broken ampules from the containment device to a container that meets the requirements of 335-14-3-.03(5);

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(v)Ensures that the area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury;
(vi)Ensures that employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;
(vii)Stores removed ampules in closed, non-leaking containers that are in good condition;
(viii)Packs removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation; and
3.(i)A large quantity handler of universal waste who removes mercury-containing ampules from thermostats must determine whether the following exhibit a characteristic of hazardous waste identified in Rule 335-14-2-.03:
(I)Mercury or clean-up residues resulting from spills or leaks; and/or
(II)Other solid waste generated as a result of the removal of mercury-containing ampules (e.g., remaining thermostat units).
(ii)If the mercury, residues, and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of 335-14-1 through 335-14-9. The handler is considered the generator of the mercury, residues, and/or other waste and is subject to 335-14-3.
(iii)If the mercury, residues, and/or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, State of Alabama, or local solid waste regulations.
(d)Lamps. A large quantity handler of universal waste must manage lamps in a way that prevents release of any universal waste or component of a universal waste to the environment, as follows:
1.A large quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
2.A large quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.
(5)Labeling/marking. A large quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:
(a)Universal waste batteries (i.e., each battery), or a container or tank in which the batteries are contained, must be labeled or marked clearly with the any one of the following phrases: “Universal Waste-Battery(ies)”, or “Waste Battery(ies)”, or “Used Battery(ies)”;
(b)A container (or multiple container package unit), tank, transport vehicle or vessel in which recalled universal waste pesticides as described in 335-14-11-.01(3)(a)1. are contained must be labeled or marked clearly with:
1.The label that was on or accompanied the product as sold or distributed; and
2.The words “Universal Waste—Pesticide(s)” or “Waste-Pesticide(s)”;
(c)A container, tank, or transport vehicle or vessel in which unused pesticide products as described in 335-14-11-.01(3)(a)2. are contained must be labeled or marked clearly with:
1.(i) The label that was on the product when purchased, if still legible;
(ii)If using the labels described in 335-14-11-.03(5)(c)1.(i) is not feasible, the appropriate label as required under the Department of Transportation regulation 49 CFR Part 172;
(iii)If using the labels described in 335-14-11-.03(5)(c)1.(i) and (ii) is not feasible, another label prescribed or designated by the pesticide collection program; and
2.The words “Universal Waste-Pesticide(s)” or “Waste-Pesticide(s)”.
(d)Universal waste thermostats (i.e., each thermostat), or a container or tank in which the thermostats are contained, must be labeled or marked clearly with any one of the following phrases: “Universal Waste-Mercury Thermostat(s)”, or “Waste Mercury Thermostat(s)”, or “Used Mercury Thermostat(s)”.
(e)Each lamp or a container or package in which the lamps are contained must be labeled or

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marked clearly with any one of the following phrases: “Universal Waste -- Lamp(s)”, or “Waste Lamp(s)”, or “Used Lamp(s)”.
(6)Accumulation time limits.
(a)A large quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of 335-14-11-.03(6)(b) are met.
(b)A large quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity was solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.
(c)A large quantity handler of universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:
1.Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;
2.Marking or labeling the individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received;
3.Maintaining an inventory system on-site that identifies the date the universal waste being accumulated became a waste or was received;
4.Maintaining an inventory system on-site that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;
5.Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or
6.Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.
(7)Employee training. A large quantity handler of universal waste must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.
(8)Response to releases.
(a)A large quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes.
(b)A large quantity handler of universal waste must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of 335-14-1 through 335-14-9. The handler is considered the generator of the material resulting from the release, and is subject to 335-14-3.
(9)Off-site shipments.
(a)A large quantity handler of universal waste is prohibited from sending or taking universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination.
(b)If a large quantity handler of universal waste self-transports universal waste off-site, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of 335-14-11-.04 while transporting the universal waste.
(c)If a universal waste being offered for off-site transportation meets the definition of hazardous materials under 49 CFR 171 through 180, a large quantity handler of universal waste must package, label, mark and placard the shipment, and prepare the proper shipping papers in accordance with the applicable Department of Transportation regulations under 49 CFR Parts 172 through 180;
(d)Prior to sending a shipment of universal waste to another universal waste handler, the originating handler must ensure that the receiving handler agrees to receive the shipment.
(e)If a large quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler must either:
1.Receive the waste back when notified that the shipment has been rejected, or
2.Agree with the receiving handler on a destination facility to which the shipment will be sent.

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(f)A large quantity handler of universal waste may reject a shipment containing universal waste, or a portion of a shipment containing universal waste that he has received from another handler. If a handler rejects a shipment or a portion of a shipment, he must contact the originating handler to notify him of the rejection and to discuss reshipment of the load. The handler must:
1.Send the shipment back to the originating handler, or
2.If agreed to by both the originating and receiving handler, send the shipment to a destination facility.
(g)If a large quantity handler of universal waste receives a shipment containing hazardous waste that is not a universal waste, the handler must immediately notify the Department of the illegal shipment, and provide the name, address, and phone number of the originating shipper. The Department will provide instructions for managing the hazardous waste.
(h)If a large quantity handler of universal waste receives a shipment of non-hazardous, non-universal waste, the handler may manage the waste in any way that is in compliance with applicable federal, State of Alabama, or local solid waste regulations.
(10)Tracking universal waste shipments.
(a)Receipt of shipments. A large quantity handler of universal waste must keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:
1.The name and address of the originating universal waste handler or foreign shipper from whom the universal waste was sent;
2.The quantity of each type of universal waste received (e.g., batteries, pesticides, thermostats);
3.The date of receipt of the shipment of universal waste.
(b)Shipments off-site. A large quantity handler of universal waste must keep a record of each shipment of universal waste sent from the handler to other facilities. The record may take the form of a log, invoice, manifest, bill of lading or other shipping document. The record for each shipment of universal waste sent must include the following information:
1.The name and address of the universal waste handler, destination facility, or foreign destination to whom the universal waste was sent;
2.The quantity of each type of universal waste sent (e.g., batteries, pesticides, thermostats);
3.The date the shipment of universal waste left the facility.
(c)Record retention.
1.A large quantity handler of universal waste must retain the records described in 335-14-11-.03(10)(a) for at least three years from the date of receipt of a shipment of universal waste.
2.A large quantity handler of universal waste must retain the records described in 335-14-11-.03(10)(b) for at least three years from the date a shipment of universal waste left the facility.
(11)Exports. A large quantity handler of universal waste who sends universal waste to a foreign destination other than to those OECD countries specified in 335-14-3-.05(9)(a)1. (in which case the handler is subject to the requirements of Rule 335-14-3-.09) must:
(a)Comply with the requirements applicable to a primary exporter in Rules 335-14-3-.05(4), 335-14-3-.05(7)(a)1. through 4., (a)6., and (b), and 335-14-3-.05(8);
(b)Export such universal waste only upon consent of the receiving country and in conformance with the EPA Acknowledgement of Consent as defined in Rule 335-14-3-.05; and
(c)Provide a copy of the EPA Acknowledgement of Consent for the shipment to the transporter transporting the shipment for export.
Author: Amy P. Zachry; C. Edwin Johnston; Michael B. Jones; Lynn T. Roper; Michael B. Champion; Bradley N. Curvin.
Statutory Authority: Code of Alabama 1975, §§ 22-30-11, 22-30-14, 22-30-15, and 22-30-16.
History: January 12, 1996;
Amended: March 28, 1997; March 27, 1998; April 13, 2001; March 15, 2002; April 17, 2003; March 31, 2005.

335-14-11-.04Standards for Universal Waste Transporters
(1)Applicability. 335-14-11-.04 applies to universal waste transporters (as defined in 335-14-1-.02(1)).

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(2) Prohibitions. A universal waste transporter is:
(a) Prohibited from disposing of universal waste; and
(b) Prohibited from diluting or treating universal waste, except by responding to releases as provided in 335-14-11-.04(5).
(3) Waste management.
(a) A universal waste transporter must comply with all applicable U.S. Department of Transportation regulations in 49 CFR Part 171 through 180 for transport of any universal waste that meets the definition of hazardous material in 49 CFR 171.8. For purposes of the Department of Transportation regulations, a material is considered a hazardous waste if it is subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 335-14-3. Because universal waste does not require a hazardous waste manifest, it is not considered hazardous waste under the Department of Transportation regulations.
(b) Some universal waste materials are regulated by the Department of Transportation as hazardous materials because they meet the criteria for one or more hazard classes specified in 49 CFR 173.2. As universal waste shipments do not require a manifest under 335-14-3, they may not be described by the DOT proper shipping name "hazardous waste, (l) or (s), n.o.s.", nor may the hazardous material's proper shipping name be modified by adding the word "waste".
(4) Storage time limits.
(a) A universal waste transporter may only store the universal waste at a universal waste transfer facility for ten days or less.
(b) If a universal waste transporter stores universal waste for more than ten days, the transporter becomes a universal waste handler and must comply with the applicable requirements of 335-14-11-.02 or 335-14-11-.03 while storing the universal waste.
(5) Response to releases.
(a) A universal waste transporter must immediately contain all releases of universal wastes and other residues from universal wastes.
(b) A universal waste transporter must determine whether any material resulting from the release is hazardous waste, and if so, it is subject to all applicable requirements of 335-14-1 through 335-14-9. If the waste is determined to be a hazardous waste, the transporter is subject to 335-14-3.
(6) Off-site shipments.
(a) A universal waste transporter is prohibited from transporting the universal waste to a place other than a universal waste handler, a destination facility, or a foreign destination.
(b) If the universal waste being shipped off-site meets the Department of Transportation's definition of hazardous materials under 49 CFR 171.8, the shipment must be properly described on a shipping paper in accordance with the applicable Department of Transportation regulations under 49 CFR Part 172.
(7) Exports. A universal waste transporter transporting a shipment of universal waste to a foreign destination other than to those OECD countries specified in 335-14-3-.05(9)(a)1. (in which case the handler is subject to the requirements of Rule 335-14-3-.09) may not accept a shipment if the transporter knows the shipment does not conform to the EPA Acknowledgment of Consent. In addition the transporter must ensure that:
(a) A copy of the EPA Acknowledgment of Consent accompanies the shipment; and
(b) The shipment is delivered to the facility designated by the person initiating the shipment.
Author: Amy P. Zachry; Michael B. Jones; Lynn T. Roper; Bradley N. Curvin.
Statutory Authority: Code of Alabama 1975, §§ 22-30-11, 22-30-14, 22-30-15, and 22-30-16.
History: January 12, 1996;
Amended: March 28, 1997; March 27, 1998; April 13, 2001; March 31, 2005.

335-14-11-.05 Standards for Destination Facilities
(1) Applicability.
(a) The owner or operator of a destination facility (as defined in 335-14-1-.02(1)) is subject to all applicable requirements of 335-14-5 through 335-14-9 and the notification requirement under Section 3010 of RCRA:
(b) The owner or operator of a destination facility that recycles a particular universal waste without storing that universal waste before it is recycled must comply with 335-14-2-

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.01(6)(c)2.
(2)Off-site shipments.
(a)The owner or operator of a destination facility is prohibited from sending or taking universal waste to a place other than a universal waste handler, another destination facility or foreign destination.
(b)The owner or operator of a destination facility may reject a shipment containing universal waste, or a portion of a shipment containing universal waste. If the owner or operator of the destination facility rejects a shipment or a portion of a shipment, he must contact the shipper to notify him of the rejection and to discuss reshipment of the load. The owner or operator of the destination facility must:
1.Send the shipment back to the original shipper, or
2.If agreed to by both the shipper and the owner or operator of the destination facility, send the shipment to another destination facility.
(c)If the owner or operator of a destination facility receives a shipment containing hazardous waste that is not a universal waste, the owner or operator of the destination facility must immediately notify the appropriate regional EPA office and this Department of the illegal shipment, and provide the name, address, and phone number of the shipper. The Department will provide instructions for managing the hazardous waste.
(d)If the owner or operator of a destination facility receives a shipment of non-hazardous, non-universal waste, the owner or operator may manage the waste in any way that is in compliance with applicable federal or State of Alabama solid waste regulations.
(3)Tracking universal waste shipments.
(a)The owner or operator of a destination facility must keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:

1.The name and address of the universal waste handler, destination facility, or foreign shipper from whom the universal waste was sent;
2.The quantity of each type of universal waste received (e.g., batteries, pesticides, thermostats, lamps);
3.The date of receipt of the shipment of universal waste.
(b)The owner or operator of a destination facility must retain the records described in 335-14-11-.05(3)(a) for at least three years from the date of receipt of a shipment of universal waste.
Author: Amy P. Zachry; Lynn T. Roper; C. Edwin Johnston; Bradley N. Curvin.
Statutory Authority: Code of Alabama 1975, §§ 22-30-11, 22-30-14, 22-30-15, and 22-30-16.
History: January 12, 1996;
Amended: March 28, 1997; March 27, 1998; April 13, 2001; March 15, 2002; March 31, 2005.

Training Requirements

335-14-11-.03 Standards for Large Quantity Handlers of Universal Waste
(7) Employee training. A large quantity handler of universal waste must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.

(8) Response to releases.
(a)A large quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes.
(b))A large quantity handler of universal waste must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of 335-14-1 through 335-14-9. The handler is considered the generator of the material resulting from the release, and is subject to 335-14-3.

Have added discussion of bulbs managed as a universal waste in our RCRA training.

In RCRA training it is shown that bulb management played a role in a big fine levied on UAH.

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Awareness

EMD needs to develop a new page for light bulb manage to suppport environmental awareness.

Communications

Operational Controls

The laws and then the regulations are the most comprehensive controls for this aspect. The laws and regulations may require additional operational controls be written and on site to help guide the operators to successfully complete the requirements of the laws. (Remember that environmental regulations were written as instruction by the executive branches of government, on how to implement the environmental laws). In addition if monitoring of the aspect indicates more operation controls are needed to better help understand what is to be accomplished then they will be identified and prepared. Additional operational controls can be in the form of Standard Operation Procedures (SOPs), Letter of Instructions (LOIs), plans, training, written instructions, checklist, forms, permit requirements, or even verbal instruction. Laws and regulations that apply to this aspect are previously listed. Additional sources of operational controls follow.

Required Permits

There are no permits required for this aspect.

Redstone is already identifed as a large quanity generator and does not have to notify as a large quanity universal waste handler.

Required Plans

Required Records

Monitoring/Measuring Requiremens

Set up a plan for inspections of buildings and dumpster to see if aspect is being managed properly. (DEM compliance branch)

Inspection Checklist for universal waste container storage areas:

1. Are lamps stored in containers that are structurally sound, adequate to prevent breakage, and are compatible with contents of the lamps?

2. Are containers closed and do they lack evidence of leakage?

3. Are lamps that show evidence of breakage, leakage or damage that could cause a release of mercury or hazardous constituents into the environment immediately cleaned up. Are they placed into a container that is closed, structurally sound, compatible with the contents of the lamps and lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or hazardous constituents to the environment?

4. Are the containers of lamps labeled with the words Universal Waste - Fluorescent lamps?

5. Are containers marked or labeled with the accumulation start date, which is the date the first lamp was removed from its fixture and placed inside the container.

6. Are containers of waste accumulated for less than one year?

7. Are containers of lamps kept closed unless adding or removing lamps?

8. Have employees been thoroughly trained in universal waste handling/emergency procedures, relative to their responsibilities?

I have performed performed eleven EPAS surveys this calender year and inspected compliance performance for light bulb management.

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Updated by Booker Terry on 9 July 2013.

Calibration

There is no calibration required for this aspect.

What Significant Impacts Are

Light bulb management would not be something we examine as part of the NEPA program.

A Non-compliance warning was issued by ADEM in 2013 because of improper storage of bulbs by ADEM.

Responsible Person(s)

Resources

Adminstration Overhead Cost (Chief's Office) - 137 Hours - $6423

Program Manager - 52 hours - $2,949

Required contract costs:

$273,000 to manage univeral waste

Sustainability

Consequences

ADEM WORKSHEET FOR AHWMMA PENALTY ORDERS
The Alabama Environmental Management Act, Code of Alabama 1975, §22-22A-5(18)c. states, in part,:
"Any civil penalty assessed or recovered under paragraph a. or b. of this subdivision shall not be less than $100.00 or exceed $25,000.00 for each violation, provided however, that the total penalty assessed in an order issued by the department under paragraph a. of this subdivision shall not exceed $250,000.00. Each day such violation continues shall constitute a separate violation for purposes of this subdivision. In determining the amount of any penalty, consideration shall be given to the seriousness of the violation, including any irreparable harm to the environment and any threat to the health or safety of the public; the standard of care manifested by such person; the economic benefit which delayed compliance may confer upon such person; the nature, extent and degree of success of such person's efforts to minimize or mitigate the effects of such violation upon the environment; such person's history of previous violations; and the ability of such person to pay such penalty…"
Operator: Mobile Paint Manufacturing Co., Inc.
EPA ID #: ALD008163115
Location: Theodore, AL
Type of Violation
Past Order Penalty Range
(Dollars)
Statutory Range
(Dollars)
Use and Management of Containers
- Containment $1,000 – $25,000 $100 – $25,000
Universal Waste Small Quantity Handler
- Waste Management $100 – $2,500 $100 – $25,000
Universal Waste Small Quantity Handler
- Container Labeling/Marking $100 – $2,500 $100 – $25,000
Universal Waste Small Quantity Handler
- Accumulation Time Limit $100 – $2,500 $100 – $25,000
VIOLATION FACTS: The violations listed in the Order consist of: failure to maintain a secondary containment structure around the facility's hazardous waste storage area that is sufficiently impervious to contain leaks, spills, and accumulated precipitation; failure of the

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facility to document arrangements between local police departments and local emergency response teams; failure to describe the location of all emergency equipment at the facility in the
facility's contingency plan; failure to keep containers of universal waste lamps closed, failure to
label containers of universal waste lamps, and the inability to demonstrate the length of time that
universal waste lamps have been stored at the facility.
FACTORS CONSIDERED IN ESTABLSIHING THE PENALTY AMOUNT:
• SERIOUSNESS OF THE VIOLATION: The alleged violations constitute a failure on behalf of the Operator to adequately comply with numerous hazardous waste regulations. There is no evidence of any harm to human health or the environment as a result of the alleged violations.
• THE STANDARD OF CARE: While no harm to human health or the environment occurred as a result of the alleged violations, the Operator has demonstrated a standard of care that is insufficient to maintain compliance with the applicable hazardous waste regulations.
• ECONOMIC BENEFIT WHICH DELAYED COMPLIANCE MAY HAVE CONFERRED: The Department has no evidence which would indicate that the alleged violations have conferred a substantial economic benefit upon the Operator.
• EFFORTS TO MINIMIZE OR MITIGATE THE EFFECTS OF THE VIOLATION UPON THE ENVIRONMENT: There is no evidence of any harm to human health or the environment as a result of the alleged violations.
• HISTORY OF PREVIOUS VIOLATIONS: Similar violations were cited in Notices of Violation that were issued to the Operator on April 19, 1988 and June 30, 1998.
• THE ABILITY TO PAY: The Operator has not alleged an inability to pay the civil penalty.
PENALTY AMOUNT: $14,800.00
OPERATIONAL REQUIREMENTS: Immediately upon receipt of the Administrative Order and continuing thereafter, the Operator shall comply with all terms, conditions, and limitations of the Alabama Hazardous Wastes Management and Minimization Act of 1978, Ala. Code §§ 22-30-1 to 22-30-24 (2006 Rplc. Vol.), and the regulations promulgated pursuant thereto.
ALABAMA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
IN THE MATTER OF:
Mobile Paint Manufacturing Co., Inc. ORDER NO. 07-XXX-CHW
Theodore, AL
USEPA ID NUMBER ALD008163115
PREAMBLE
This Special Order by Consent is made and entered into by the Alabama Department of Environmental Management (hereinafter "the Department") and Mobile Paint Manufacturing Co., Inc. (hereinafter "the Operator") pursuant to the provisions of the Alabama Environmental Management Act, Ala. Code §§ 22-22A-1 to 22-22A-16 (2006 Rplc. Vol.); the Alabama Hazardous Wastes Management and Minimization Act of 1978, Ala. Code §§ 22-30-1 to 22-30-24 (2006 Rplc. Vol.); and the ADEM Administrative Code of Regulations (hereinafter "ADEM Admin. Code r.") promulgated pursuant thereto.
STIPULATIONS
1. The Operator operates a paint manufacturing facility in Theodore, Mobile County, Alabama, that is assigned EPA ID Number ALD008163115.
2. The Department is a duly constituted department of the State of Alabama pursuant to Ala. Code §§ 22-22A-1 to 22-22A-16 (2006 Rplc. Vol.).
3. Pursuant to Ala. Code § 22-22A-4(n) (2006 Rplc. Vol.), the Department is the state agency responsible for the promulgation and enforcement of solid and hazardous waste regulations in accordance with the federal Solid Waste Disposal Act, 42 U.S.C. 6901 to 6992k, as amended. In addition, the Department is authorized to administer and enforce the provisions of the Alabama Hazardous Wastes Management and Minimization Act, Ala. Code §§ 22-30-1 through 22-30-24 (2006 Rplc. Vol.).
4. On May 11, 2006, Department personnel conducted an on-site compliance evaluation inspection of the Operator. As a result of the inspection, the Operator was

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issued a Notice of Violation, dated August 18, 2006, which cited various violations of hazardous waste regulations. More specifically, the alleged violations were described in part, as follows:

(a) The floor of the Operator's hazardous waste container storage area is not sufficiently impervious to contain leaks, spills, and accumulated precipitation, a violation of ADEM Admin. Code rs. 335-14-3-.03(5)(a)1.(i) and 335-14-6-.02(6)(d), which require a base to underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

(b) The Operator's contingency plan did not describe arrangements agreed to by local police departments and local emergency response teams, a violation of ADEM Admin. Code rs. 335-14-3-.03(5)(a)4. and 335-14-6-.04(3)(c), which require the contingency plan to describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State of Alabama and local emergency response teams to coordinate emergency services.

(c) The Operator's contingency plan did not include the location of all emergency equipment at the facility, a violation of ADEM Admin. Code rs. 335-14-3-.03(5)(a)4. and 335-14-6-.04(3)(e), which require the contingency plan to include a list of all emergency equipment at the facility [such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment], where this equipment is required. The plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(d) One container of universal waste lamps was not closed, a violation of ADEM Admin. Code r. 335-14-11-.02(4)(d)1., which requires a small quantity handler of universal waste to contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

(e) Eleven containers of universal waste lamps were not labeled with the words "Universal Waste - Lamp(s)", "Waste Lamp(s)", or "Used Lamp(s)", a violation of ADEM Admin. Code r. 335-14-11-.02(5)(e), which requires each lamp or a container or package in which the lamps are contained to be labeled or marked clearly with any one of the following phrases: Universal Waste - Lamp(s), or Waste Lamp(s), or Used Lamp(s).

(f) The Operator was unable to demonstrate the length of time that universal waste lamps have been accumulated on-site, a violation of ADEM Admin. Code r. 335-14-11-.02(6)(c), which requires a small quantity handler of universal waste who accumulates universal waste to be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

5. The Operator consents to abide by the terms of this Consent Order and to pay the civil penalty assessed herein, but denies the alleged violations are sufficiently serious to warrant any remedial action or the assessment of a civil penalty. The Operator reserves its right to contest the alleged violations against the Department or any third party in any proceedings, except as provided for in Ala. Code § 22-22A-7(7) (2006 Rplc. Vol.).

6. The Department has agreed to the terms of this Consent Order in an effort to resolve the alleged violations cited herein without the unwarranted expenditure of State of Alabama resources in further prosecuting the alleged violations. The Department has determined that the terms contemplated in this Consent Order are in the best interests of the citizens of Alabama.

CONTENTIONS

7. The Operator neither admits nor denies the factual allegations and legal conclusions set forth in this Consent Order, but rather contends that the alleged violations have caused no harm to public health or the environment, that the Operator believed itself

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at all times to be in full compliance with the applicable requirement of the ADEM Admin. Code, and that the Operator has made every possible effort to remedy the alleged violations within a reasonable time period.
8. The Operator further contends that it has performed the following activities in order to address the alleged violations cited herein and to prevent the recurrence of such violations:
(a) The Operator believed at all times that the floor of its hazardous waste container storage area was sufficiently impervious to contain leaks, spills, and accumulated precipitation in compliance with ADEM Admin. Code rs. 335-14-3-.03(5)(a)1.(i) and 335-14-6-.02(6)(d). However, the Operator plans to install a secondary containment system that will lie between the floor of the hazardous waste container storage area and the containers of hazardous waste being stored there, and which will be sufficiently impervious to contain leaks, spills, and accumulated precipitation.
(b) The Operator relied on a professional engineer to prepare its contingency plan and believed at all times that the plan was complete and up-to-date. However, the Operator has updated its contingency plan to describe arrangements agreed to by local police departments and local emergency response teams. A copy of the updated contingency plan was submitted to the Department on March 12, 2007.
(c) The Operator has updated its contingency plan to include the location of all emergency equipment at the facility. A copy of the updated contingency plan was submitted to the Department on March 12, 2007.
(d) The Operator has properly disposed of the container of universal waste lamps and has instituted a written policy addressing the storage and disposal of such lamps.
(e) The Operator has properly disposed of the eleven containers of universal waste lamps and has instituted a written policy addressing the storage and disposal of such lamps.
(f) The Operator has properly disposed of the universal waste lamps that have been accumulated on-site and has instituted a written policy addressing the storage and disposal of such lamps.
9. The Department neither admits nor denies the Operator’s contentions.
10. Pursuant to Ala. Code § 22-22A-5(18) (2006 Rplc. Vol.), in determining the amount of any penalty, the Department must give consideration to the seriousness of the violation, including any irreparable harm to the environment and any threat to the health or safety of the public; the standard of care manifested by such person; the economic benefit which delayed compliance may confer upon such person; the nature, extent, and degree of success of such person's efforts to minimize or mitigate the effects of such violation upon the environment; such person's history of previous violations; and the ability of such person to pay such penalty. Any civil penalty assessed pursuant to this authority shall not be less than $100.00 or exceed $25,000.00 for each violation, provided however, that the total penalty assessed in an order issued by the department shall not exceed $250,000.00. Each day such a violation continues shall constitute a separate violation.
11. In determining the amount of the civil penalty assessed herein, the Department has considered the following:
(a) SERIOUSNESS OF THE VIOLATION: The alleged violations constitute a failure on behalf of the Operator to adequately comply with numerous hazardous waste regulations. There is no evidence of any harm to human health or the environment as a result of the alleged violations.
(b) THE STANDARD OF CARE: While no harm to human health or the environment occurred as a result of the alleged violations, the Operator has demonstrated a standard of care that is insufficient to maintain compliance with the applicable hazardous waste regulations.
(c) ECONOMIC BENEFIT WHICH DELAYED COMPLIANCE MAY HAVE CONFERRED: The Department has no evidence which would indicate that the alleged violations have conferred a substantial economic benefit upon the Operator.
(d) EFFORTS TO MINIMIZE OR MITIGATE THE EFFECTS OF THE VIOLATION UPON THE ENVIRONMENT: There is no evidence of

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any harm to human health or the environment as a result of the alleged violations.
(e) HISTORY OF PREVIOUS VIOLATIONS: Similar violations were cited in Notices of Violation that were issued to the Operator on April 19, 1988 and June 30, 1998.
(f) THE ABILITY TO PAY: The Operator has not alleged an inability to pay the civil penalty.
(g) OTHER FACTORS: This Special Order by Consent is a negotiated settlement and, therefore, the Department has compromised the amount of the penalty it believes is warranted in this matter in the spirit of cooperation and the desire to resolve this matter amicably, without incurring the unwarranted expense of litigation.
ORDER
THEREFORE, without admitting that it has violated any statutes or regulations, the Operator, along with the Department, desires to resolve and settle the alleged violations enumerated herein. The Department has carefully considered the facts available to it and has considered the six penalty factors enumerated in Ala. Code § 22-22A-5(18) (2006 Rplc. Vol.) as well as the need for timely and effective enforcement; the Department believes that the following conditions are appropriate to address the violations alleged herein. Therefore, the Department and the Operator agree to enter into this Order with the following terms and conditions:
A. The Operator agrees to pay to the Department a civil penalty in the amount of $14,800.00 in settlement of the violations alleged herein within 45 days from the effective date of this Consent Order. Failure to pay the civil penalty within 45 days from the effective date may result in the Department's filing a civil action in the Circuit Court of Montgomery County to recover the civil penalty.
B. The Operator agrees that all penalties due pursuant to this Consent Order shall be made payable to the Alabama Department of Environmental Management by certified or cashier's check and shall be remitted to:
Office of General Counsel
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463
C. The Operator agrees that, immediately upon receipt of this Order and continuing each and every day thereafter, the Operator shall comply with all terms, conditions, and limitations of the Alabama Hazardous Wastes Management and Minimization Act of 1978, Ala. Code §§ 22-30-1 to 22-30-24 (2006 Rplc. Vol.) and the regulations promulgated pursuant thereto.
D. The parties agree that this Consent Order shall apply to and be binding upon both parties, their directors, officers, and all persons or entities acting under or for
them. Each signatory to this Consent Order certifies that he or she is fully authorized by the party he or she represents to enter into the terms and conditions of this Consent Order, to execute the Consent Order on behalf of the party represented, and to legally bind such party.
E. The parties agree that, subject to the terms of these provisions and subject to provisions otherwise provided by statute, this Consent Order is intended to operate as a full resolution of the alleged violations which are cited herein.
F. The Operator agrees that it is not relieved from any liability if it fails to comply with any provision of this Consent Order.
G. For purposes of this Consent Order only, the Operator agrees that the Department may properly bring an action to compel compliance with the terms and conditions contained herein in the Circuit Court of Montgomery County. The Operator also agrees that in any action brought by the Department to compel compliance with the terms of this Agreement, the Operator shall be limited to the defenses of Force Majeure, compliance with this Agreement, and physical impossibility. A Force Majeure is defined as any event arising from causes that are not foreseeable and are beyond the reasonable control of the Operator, including its contractors and consultants, which could not be overcome by due diligence (i.e., causes which could have been overcome or avoided by the exercise of due diligence will not be considered to have been beyond the reasonable control of the Operator) and which delays or prevents performance by a date required by

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the Consent Order. Events such as unanticipated or increased costs of performance, changed economic circumstances, normal precipitation events, or failure to obtain federal, state, or local permits shall not constitute Force Majeure. Any request for a modification of a deadline must be accompanied by the reasons (including documentation) for each extension and the proposed extension time. This information shall be submitted to the Department a minimum of 10 working days prior to the original anticipated completion date. If the Department, after review of the extension request, finds that the work was delayed because of conditions beyond the control of and without the fault of the Operator, the Department may extend the time as justified by the circumstances. The Department may also grant any other additional time extension as justified by the circumstances, but it is not obligated to do so.
H. The parties agree that the sole purpose of this Consent Order is to resolve and dispose of all allegations and contentions stated herein concerning the factual circumstances referenced herein. Should additional facts and circumstances be discovered in the future which would constitute possible violations not addressed in this Consent Order, then such future violations may be addressed in Orders as may be issued by the Director, litigation initiated by the Department, or such other enforcement actions as may be appropriate; the Operator shall not object to such future orders, litigation, or enforcement actions based on the issuance of this Consent Order if future orders, litigation, or other enforcement actions address new matters not raised in this Consent Order.
I. The parties agree that this Consent Order shall be considered final and effective immediately upon signature of all parties. This Consent Order shall not be appealable, and the Operator does hereby waive any hearing on the terms and conditions of this Consent Order.
J. The parties agree that this Order shall not affect the Operator's obligation to comply with any Federal, State, or local laws or regulations.
K. The parties agree that final approval and entry into this Consent Order are subject to the requirements that the Department give notice of proposed Orders to the public, and that the public have at least thirty (30) days within which to comment on the Order.

EPA Settlement with GSA in USVI Sheds Light on Need to Recycle Fluorescent Bulbs

Release date: 02/06/2008

Contact Information: Rich Cahill (212) 637-3666, cahill.richard@epa.gov

(St. Thomas, V.I.) Most of us don't think twice about the fluorescent lights over our heads at work, but the issue of how the bulbs are thrown out and how they can be recycled took center stage in the recent resolution of a U.S. Environmental Protection Agency (EPA) complaint against the U.S. General Services Administration (GSA). Last year, EPA alleged that GSA violated federal hazardous waste rules at its building on St. Thomas in the U.S. Virgin Islands by disposing of fluorescent light bulbs as regular garbage. While fluorescent bulbs may seem harmless, they contain mercury and can be harmful to people and the environment if improperly discarded.

"Fluorescent lights are super efficient -- up to 80% more than incandescent bulbs -- which is great for the environment, but they do have to be handled properly once they burn out," said EPA Regional Administrator, Alan J. Steinberg. "Most people don't realize that every time they toss a fluorescent bulb into the regular trash, they are releasing mercury into the environment. Though these bulbs only contain a very small amount of mercury, it can add up fast. That's why I am so pleased that GSA has agreed to make sure that fluorescent bulbs from buildings that it owns and operates in the VI and throughout their Caribbean and Northeast region are recycled. "

GSA is a federal procurement and property management agency created to improve government efficiency and help federal agencies better serve the public. In the settlement announced today, GSA agreed to complete arrangements within one year to recycle the various kinds of

mercury- and other toxic metal-containing bulbs used in all of the more than 50 buildings, including buildings that house EPA offices, which GSA manages for U.S. government agencies in the Virgin Islands, Puerto Rico, northern New Jersey and New York. Currently available recycling systems can capture up to 99% of the mercury in these bulbs and the mercury can be reused in new bulbs. GSA will also pay a $23,000 penalty for the violations.

Other types of light bulbs, including high-intensity discharge (HID), neon, mercury vapor, high pressure sodium, compact fluorescent and metal halide lamps, can also contain mercury, lead, and cadmium. EPA regulations require that non-green tip spent mercury- and other toxic metal-containing bulbs from business, industry and government be handled as hazardous waste or under the simpler universal waste rules to prevent the release of mercury and other toxins into the environment. The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g.,fluorescent bulbs).

While EPA recommends that even green tip spent bulbs be recycled because they do contain less but some mercury, some states have stricter requirements and may require that even green tip spent bulbs be handled as a hazardous waste.

Once it’s released into the environment, mercury will repeatedly cycle through the land, water and air. When airborne, it can be deposited on soil and water bodies, settle in sediments and, ultimately, be consumed by and stored in the fat reserves of living organisms. An unfortunate example of this problem is the prevalence of fish advisories resulting from mercury contamination.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need to set targets for 2012.
Have we done anything to make people aware of proper light bulb management?
What can we do to increase awareness?
We need a light bulb management plan.
Need to define who is responsible for doing what.
How do we clean up broken light bulbs?

On 13 April 2010 nine buildings at Chugach were inspected for compliance.

Performed EPAS survey at Chugach World Services Inc, facilities on 15-23 Feb 2011. Light bulb management was surveyed during this inspection.

Performed EPAS survey at Chugach Ground Maintenance facilities on 15 March 2011. Light bulb management was surveyed during this inspection.

Performed EPAS survey at the DLA Distribution Services facilities on 29-20 March 2011. Light bulb management was surveyed during this inspection.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
26	**Sustainability**	Terry Hazle

Discussion

Sustainability is to be incorporated into the Environmental Management System (EMS); and therefore, it has been added as a significant environmental aspect in the EMS.

Sustainability is no net loss of resources.

The Army defines Sustainability as ensuring that we have what we need for current and future Garrison operations. To employ Sustainability is to engage in smart business practices. Many Army initiatives have sustainable actions governing them; examples are Army Community of Excellence and Lean Six Sigma projects.

Sustainability focuses on the Triple Bottom Line +, which is the Mission, Community, and the Environment. A further elaboration with a sustainable focus, in parentheses, is detailed in the following six (6) objectives:

1) Strengthen Army Operations (by reducing the Environmental Bootprint)
2) Foster a Sustainability Ethic (beyond compliance)
3) Meet Test, Training, and Mission Requirements (ensure that the resources are managed well so that requirements can be met).
4) Minimize Impact and Total Ownership Costs (material, facilities, operations)
5) Enhance Well-Being (through leadership in the community)
6) Drive Innovation (utilize technology to meet user needs and anticipate future Army challenges).

In October 09, two pieces of draft guidance were issued that are reshaping the sustainability effort. They are the USA Installation Management Command Strategic Plan 2009-2013 and the Draft Army Sustainability Campaign Plan.
These documents further define how Sustainability will be managed and operated within the Army. Sustainability will no longer be housed solely in the Environmental Management Division. The Plans, Analysis, and Integration Office (PAIO) will be the Lead Agency. Col Pastorelli has officially assigned this duty to PAIO. Twenty-five year goals will be established, and then we will work forward to meet those goals.

Impacts or possible impacts

The impact of not implementing a program of sustainable actions will result in a shortage of resources that could degrade the quality of service and the quality of life for soldiers and families.

Goals

Introduce and educate Redstone Command Staff on the concepts of sustainability

Establish a sustainability baseline for the Arsenal

Acquire sustainability program funding

Benchmark with other Federal Facilities and private industry

Identify potential stakeholders

ENERGY
2015 Target is 109.28 Mbtu/Ksf; Current Use for 2008 is 146.00MBtu/Ksf (not on glide path).

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Measurable Targets

Brief sustainability concept at October Installation Planning Board
(OBE, to be rescheduled when the Strategic Plan is published). On 30 September 09, Sustainability concepts were briefed at the Director's meeting by Joey Skinner. On 22 October 09, Sustainability was briefed to the members of the EQCC by Denean Summers.

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Schedule a sustainability workshop by November 1, 2009 (OBE)

Develop educational materials for distribution by August 1, 2009 (OBE)

Identify and document existing Redstone sustainability initiatives (i.e. energy, recycling)

Determine available assistance from SERO/AEC

Identify similar installations for benchmarking

Identify and establish dialog with potential stakeholders

The 5 OCT 09 Executive Order, Federal Leadership in Environmental, Energy, and Economic Performance, established the following targets:

Plans will be focused on cost-effective projects and programs
Measure, manage and reduce greenhouse gas emissions toward agency-defined targets (RSA established the targets)(EMD)
30% Reduction in vehicle fleet petroleum use by 2020 (DOL)
26% Improvement in Water Efficiency by 2020 (Energy/Utilities)
50% Recycling and waste diversion by 2015 (EMD)
95% of all applicable contracts will meet sustainability requirements (Master Planning)
Implementation of the 2030 net-zero-energy building requirement (Energy)
Implementation if the storm water provisions of the Energy independence and Security Act of 2007, Section 438 (Water)
Development of guidance for Sustainable Federal building locations (Livability Principles put forward by the Department of Housing and Urban Development, the Department of Transportation, and the EPA) (Master Planning).

Letters of Instructions

Legal Requirements

Executive Order 13423
Strengthening Federal Environmental, Energy, and Transportation Management

Executive Order 13423, Streengthening Federal Environmenal, Energy and Transportation management (signed 24 Jaunary 2007). Supersedes EO 13123 and EO 13429.

Sets numerous Federal energy and environmental management requirements, including but not limited to:
Implementing Instruction
Reducing Energy Intensity
Increasing Use of Renewable Energy
Reducing Water Intensity
Designing and Operating Sustainable Buildings
Managing Federal Fleets
_ Implementing Instructions. In consultation with the Director of the Office of Management and Budget, the Chairman of the Council of Environmental Quality issued the instructions and defined the requirements for implementing this EO.
_ Reducing Energy Intensity. This EO requires Federal agencies to reduce energy intensity by 3% each year, leading to 30% by the end of FY 2015 compared to a FY 2003 baseline. The goal was given the weight of law when ratified by EISA 2007.
_ Increasing the Use of Renewable Energy. Federal agencies must ensure that at least half of all renewable energy required under EPACT 2005 comes from renewable sources 9developed after 1 January 1999).
To the maximum extent possible, renewable energy generation projects should be implemented on agency property for agency use. Agencies can also purchase renewable energy to help meet these requirements.
_ Reducing Water Intensity. Requires reduction in water intensity (gallons per square foot) by 2% each year through FY 2015 for a total of 16% based on water consumption in FY 2007.

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_ Designing and Operating Sustainable Buildings. Requires Federal agencies to ensure new construction and major renovations comply with the 2006 Federal leadership in high Performance and Sustainable Buildings Memorandum of Understanding (MOU). Requires 15% of the existing Federalcapital asset building inventory fo each agency incorporate the sustainable practices in the Guiding Principles by the end of FY 2015.

EO 13423 Guidance on Sustainability includes revised Guiding Principles for new construction, new principles fro existing buildings, clarification of reporting guidelines for entering information on the sustainability data element (#25) in the Federal Real Property Profile, and an explanation of how to calculate the percentage of buildings and square footae that are compliant with the Guidign Principles for agencies' scorecard input.

_ Managing Federal Fleets. Federal agencies with 20 or more vehicles must ensure fleet petroleum reduction of 2% each year measured against a baseline set in FY 2005. Federal agencies must also increase use of alternative fuels by 10% each year compared to the previous year. This EO also covers the use of plug-in hybrids.

EO 13514 Federal leadership in Environmental, Energy, and Economic Perfromance 5 October 2009. Expanded up on the energy reduction and environmental performance requirements of EO 13423.

Sets numerous Federal energy requirements in several areas, including:
_ Accountabiity and Trasparency. Within 30 days, Federal agency heads must designate a senior management official to serve as Senior Sustainabiliy Officer accountable for agency conformance. The Senior Sustainabilty Officer designation must be reported to the Chair of the Council on Environmental Quality (CEQ) and the Director of the Office of management and Budget (OMB). The Senior Sustainability officer shall:
- Prepare targets fro agency-wide reductions in 202 Greenhouse Gas (GHG) emissions
- Within 240 days, prepare and submit a multi-year Strategic Sustainability Performance Plan to the Chair of the Council n Environmental Quality (CEQ) and the Director of the Office of Management and Budget (OMB) for review and approval.
+ Agency efforts and outcomes in implementing this EO must be transparent and disclosed on publicly available Federal Web sites.
+ OMB must prepare scorecards providing periodic evaluation of Federal agency performance. Scorecard results must be published on a publically available website.
+ The CEQ Chair must ensure that Federal agencies are held accountable for conformance.
+ Agency heads shall decide that this order applies in whole or in part with respect the activities, personnel, resources, and facilities of the agencies not located in the US..
+ Agency heads may submit to the President, thorough the CEQ Chair, an exemption request covering an agency activity and related personnel, resources and facilities
+ the Director of National Intelligence may exempt an intelligence activity and related personnel, resources, and facilities when in the interest of national security.
+ To the maximum extent practical and without compromising national security, each agency shall strive to comply with the purposes, goals,and implementation steps of this EO

- Strategic Sustainability and Performance Planning. Federal agencies are required to develop, implement, and annually update a Strategic Sustinability Performance Plan that prioritizes agency actions on life-cycle return on investment. Between fiscal years 2011 and 2021, each plan shall
+ Include a policy statement committing the agency to comply with environmmental and energy statutes, regulations, and Eos
+ Achieve established sustainability goals and targets, including greenhouse gas reduction targets.
+ Be integrated within each agency's strategic planning and budgeting process
+ Identify agency activites, policies, plans, procedures, and practices relevant to the implementation of this EO, and where necessary, provide for the development and implementation of new or revised policies, plans, procedures, and practices.
+ Identify specific agency goals, schedules, milestones, and approaches for achieving results and quantifiable metrics required by this EO
+ Outline planned actions to provide information about agency progress, performance,

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and results ona a publicly available Federal website
+ Incorporate actions for achieving progress metrics identified by the CEQ Chair and OMB Director.
+ Evaluate agency climate change risks and vulnerabilites to manage the effects of climate change on the agency's operations and mission in both the short and long term.
+ Consider environmental measures as well as economic benefits, social benefits, and costs in evaluating projects and activities based on life-cycle return on investment.
+ Annually identify opportunities for improvement and evaluate past preformance to extend or exp[and projects that have benefits as well as reassess or discontinue under-performing projects.
_ Greenhouse Gas management
+ Within 90 days, establish and report to the CEQ Chair and OMB Director a FY 2020 percentage reduction target of agency-wide scope 1 and scope 2 GHG emissions in absolute terms relative to a FY 2008 baseline.
+ Within 15 months, establish and report to the CEQ Chair and OMB Director a comprehensive inventory of absolute GHG emissions across three scopes for FY 2010. Comprehensive inventories shall be submitted annually thereafter at the end of January.
_ Sustainable Buildings and Communities
+ Implement high performance sustainable Federal building design, construction, operation and management, maintenance, and deconstruction (more in the print out in the Sustainability folder*).
+ Advance regional and local integrated planning *
_ Water Efficiency
+ Reducing potable water consumption intensity 2% annually through FY 2020, or 26% by the end of 2020, baseline of FY 2007
+ Reduce annual industrial, landscaping, and agricultural water consumption 2% annually, or 20% by the end of FY 2020, 2010 baseline
+ Identifying, promoting, and implementing water reuse strategies consistent with state law that reduce potable water consumption
_ Electronic Products and Services
+ Ensure 95% of new contract actions, task orders, and delivery orders for products and services (excluding weapon systems) are energy efficient (Energy Star or FEMP designated), water efficient, bio-based, environmentally preferable (Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives where such products and services meet agency performance requirements.
+ Implement best management proactices for the energy-efficient management of servers and Federal data centers
_ Fleet and Transportation Management. Requires Federal agencies to consider fleet and transportation management during greenhouse gas inventory and mitigation processes.
_ Pollution Prevention and Waste Reduction.
+ Mimize the generation of waste and pollutants through source reduction
+ Decrease agency use of chemicals where such decrease will assist the agency in achieving greenhouse gas reduction targets.
+ Divert at least 50% of non-hazardous solid waste by the end of FY 2013
+ reduce printing paper use and acquiring uncoated prining paper and writing paper containing at lease 30% post-consumer fiber.
+ Increase the diversion of compostable and organic material from the waste stream

Training Requirements

Awareness

EMD does not have a web page to support sustainability awareness.

Newspaper:
Title: Garrison Looking for Ways to Sustain Resources
Date: 3 February 2010
Location: T:\DATA\Correspondence\EMS Training Documents\015.pdf

Title: Environmental Efficiency Helps Ensure Existence
Date: 31 March 2010

Location: T:\DATA\Correspondence\EMS Training Documents\011.pdf

Title: Low Speed Electric Vehicles Get Plug From Vendor
Date: 5 May 2010
Locatioin: T:\DATA\Correspondence\EMS Training Documents\017.pdf

Title: Energy Conservation Project Should Save $2M Annually
Date: 13 April 2011
Location: T:\DATA\Correspondence\EMS Training Documents\057.pdf

Title: Bring Your Child To Work April 28
Date: 20 April 2011
Location: T:\DATA\Correspondence\EMS Training Documents\059.pdf

Title: Power Outage Sheds Light On Energy Consumption
Date: 11 May 11
Location: T:\DATA\Correspondence\EMS Training Documents\060.pdf

Title: Homeowners Turned On To Energy Conservation
Date: 18 May 2011
Location: T:\DATA\Correspondence\EMS Training Documents\061.pdf

Title: Redstone Energy Tab Surges to $4M
Date: 31 August 2011
Location: T:\DATA\Correspondence\EMS Training Documents\064.pdf

Title: Top Electric Users at Redstone Listed for Fiscal Year 2011
Date: 5 October 11
Location: T:\DATA\Correspondence\EMS Training Documents\065.pdf

Title: Lightening Army's Load Through Energy Conservation
Date: 12 October 11
Location: T:\DATA\Correspondence\EMS Training Documents\066.pdf

Title: Energy office Sends Awareness Reminders
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\068.pdf

Title: Energy office Sends Awareness Reminders
Date: 12 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\068.pdf

Title: Energy Expenses Drain Taxpayers' Dollars
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\072.pdf

Title: Arsenal Builds Up to Energy Savings
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\079.pdf

Title: Energy Conservation Project Should Save $2M Annually
Date: 26 October 2011
Location: T:\DATA\Correspondence\EMS Training Documents\080.pdf

Cultural Resource Manger/Installation Archaeologist spoke to Primrose School of Madison Summer Explorers class about archaeology
Date: 17 June 2011.

Cultural Resource Manger/Installation Archaeologist put together cultural history exhibits for three large display cases in Garrison building.

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Cultural Resource Manger/Installation Archaeologist interviewed by 42 Magazine about Site 1Ma639 mitigation
Date: 15 August 2011

Cultural Resource Manger/Installation Archaeologist wrote update on archaeological work at Redstone Arsenal for Alabama Archaeological Society newsletter
Date: 22 August 2011

Cultural Resource Manger/Installation Archaeologist presented updates on Redstone Arsenal archaeology program to monthly meeting of the Huntsville Chapter of the Alabama Archaeological Society
Date: 27 September 2011

Cultural Resource Manger/Installation Archaeologist presented updates on Redstone Arsenal archaeology program to monthly meeting of the Cullman Chapter of the Alabama Archaeological Society
Date: 20 October 2011

Cultural Resource Manger/Installation Archaeologist gave interviews to WAFF 48 news about data recovery at 1Ma1167 and historic cemeteries on Redstone Arsenal
Date: 21 October 2011

Cultural Resource Manger/Installation Archaeologist chaired monthly meeting of Huntsville Chapter of Alabama Archaeological Society
Date: 25 October 2011

Cultural Resource Manger/Installation Archaeologist gave interview for Redstone Rocket article on data recovery at 1Ma1167
Date: 2 November 2011

Cultural Resource Manger/Installation Archaeologist gave presentation on Redstone Arsenal archaeology program to Lunch and Learn at NASA Marshall Space Flight Center
Date: 29 December 2011

Cultural Resource Manger/Installation Archaeologist gave co-authored paper on local prehistoric archaeological phase at annual meeting of Alabama Archaeological Society
Date: 11 February 2012

Communications

Operational Controls

Required Permits

Required Plans

Comprehensive Energy and Water Master Plan
Istallation Master Plan
Installation Strategic Plan
Installation Solid Waste Management Plan

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Required Records

Monitoring/Measuring Requiremens

Calibration

What Significant Impacts Are

Responsible Person(s)

1.Garrison Commanders (GC)/Deputy Garrison Commanders (DGC)
a.Develop long range (25 year) plans addressing mission, community, environmental and quality of life issues developed through a strategic planning process that includes the perspectives of all stakeholders (e.g., tenant organizations, community leaders, the workforce, etc.).
B.Ensure objectives and targets are tied into strategic plans and management systems and installation personnel complete or implement long range sustainability goals.
C.Ensure the integration of sustainability principles into key installation policy, regulations, strategic planning, implementation and operational documents such as installation master plans, human capital plan, strategic communication plans, range and land management plans, energy plans, and procurement/acquisition plans.
D.Hold regular strategic planning meetings to assess progress and determine if changes are necessary.
E.Actively engage in a cross-functional approach with garrison staff, directorates, tenants, regulators, and state and local community officials to create and achieve long-term sustainability goals.

2.Plans, Analysis and Integration Office (PAIO)
a.Ensure a climate for effective strategic planning is established and maintained throughout the garrison by communicating and demonstrating that strategic planning and the application of the principles of sustainability are considered an integral part of management and leadership positions.
B.Act as the lead integrator for garrison sustainability and communities of excellence efforts and coordinate progress reporting.
C.Review installation plans and processes for sustainability integration opportunities.
D.Identify a sustainability coordinator/steward to coordinate sustainability efforts across the garrison to include coordination of sustainability workshops and related events.
E.Facilitate and integrate strategic planning by individuals and groups/teams.
F.Measure and track progress on objectives and targets in order to complete sustainability goals.
G.Provide input to plans and contribute to achieving long range objectives and targets as required.

3.Resource Management Office (RMO)
a.Institutionalize sustainability principles into traditional fiscal resource streams, to reduce our operational costs over time.
B.Seek funding sources to support sustainability projects and initiatives (e.g. pilot projects, garrison awards, grants)
c.Provide input to plans and contribute to achieving long range objectives and targets as required. Determine the specific objectives that will be accomplished and then manage the programs to achieve those objectives.

4.Directorate of Human Resources (DHR)
a.Include sustainability objectives in performance evaluations.
B.Provide garrison wide, sustainability training to all managers and employees, government and contractors, tenant activities and members of the community.
C.Include sustainability training to new employees; for example, during the new employee orientation process.
D.Provide input to plans and contribute to achieving long range objectives and targets, as

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required, to include workforce sustainability plans.
E.Coordinate with community academia and economic development offices for opportunities to exchange sustainability information and develop partnerships.

5.Directorate of Moral, Welfare and Recreation (DMWR)
a. Provide input to plans and contribute to achieving long range objectives and targets as required.
B.Apply sustainability principles and integrate throughout all directorate planning and activities.
C.Address sustainability integration with the Army Family Covenant.

6.Directorate of Plans Training, Mobilization and Security (DPTMS)
a.Ensure sustainable ranges/land management
b.Apply sustainability principles and integrate throughout all directorate planning and activities.
C.Provide input to plans and contribute to achieving long range objectives and targets as required.

7.Directorate of Emergency Services (DES)
a.Provide input to plans and contribute to achieving long range objectives and targets as required.
B.Coordinate with the community providers for opportunities to exchange sustainability information and enhance mutual support agreements.

8.Directorate of Support Services (DOSS)
a.Apply sustainability principles and integrate throughout all directorate planning and activities.
B.Consider sustainable options to meet garrison transportation requirements (e.g., NEVs, AFVs, Hybrids, etc.).
C.Provide input to plans and contribute to achieving long range objectives and targets as required.

9.Directorate of Public Works (DPW)
a.Apply sustainability principles and integrate throughout all directorate planning and activities (e.g. LEED, energy, water, EMS, master planning).
B.Provide input to plans and contribute to achieving long range objectives and targets as required.
C.Provide input to plans and contribute to achieving long range objectives and targets as required.

10.Legal Office (ILO)
a.Provide input to plans and contribute to achieving long range objectives and targets as required.
B.Provide support and guidance as required regarding such matters as Community partnerships and agreements and agreements with other government agencies.

11.Public Affairs Office (PAO)
a.Integrate sustainability into the public affairs plan.
B.Develop a strategic communications plan for sustainability
c.Encourage sustainability articles be submitted to the garrison newspaper/publication and local community newspaper.
D.Provide input to plans and contribute to achieving long range objectives and targets as required.
E.Assist in developing community sustainability contacts and support sustainability outreach and communications efforts.

12.Religious Support Office (RSO)
a.Apply sustainability principles and integrate throughout all support planning and activities.
B.Provide input to plans and contribute to achieving long range objectives and targets as required.

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13.Safety Office (ISO)
a.Ensure sustainability principles are integrated into safety policies, directives and SOPs.
B.Provide input to plans and contribute to achieving long range objectives and targets as required.

14.Equal Employment Opportunities Office (EEO)
a.Apply sustainability principles and integrate throughout all support planning and activities.
B.Provide input to plans and contribute to achieving long range objectives and targets as required.

15.Internal Review Office (IRACO)
a.Ensure long range sustainability goals are met in an efficient and cost effective manner.
B.Ensure compliance with audit findings.
C.Provide input to plans and contribute to achieving long range objectives and targets as required.

16.Contracting Office (ICO)
a.Include green procurement in contracts.
B.Include sustainability language in all contracts for goods and services.
C.Provide input to plans and contribute to achieving long range objectives and targets as required.

17. Supporting Organizations
a. Information Management
1) Apply sustainability principles and integrate throughout all support planning and activities.
2) Provide input to plans and contribute to achieving long range objectives and targets as required.

B. Directorate of Materiel
1) Apply sustainability principles and integrate throughout all support and life cycle planning and activities.
2) Provide input to plans and contribute to achieving long range objectives and targets as required. For example, plan for technology infrastructure and services to support sustainable transportation systems.

Resources

Adminstration Overhead Cost (Chief's Office) - 546 Hours - $25,692
Branch Chief - 52 Hours - $2,949
Program Manager - 520 hours - $29,499
Environmental Database hours - 80 hours - $4,000

No required contracts

Sustainability:
$5,000- training to stay current with regs

Sustainability

1. Waste to Energy Partnership with the City of Huntsville in 1980
2. LEED Standard Buildings - AMC HQ, FBI (gold?), Rotary-Wing Building
3. Development and Implementation of EMS
4. Partnering with the City regarding water
5. White House Cooperative to highlight what we are doing with regard to Water (Danny Dunn)
6. Path to Nature (Education) with the City School System
7. Cell Phone Recycle Initiative (Green Team)
8. 2005 investigation with the City of Huntsville to determine the potential (if any) effects of PM from Prescribed Burning on the City of Huntsville's Air shed.
9. Energy and Utility Program (Mark Smith, Energy Summit IV Presentation)
Purchased Steam Distribution System Improvements (lighting, energy management

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system controls), HVAC upgrades, architectural modifications, and wall insulation - Cost 20 M, Save 2.8 M/yr 124,349 MMBtu/yr

Audits for Customers - Chilled and Hot Water Distribution Piping Improvements (1962), Steam Distribution Piping

Improvements, Air Handlers, Controls, Scheduling of Unoccupied Setbacks, Air Distribution System Improvements, Improved Space Utilization based on HVAC types, Lighting, Segregate Server Rooms/Labs on Separate Systems, Large Zones with Diverse Load Types.

Recommission Major Existing Facilities

Government Owned Boiler Plant Distribution System Improvements - Distribution system improvements and/or decentralization where feasible, plant operation improvements by implementing SOP for varying seasonal use, Controls tied to EMCS, Implement feasible energy conservation measures in served by government-owned plants at the same time.

Water System Improvements - Convert cooling towers using potable water to industrial water, toilet/urinal replacement (1/8 gallon/flush urinal and dual flush toilets), horizontal axis clothes washer in barracks.

Renewable Energy Initiatives (ECIP), analyzing the use of solar walls, day lighting, and solar hot water (Bldg 3705)

10. Farmer's Market begun for purchasing local products.
11. Cleaning Contract requires use of green cleaning products and toilet paper.
12. Community Garden plots on installation (MWR).
13. NASA and Garrison Taxi service.
14. Carpool possibilities at www.carpoolworld.com
15. Sixteen (16) electric cars are to be used at the Garrison. Currently, plans are being discussed 2 NOV 09. Plans are still being discussed 25 MAY 10. The vehicles have not been deployed because of safety concerns regarding the car (informal information through conversation).

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Sustainability is okay for right now.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
27	**Environmental Condition of Property (ECP)**	Hazle, Galloway, Hoksbergen, Delapaz

Discussion

Environmental Condition of Property (ECP)is a snapshot in time of what is know about the enviroment at the time of examination. The legal driver for this is usually applied when dealing with disposing of land that is being given up because of a military closure. This is made a part of the Environmental Management system because the significance of the environmental impact could come from knowing in writing if there is an endangerment to people or their health either at the time of examination or in the future from using this piece of property. ECP is descriptive and not prescriptive.

Impacts or possible impacts

Garrison environmental liabilities from discarded hazardous waste and/or hazardous materials.

Provides environmental baseline for new tenants.

Helps identify what dangers needs to be looked at for potection to workers do to environmental contamination.

Goals

Comply with environmental regulations.

Define what the environmental condition of the properity is.

Measurable Targets

Review existing leases to determine lease renwals and inspection schedule by September 30, 2009. (This did not happen) This measurement is dropped.

Develop inspection checklist by November 30, 2009 (The inspection checklist was not developed but instead a database has been developed so indivual subject matter experts can identify what they know about the property). (completed)

For 2010 - Document the ECP for each parcal within 60 days of complete identificaion of the need and boundries for an evaulation.

Letters of Instructions

Legal Requirements

AR200-1, Environmental Protection and Enhancement
Chapter 15
15-5. Real property acquisition, leases, outgrants, and disposal transactions
a. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires the Army to perform certain actions to assess the environmental condition of property prior to entering into designated real property transactions. These transactions include fee acquisition of real property on behalf of the United States, deeds divesting title from the United States, transfers of jurisdiction between federal agencies, and leases of Army-controlled real property to non-Army entities.
b. This section is not applicable to reassignments within Army or DOD elements; to acquisition of less than fee; or to other outgrants (license, easement, or permit). However, the Environmental Condition of Property (ECP) requirements
of this section apply, as a matter of policy, to DA licenses to the National Guard Bureau (NGB), licenses for State National Guard Components, and to state land acquisition where the land will be provided for federally funded construction. Army proponents will conduct these transactions in accordance with the procedures found in AR 405-10;
AR 405-80; AR 405-90; Section 2688, Title 10, United States Code (10 USC 2688); 32 CFR 651; and Part 800, Title 36, Code of Federal Regulations (36 CFR 800). Base Realignment and Closure (BRAC) actions will comply with DODI 4165.66M, or its successor. The Army proponent may elect to perform an environmental site assessment for the inapplicable transactions. (LD: 42 USC 9620(h))
c. Except as noted in b. above, Army will assess, determine, and document the environmental

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condition of transferable property in an ECP Report. The ECP Report will summarize historical, cultural, and environmental conditions and include references to publicly available and related reports, studies, and permits. The report will provide an accurate summary of the environmental condition of the property. If the property will be deeded or leased, the site may require additional site characterization to meet applicable regulatory requirements or to help value the property. (Note: The GC/Army proponent is responsible for initiating the ECP Report.)
(1) An ECP Report will normally result in a conclusion regarding the advisability of the transaction and forms the basis for Findings of Suitability, if applicable to the transaction. Environmental contamination and potential environmental liabilities associated with properties being considered for acquisition, lease, and disposal will be determined prior to completing the transaction. The ECP Report and, if applicable, the Findings of Suitability, are an integral part of the Report of Availability or the Disposal Report which form the basis for the Army official with delegated authority to approve the real property transaction and for USACE to prepare the required legal documents, land use controls and covenants. (Note: Findings of Suitability are required for BRAC disposals, both transfers and leases, but are not required for active installation leases.) (LD: 42 USC 9620(h))
(2) Content of the ECP Report depends upon the nature of the transaction and the proposed transferee/lessee. Transfers or leases between the Army and non-federal entities will require at a minimum, a Phase I ECP Report. Where conditions indicate uncertainty regarding the condition of property, a Phase II ECP Report is also required.
(3) The ECP Report will comply with applicable American Society for Testing and Materials ("ASTM") Standards, such as ASTM E1527, E1903, and D6008 and will be consistent with the DOD Base Redevelopment and Realignment Manual (BRRM) for BRAC actions.
(4) An ECP Report is optional for reassignments within the Army and between Army and another DOD component depending on whether the HQDA approval authority deems it necessary. Those reassignments without an ECP Report should have a statement describing the environmental condition with the package forwarded to HQDA for approval. (PD)
(5) For non-BRAC actions, the ECP report will be attached to the environmental section of the Report of Availability or Disposal Report (AR 405-80 and AR 405-90) that is submitted to the Army decision-making official.
(6) Fee acquisitions and fee acquisition by State Guard components for land that will be provided for federally funded construction require an ECP Report to comply with EPA's "All Appropriate Inquiry" rules under CERCLA prior to obtaining title to the real property so as to preserve defenses to CERCLA liability as an innocent land owner, bona fide prospective purchaser, or contiguous property owner and to reduce risk to Army and ensure that Army pays appropriate consideration for the property. The Army component will perform due diligence in determining the environmental condition of the property using applicable Environmental Protection Agency guidelines and applicable American Society for Testing and Materials ("ASTM") Standards on real property acquisition (ASTM E 1527). (LD: 42 USC 9620)
(7) The activity initiating the property transfer or lease will include the ECP Report with the Disposal Report or Report of Availability for the transaction.
d. Active installation leases and non-lease outgrants (easements, license, permit):
(1) The environmental section of the Report of Availability (ROA) (AR 405-80) will be used to document the environmental condition of the property being leased by active installations. There is no requirement to prepare a FOSL. The non-BRAC ECP included with the ROA will include, as an appendix, the appropriate environmental protection provisions necessary for continued human health and environmental protection.
(2) The GC (or equivalent) or the NGB having accountability for the real property at the installation may determine that the environmental section of the ROA alone may be sufficient to document environmental requirements for permits, licenses, easements, and similar real estate actions where environmental concerns are very minor. Under these circumstances an ECP report would not be required.
(3) An ECP report will be done as an exception to this section when licenses are issued to state National Guard components; when hazardous materials will be stored for one year or more or disposed on Army property except when authorized by 10 USC 2692 (as amended); and where the authorized use of Army lands and facilities poses a hazard to human health or the environment. Leasing space to others for trailer sites or automatic teller machines (ATMs) does not require an ECP Report except where extraordinary circumstances exist.
e. The GC (or equivalent) is responsible for determining the appropriate ECP category (ASTM

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D5746) for a property being transferred based on the results of the ECP Report and actions taken to address contamination. (PD)
f. For real property transactions initiated by non-Army parties: (PD)
(1) The party initiating the transaction is responsible for funding and completing the ECP Report.
(2) The GC/Army proponent should approve the ECP Report.
(3) The Army may prepare the ECP Report, even though others initiated the transaction, if it has demonstrable benefit to the Army.
g. For non-BRAC transfers when GSA is the disposal agent, Army prepares the ECP Report. However, disposal by GSA is not considered a transfer of jurisdiction to GSA. The level of detail for the ECP Report will be coordinated with GSA. (PD)
h. Findings of Suitability are listed below:
(1) The Finding of Suitability to Transfer (FOST) / Finding of Suitability for Early Transfer (FOSET)/or BRAC Finding of Suitability to Lease (FOSL) will certify that the property is compatible with the proposed use and that the use restrictions or remedies in place (if any) are protective of human health and the environment. (PD)
(2) Deeds divesting title or leases executed under BRAC or other special legislative authority will proceed only after a FOST/FOSET/FOSL.
(3) A FOSET is required when transferring title to property pursuant to the provisions of CERCLA 120(h)(3)© (early transfer authority), when remedial action has not been completed prior to transfer. (LD: CERCLA 120(h)(3)(c)) (PD)
(4) A FOST is not required for deeds divesting title when disposed by the General Services Administration (GSA).
(5) Responsibility for environmental remediation for transfers or interchanges between the Army and other federal entities will be addressed in the Memorandum of Agreement between the Army and the transferee. The Army requires an ECP Report which will be initiated per paragraph f. above and provided to the transferee.
(6) The BRAC FOST/FOSET/FOSLs will be coordinated with regulators and made available to the public for their review. (PD)
i. Review and approval authorities are listed below:
(1) The IMCOM, Army commands or service component commands and direct reporting units with special installations,or Army National Guard (NGB-ARNG) will review and approve ECP Reports in coordination with the affected
organizations. (PD)
(2) Approval authorities for ECP Report, FOST, FOSET, and BRAC FOSL documents for property disposals are in table 15-1 below. (PD)
(3) The Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) (DASA (ESOH)) will—
(a) Recommend approval for fee acquisition of property with an ECP Category designation of 5 or above or with known or suspected munitions and explosives of concern (MEC);
(b) Recommend approval for proceeding with the transfer to non-DOD federal agencies for properties with known or suspected MEC;
(c) Approve the FOSTs/BRAC FOSLs and approve the ECP report for non-BRAC leases for properties with known or suspected munitions and explosives of concern (MEC); and
(d) Approve all FOSETs
(4) The approving official will ensure that the document(s) receive appropriate legal and environmental professional review prior to approving the document(s).
j. Real property transactions require preparation of appropriate National Environmental Policy Act (NEPA) documentation per 32 CFR Part 651. (LD: 32 CFR 651)
k. Lease Termination. Upon termination of any lease, the Army proponent and lessee may jointly conduct a final lease close out using the ECP Report funded by the lessee to ascertain any changes in the environmental condition of the subject property. If the lessee refuses to participate, the GC/Army proponent will conduct the final assessment at the lessee’s expense and provide a copy to the grantee. If an environmentally significant change has occurred, it will be documented as an amendment to the ECP Report, or a previous environmental site assessment report, if one was done, and the lessee will be required to make suitable compensation. The lessee will be made aware of these requirements and procedures in the original lease document. (PD)
l. Lease Renewals. ECP requirements must be met before renewing existing leases. If the lease did not have an environmental site assessment performed originally, an ECP must be done prior to renewal. For renewal of existing leases that have previously had an ECP, or

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other versions of site assessment documents, the GC/Army proponent must ascertain if environmental conditions have changed. If an environmentally significant change has occurred, it will be documented as a supplement or amendment to the original assessment report. An environmentally significant change involves the storage of a hazardous substance for a year or more, a known release of such substance, or its disposal on the property. The revised report will be processed in accordance with paragraph 15-5c above. A copy of the ECP report and/or any supplements or amendments will be provided to the grantee. (PD)
m. See also Leases, Easements, and Other Special Land Uses, paragraph 4-3d(2) and Conservation Reimbursable Agricultural/Grazing Outleasing and Forestry Programs, paragraph 4-3d(8).
n. Table 15-2 summarizes the documents required for the various types of real property acquisition, leases, and disposal transactions. Table 15-1 Property disposal approval authorities 1, 3 PROGRAM
DOCUMENT ACTIVE LEGACY BRAC BRAC 05
ECP Category Designation2 Garrison Commander Garrison Commander Garrison Commander
ECP Report IMCOM4 BRAC D IMCOM4
FOST5 ECP 1-4: IMCOM4 ECP 1-4: BRAC D4 ECP 1-4: IMCOM4
ECP 5-7: N/A ECP 5-7: N/A ECP 5-7: N/A
FOSET5 ECP 5-7: DASA (ESOH) ECP 5-7: DASA (ESOH) ECP 5-7: DASA (ESOH)
FOSL Not Required ECP 1-7: BRAC D4 ECP 1-7: IMCOM4
Notes:
1 The approving official will ensure that the document(s) receive appropriate legal and environmental professional review prior to approving the document(s).
2 DOD ECP Designation (ASTM D5746).
3 Transactions with known or suspected MEC require DASA (ESOH) approval.
4 Army commands or service component commands and direct supporting units with special installations and NGB exercise this authority for their installations.
Approval authority may delegate ECP 1-2 to installations.
5 Documents are not required for GSA transfers; refer to AR 405-90.
Table 15-2
Documents required
DOCUMENT ECP Report5 FINDING OF SUITABILITY
ACQUISITION
Fee title for USA Yes No
Less than Fee (easement, permit, license) No No
Inlease1 No No
DISPOSAL DOCUMENTS
Deed divesting title from USA Yes FOST/FOSET
Report as Excess to GSA2 Yes No
Transfer to another Fed Agency Yes No
Reassignment within DA or DOD3 Optional No
Release or termination of less than fee estate4
No No
OUTGRANTS
Lease Documents Yes No, use ROA to document
Other outgrants (license, easement, permit) No, use ROA to document No, use ROA to document

Table 15-2
Documents required—Continued
License to NGB Yes No
Notes:
1 Type of less than fee; however, an ECP may be done for large, long-term leases.
2 Reporting as Excess to GSA is not a transfer or reassignment to GSA.
3 Within DoD elements, doing an ECP Report is optional for those reassignments requiring HQDA approval (see para 15-5©(4) above). The Army proponent
will consult the HQDA activity requiring approval prior to initiating a Report of Availability without an ECP Report.
4 Release, Affidavit, or other non-deed document - if a deed is required, then follow deed policy.
5 The ECP Report will be forwarded with the ROA or Disposal Report.

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Training Requirements

There are no leagal training requirements for ECP.

Awareness

EMD does not have a web page to suppport Environmental Condition of Property awareness.

Communications

Operational Controls

There are no legal operational controls for ECP.

Required Permits

There are no permits required for ECP.

Required Plans

There are no legal requirements or plans required for ECP

Required Records

A list of sugested records needed for ECPs needs to be developed. There are no legal requirements for records.

Monitoring/Measuring Requiremens

There in no monitoring or measuring requirements for an ECP.

Calibration

There is no equipement needing calibration for ECP.

What Significant Impacts Are

Significant impacts for not doing ECPS would only be a holdup in transfering of property.

Responsible Person(s)

Garrison Commander is responsible for ensuring an ECP has been done correctly and as the signature authority.

ESOH must sign all ECPs that have munition or could contain munitions.

Director of Public Works is responsible for identifying a need to do an ECP on the property.

Environmental Management Division Chief is responsible for parcel is correctly categorized before sending to proper signature authority.

Restoration manager is responsible for identifing any chemical contamination that may or may not have occurred on the property.

Hazardous material managers are responsible for identifying hazardous material spills that might have occurred on property.

Wetlands manager is responsible for identifying wetland present on the property.

Staff Archaeologist is responsible for identifying any archaeological or historical sites on the property.

Natural Resource manager is responsible for identifying any threatened or endangered species on the property.

Resources

Adminstration Overhead Cost (Chief's Office) - 137 Hours - $6423

Other Resources for doing ECP are contained in the NEPA cost because the process for doing them is similar.

Sustainability

ECP is descriptive not prescriptive, therefor sustainability does not apply.

Consequences

Comsequences of not doing a complete ECP wouold be to cause delays in property transfers or disagreements in cleanup responsibilities.

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need to write out how well we met targets.
Set 2012 targets.
Any awareness needed for this aspect?
How does ECP help to sustain our mission, community and environment?

This Aspect was reviesed and updated the week on June 1, 2010. POC list needs to be completed.

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
28	**Management of Trees and Forest**	Greg Hicks

Discussion

The objectives of forest management are to provide for the enhancement of the military mission and the total forest ecosystem.

Mismanagement of forest ecosystem can have a significant effect on the environment therefor Management of trees and Forest will be managed as part of the Redstone Environmental Management System.

Impacts or possible impacts

-lack of available lands for training or testing purposes that require forested areas
-decline in forest health and wildlife habitat degradation
-non-compliance with Integrated Natural Resources Management Plan - Forest Management Plan

Goals

-support mission requirements for training and testing
-comply with applicable laws and regulations (sikes act, AR200-1, Redstone Arsenal INRMP 2010)

Measurable Targets

Letters of Instructions

Legal Requirements

Pertinent Laws and Regulations. The primary disposal and management authority for military timber is Title 10 USC 2665, also known as the Sykes Act. Among other things, this act authorizes Army to sell timber and other forest products from military installation land. The timber and forest products do not have to be determined excess. Therefore, timber may be disposed of as part of a sustained yield program or other management prescriptions. 10 U.S.C. 2665 provides that appropriations of military departments may be reimbursed for costs of production of forest products from sale proceeds on lands it owns or leases. In very rare instances, timber could be considered excess. If so, the Department of the Army, as the holding agency, is the disposal agency for excess standing timber without the underlying land (See 41 CFR 101 47.302 2) and a disposal report would be prepared, similar to sand and gravel. 16 U.S.C. 620 et seq. directs that any unprocessed timber sold from Army land lying west of the 100th meridian will not be used for export. AR 200-3, Natural Resources--Land, Forest, and Wildlife Management, sets forth policy, procedures, and responsibilities for management of natural resources. AR 405-90, Disposal of Real Estate, prescribes Army delegation of sale authority for timber. DFAS-IN Reg. 37-1, Finance and Accounting Policy Implementation, prescribes policies and procedures for accounting and reporting of proceeds and expenses for the production and sale of forest products. Memorandum, DAIM-ED-N, 17 August 1999, subject: Army Regulatory Guidance for Reimbursable Agricultural/Grazing and Forestry Program provides most recent guidance.

Army Regulation 200-1, Environmental Protection and Enhancement (27 August 2008). This regulation implements federal, state, and local environmental laws and DoD policies for preserving, conserving, and restoring the environment. AR 200-1 supersedes AR 200-3, Natural Resources-Land, Forest and Wildlife Management (28 February 1995). This regulation should be used in conjunction with 32 Code of Federal Regulation (CFR) Part 651 (32 CFR 651),which provides Army policy on National Environmental Policy Act (NEPA, 42 USC 4321-4347) requirements, and supplemental program guidance, which the proponent of that regulation may issue as needed to assure that programs remain current.

32 CFR 651, Environmental Analysis of Army Actions (29 March 2002). The Code of Federal Regulations (CFR) contains the general and permanent rules established by the executive departments and agencies of the federal government. 32 CFR 651 supersedes AR 200-2, Environmental Effects of Army Actions (23 December 1988). AR 200-2 implements the National Environmental Policy Act (NEPA) and establishes policy, procedures, and responsibilities for assessing environmental effects of Army actions. The regulation requires that an

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environmental analysis be conducted for new management and operational concepts and programs at Army installations, including environmental programs and plans. Leases, easements, permits, licenses, or other entitlements for use, such as agriculture and grazing outleases, must also be evaluated. The Armyâ€™s NEPA procedures also outline provisions for categorical exclusions (CXs), environmental assessments (Eas), and environmental impact statements (EISs).

Army Regulatory Guidance: Reimbursable Agricultural/Grazing and Forestry Programs (17 August 1999). The guidance supplements AR 200-3 to further the integration of the reimbursable forestry and agriculture and grazing outlease programs with mission, compliance, and ecosystem management efforts. The reimbursable forestry and agriculture and grazing programs must do the following:

Support the mission
Comply with applicable laws
Be consistent with the installation INRMP
Be a fiscally sound investment
Support ecosystem sustainability
Comply with installation safety restrictions
Consider the potential effect on significant archeological resources and historic properties per AR 200-1, Environmental Protection and Enhancement
Army Regulation 215-1, Morale, Welfare, and Recreation Activities and Nonappropriated Fund Instrumentalities (25 October 1998). This regulation outlines how the Installation Morale, Welfare, and Recreation Fund (IMWRF) process and procedures relate to the use of Army property for hunting and fishing. AR 215-1, chapter 7, section 5, addresses the handling of hunting and fishing fees. AR 215-1, chapter 8, section 18, guides the installation on use of a hunting and fishing program with the IMWRF program. In addition to hunting or fishing license fees, an additional IMWRF fee can be charged by the installation. However, this additional fee cannot be so high that it would limit public access to Army lands.

Army Regulation 405-80, Management of Title and Granting Use of Real Property (10 October 1997). This regulation states the policy for management of title, unauthorized use, and the granting of use of Army-controlled real property. Real property is defined in the regulation as any interest in land, together with the improvements, structures and fixtures, under the control of the Army. Interests include leaseholds, easements, rights-of-way, water rights, and air rights. Standing timber, embedded gravel and stone, and underground water are also considered real property. As it pertains to the conservation reimbursable and fee collection programs, this regulation provides requirements for agriculture and grazing outleases, including the identification of potential available property, reports of availability (a list of installation lands available and suitable for agriculture and grazing outleases, also known as ROAs), management responsibilities, and the delegation of authority. The types of issued outgrants, or legal documents that grant the right to use Army real property, include leases, easements, licenses, and permits. According to AR 405-80, the Commanding General, U.S. Army Corps of Engineers (USACE), and the USACE Director of Real Estate are delegated the authority to issue, execute, manage, renew, supplement, or revoke outgrants. They may redelegate this authority as appropriate. DA real property is periodically surveyed to determine the current use of the property, the degree of use, any interim or collateral use that could improve management, and the properties excess to Army needs.

Army Regulation 405-90, Disposal of Real Estate (10 May 1985). This regulation sets forth authorities, responsibilities, policies, and procedures for the disposal of military and industrial real estate under the custody and control of the DA. The General Services Administration delegates to the DA the authority to determine surplus real property and dispose of it. This includes standing timber. According to this regulation, while installations are responsible for forestry management, the USACE district commanders are responsible for selling timber. However, on 9 June 2004, the Assistant Chief of Staff for Installation Management (ACSIM) issued army guidance for timber sales that allows installations to sell timber independent of the USACE (see description of Army Guidance: Procedures for Installation-Conducted Timber Sale, below). An exception is that, unless otherwise agreed, the Bureau of Land Management disposes of timber on withdrawn public

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lands used by the DA.

Training Requirements

There is no legally mandated planing under this aspect.

Awareness

EMD web page:
The Forestry Program web page begins at page link:
http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/cnr/NaturalRes/forestry.html
The web page was checked by Terry Hazle on 11/14/2011 and determined to be adaquate for environmental awareness. The INRMP needs to have the newer one added to the web page.

Communications

Operational Controls

Required Permits

-NPDES and certain wetlands permits may be required to be completed before action can be taken for land use changes from forest to uses other than silviculture

Required Plans

-Forest Management Plan as part of the Redstone Arsenal Integrated Natural Resources Management Plan
-Annual Work Plan required annually for Army Environmental Command to determine funding required to run the program
-Annual Work Plan for CLS system to determine operational level of the program

Required Records

-records of consideration required for all actions falling under the National Environmental Policy Act
-Installation Income Summaries are received monthly from the Army Corps of Engineers Mobile District Forester and reported annually to Army Environmental Command
-Geographical Information Systems (GIS) layers are updated locally to record areas cleared for construction projects as well as areas thinned in conjunction with the forest management plan

Monitoring/Measuring Requiremens

Calibration

There is no calibration required for this aspect.

What Significant Impacts Are

Responsible Person(s)

Functional Proponent for the Program or Funds.

Environment Natural Resources Manager is the local proponent for this program.
The USACE district is the local program manager for the sale of forest products.
HQDA proponent for disposal guidance is the Chief of Engineers (COE).
Questions pertaining to real estate should be directed to CERE-R, (202) 761-7423 or DSN 763-7423.
The HQDA program proponent is Office of the Assistant Chief of Staff Installation Management (OACSIM), Director of Environmental Programs, DAIM-ED-T, (703) 693-0680 or DSN 223-0680.

Resources

Resources
The following legal statutes and policy guidance govern the operation of the Army Conservation Reimbursable and Fee Collection Programs. These statutes and guidance establish the legal authority to operate the programs, direct their operation, and guide the natural resource management of military installations.

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Title 10 of the United States Code
10 USC 2665 – Sale of certain interest in land; logs
10 USC 2667 – Leases: Non-excess property of military departments
10 USC 2671 – Military reservations and facilities: hunting, fishing, and trapping
The Sikes Act
DoD Policy
Defense Finance Accounting Service – Indianapolis Regulation 37-1, Finance and Accounting Policy Implementation, Chapter 14, Sales and Revenues, January 2000
Department of Defense Financial Management Regulation 7000.14-R, Volume 11A, Chapter 16 (March 1997)
Department of Defense Instruction 4715.3, Environmental Conservation Program (3 May 1996)
Army Regulations
Army Regulation 200-1, Environmental Protection and Enhancement (27 August 2008)
32 CFR 651, Environmental Analysis of Army Actions (29 March 2002)
Army Regulatory Guidance: Reimbursable Agricultural/Grazing and Forestry Programs (17 August 1999)
Nonappropriated Fund Instrumentalities (25 October 1998)
Army Regulation 405-80, Management of Title and Granting Use of Real Property (10 October 1997)
Army Regulation 405-90, Disposal of Real Estate (10 May 1985)
Army Policy Guidance
Army Guidance: Procedures for Installation-Conducted Timber Sales (9 June 2004)
Army Wildland Fire Policy Guidance (4 September 2002)
Army Policy Guidance: Fish and Wildlife Conservation Fund (January 2002)
Memorandum from the Principal Deputy Assistant Secretary of the Army (Installations and Environment), Army Forest Conservation Policy (16 January 2001)

Sustainability

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Set 2012 measureable targets.
Has anything been done to make people aware of trees & forests? Tree citing? Newspaper articles? Arbor Day?
What operational controls do we have in place?
How do you monitor the program?
How does the forestry program help sustain our mission, community and environment?

Location

Top Three Issues

Top Three Successes

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ID	Aspect	Subject Matter Expert(s)
29	**Recycling**	Marc Subido/Ramzi Makkouk

Discussion

Redstone Arsenal recycles commodities based on regulations and cost/benefit analyses. Based on guidance found in the QRP handbooks, Redstone Arsenal is required to recycle high-grade, white office paper and cardboard. For a list of recyclable items, see the Recycle QRP binder and the recycle video entitled, Reducing Your Bootprint.

Recycling is an aspect that has a mostly positive affect on the environment while the lack of recycling would have a negative impact on the environment. Either of these could be significant, therefor recycling will be managed as a aspect under the Redstone Arsenal Environmental Management System.

Impacts or possible impacts

Recycling is borne from the practice determining the best manner of waste disposal. The United States began realizing that landfills were become more and more restricted on placement and material acceptance. People began to look at alternatives to sending everything to the landfill where decomposition was not occurring.

Recycling commodities extends the life of the landfill. This keeps Restone Arsenal from sending their wastes to other locations and incurring tipping fees. A revenue is generated from recycling commodities.

Currently, the revenues from recycling are used to continue the operation of the Qualified Recycling Program. Money from proceeds from the 2010-2011 timeframe support one full-time employee and one hourly employee. The remaining funds are used for

Goals

- Recover all qualified recyclable materials.
- Protect national/natural resources.
- Conserve scarce and valuable landfill space.
- Recover strategic/critical materials.
- Maximize net dollars returned to Redstone Arsenal.
- Generate energy savings using scrap in the manufacturing process.
- Meet or exceed the Department of Defense measure of merit requiring that 60 percent of the non- hazardous solid waste generated will be recycled.

Measurable Targets

- - Increase the recycle value received through better, more efficient source segregation and
identification of material.

Letters of Instructions

Legal Requirements

The Alabama Recycling Regulations are found in the Alabama regulations at Chapter 335-13-3. The link to the Alabama Environmental Regulations is copied below:
http://www.adem.alabama.gov/alEnviroRegLaws/files/Division13.pdf

The portion of the Alabama code that authorized ADEM to regulate recycling is found in the Code of Alabama 1975, §§ 22-27-12, 22-27-15 and 22-27-16. Link below:
http://alisondb.legislature.state.al.us/acas/CodeofAlabama/1975/coatoc.htm

Chapter 13 of ADEM Environmental Regulations

REVIEW OF ADEM CHAPTER 335-13-3
PROCESSING AND RECYCLING

1. The Anniston Army Depot has raised the issue of whether their recycling operations require certification in accordance with ADEM Regulations in Chapter 335-13-3. Following

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this lead, RSA needs to determine if these regulations apply to its operations. Attachment One is a summary of RSA's recycling activities.
2. Purpose and Applicability. This regulation established the operating standards applicable to "Materials Recovery Facilities", "Recoverable Materials Processing Facilities", and other facilities that receive, store, process, and sale recovered materials that are not used on any on-site, end-use manufacturing process. Subject facilities are those that initially obtain "recyclable materials" which have been removed from the solid waste stream and determined to be recyclable by the generator of those materials. ADEM has not defined highlighted terms.
3. Facility Registration. No person may receive, store, process or transfer "recyclable material" without being properly registered with ADEM, except as exempted in later section of chapter. Any person who operates a "Materials Recovery Facility" or a "Recovered Materials Processing Facility", without having applied for registration with ADEM shall be considered to be operating an unpermitted solid waste facility…… All existing facilities were required to be registered by October 1, 2010. Appears ADEM wants to register only "Materials Recovery Facilities" and "Recovered Materials Processing Facilities" (No Definition).
4. Facility Application for Certification. The application for certification includes detailed discussion of the recycling operations, access controls, vector controls, site map, and other information. If required, this would be a time consuming effort.
5. Exemptions from Registration. Exemptions include:
   a. Recyclable asphalt shingles used by asphalt manufacturing process.
   B. On site reuse of recyclable materials used at point of generation.
   C. Grass clippings, etc used for composting.
   D. Scrap tire processing (Regulated under other ADEM regulations).
   E. Used oil/universal wastes (regulated under other ADEM regulations).
   F. Construction activities that generate recyclable materials if company or contractor
generator of materials, materials stored iaw with all applicable regulations (Stormwater BMP, etc.), and materials are on site a minimum of one year or completion of contract).
6. Variance from Requirements from this Chapter. Requests for a variance must supply a concise factual statement with supporting evidence, environmental, economic and/or otherwise that established the need for the variance. The request for a variance must also state the impact that the variance will impose on public health and the environment and how granting the variance will affect operations at the facility. A variance is good for three years, but may be renewed.
7. Facility Design and Operations. "Registered Materials Recovery and Recovered Materials Processing Facilities" shall be designed and operated according to section 335-13-3.03. Weekly inspections are required.
8. Storage and Accumulation Limitations. As determined on a yearly basis, each registered facility shall transfer at least 75% of the amount of material accumulated that is diverted from the solid waste stream or processed for recycling. Records must be kept for each material received by and shipped from the facility.
9. Recordkeeping and Reporting Requirements. Facilities must complete a receipt for all materials received at the facility. In addition, a semi-annual report of all recyclable materials or recovered materials transferred, sold, or conveyed out of state, to materials brokers in the State of Alabama, or to end-use manufacturers in Alabama must be prepared by the facility.
10. Summary. A determination must be made concerning the applicability of ADEM's Recycling certification requirement to RSA. If applicable, RSA must submit application and follow the design, operation, storage/accumulation, and recordkeeping/reporting requirements. An application for a variance should be considered.

Training Requirements

There are no legal training requirements for recycling regulations, however, the qualified recycling program manager will attend annual conference for conceerning recycling and solid waste programs sponsored by Federal, State, Local governments including The Solid Waste Association of North America(SWANA), a 501©(3) non-profit organization.

Awareness

EMD web page:
The recycling web page starts at page link:

http://www.garrison.redstone.army.mil/sites/directorates/dpw/emd/com/hazmatwaste/recycle.html
The recycling page was checked by Terry Hazle on 11/14/2011 and found to be adaquate for environmental awareness.

- Continue quarterly briefings about recycling thru mandated RCRA traning classes.

Communications

Operational Controls

A Standard Operating Procedure for Qualified Recycling - 200-1 has been established in December 2011 and can be accessed thru the Environmental Management Division webpage, See Regulations.

Required Permits

ADEM issued a permit as Materials Recovery/Recovered Materials Processing Facility on 11 September 2013, Registration Number: RF12514, Type: Processing and Recycling.

Required Plans

Qualified Recycling Business Plan has been submitted on 14 June 2013 for review.

Required Records

Records must be maintained in a sufficient manner as to be used to verify facility compliance with the seventy-five percent (75%) rate required by ADEM 335-13-3-.05.
Semi-annual report required to state identifying type and quantity of materials accepted in tons.

Monthly data are gathered and inputted to the Solid Waste Annual Reporting database at IMCOM.

Documentation of recycling transactions are captured via EMD Correspondence Log.

Monitoring/Measuring Requiremens

Calibration

None required. NOTE: When processing the bills of lading, the tare weight must be subtracted from the net weight to get the weight of the commodity.

What Significant Impacts Are

-Recycling offers an opportunity to substantially reduce the waste stream, extend landfill life, and decrease waste disposal costs. It will reduce environmental degradation while involving
the Redstone community in the solution to conserve energy and valuable resources.

Responsible Person(s)

Qualified Recycling Program Manager

(1) Sales records of qualified scrap by direct sales. Direct sales records shall contain item
description, sale price, sale date, payment date, weight of scrap sold, list of bidders and winning
bidder.
(2) Tracked the expense records for operating and overhead costs. Qualified recycling program records on operating costs shall include purchase of equipment, maintenance, program operation and expansion, labor costs, training, publicity, and overhead for processing recyclable materials.
(3) Record of incomes and expenditures on solid waste program software. This data shall be used to calculate the annual qualified recycling program revenue generation.
(4) Records of cost avoidance. Cost avoidance shall be estimated by determining the weight or volume of the material diverted from the waste stream, and calculating the labor, maintenance costs, landfill tipping fee, and any other disposal charges
that would have been incurred in the absence of waste prevention/recycling.
(5) Retain records of profit distributions to Pollution Abatement, Energy Conservation,

Occupational Health, or Safety projects and Family, Morale, Welfare, Recreational projects if the operation becomes profitable.
(6) Identify, process, market, and sell all qualified recyclable materials, except those that
the manager determines are required by regulation to be recycled by other means.
(7) Properly screen Other Qualified Recycling Materials through an informal process.
(8) Ensure excluded materials are not sold through the qualified recycling program.
(9) Assist in the implementation of recycling programs with tenants. Maintain contact with organization recycling committee to ensure compliance with qualified recycling program standard operating procedures.
(10) Manage the overall Redstone qualified recycling program to ensure the continuation and expansion of an aggressive program that will guarantee that Redstone receives full benefit from the
accumulation and sale of all qualified recyclable materials.
(11) Designate a trained individual (besides the QRP Manager) to conduct local sales (term and spot sales) and award sales agreements.
(12) Require the designated Appropriated Fund contracting officer's representative to sign all
documents requiring signature for the Federal government.
(13) Perform sales agreements administrative actions.
(14) Monitor the safety and training program to ensure a quality workplace for program employees.
(15) Serving as a liaison to installation personnel and customers for issues pertaining to recycling;
(16) Establish a qualified recycling standard operating procedure.

RECYCLING CENTER OPERATOR

The recycling center operator (Chugach) will assist the qualified recycling program manager and will be responsible for:

• Knowing the types of materials that can and cannot be sold through the qualified recycling program;
• Conducting packaging, and transport of the recyclables;
• Maintaining inventory records regarding each commodity;
• Preparing monthly and quarterly status reports for the qualified recycling manager as necessary;
• Quantifying and tracking materials received at the recycling centers that are diverted from landfills;
• Reporting quarterly diversion/recyclable information to qualified recycling program manager;
• Adhering to all policies regarding the handling of secure, official use only, and Privacy Act documents; attending security briefings on topics such as protection of classified documents; copying or discussing classified information; and security items relating to communications security operations security or essential elements
of friendly information ;
• Supervising recycling center personnel;
• Ensuring employees are trained regarding the processing and storage of recyclable materials;
• Maintaining employee training records regarding safety, equipment and vehicle operations, and proper management of recyclables;
• Establishing collection routes and schedules to ensure recyclables are collected routinely;
• Maintaining necessary licenses and training to operate equipment and vehicles;
• Coordinating with facility recycling coordinators, to identify unit requirements for recycling, such as type and size of container;
• Overall management of the recycling centers;
• Ensuring recycling centers is maintained to discourage the presence of vectors, pests, rodents, and
odors;
• Establishing hours of operation for the recycling centers;

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• Ensuring all valuable equipment and commodities are secured;
• Conducting operator inspections of equipment and vehicles;
• Establishing routine maintenance schedules for equipment and vehicles;
• Informing qualified recycling program manager in regards to the operation of the recycling center; and
• Identifying equipment, vehicle, and supply requirements necessary to operate the facility.

RECYCLING CENTER STAFF

The recycling center staff report directly to the recycling center manager and are responsible for:
• Collecting recyclables from installation facilities, and other locations on base for processing at the recycling center;
• Operating forklifts, vehicles, and processing machinery;
• Sorting and preparing recyclable materials for processing, storage, and transport;
• Performing operator maintenance and inspections on all vehicles, forklifts, and equipment;
• Providing assistance and guidance to customers as to the proper preparation and guidelines for recyclable materials;
• Assisting facility recycling monitors in determining container size, type, and collection frequency;
• Adhering to all policies regarding the handling of secure, official use only, and Privacy Act documents, attending security briefings on topics such as protection of classified documents, copying or discussing classified information, and security items to the above security organizations;
• Assisting the recycling center manager as necessary.
Defense Logistics Agency, Disposition Service
The Defense Logistics Agency, Disposition Service will perform the following:
• Provide assistance and disposal service to Department of Defense components and other authorized
customers;
• Promote and ensure maximum conservation of strategic and critical materials and precious metals;
• Provide screening of property to promote the maximum reuse, transfer, or donation of excess, surplus, and foreign excess personal property;
• Process authorized reuse, transfer, and donation requests;
• Perform market research to determine market potential of property available for sale and to optimize monetary return to the Government for property sold;
• Coordinate with the Defense Logistics Agency, Disposition Service to promote effective marketing techniques in the sale of property;
• Prepare and submit listing of property for sale and recommend the method of sale, when pertinent. Recommend special conditions for unusual requirements or restrictions for inclusion in the sale, as applicable;
• Conduct sales of property, as authorized;
• Maintain and provide records of quantity and types of material sold to the installation qualified recycling program;
• Transfer monies generated from the sales of recyclable items to the base qualified recycling program account, based on accounting codes maintained on DD Form 1348-1, "Disposal Turn-in
Document," at least quarterly; and
• Develop service and sales contracts for materials received to be recycled.

TENANT ORGANIZATIONS

Army policy dictates installations shall have a single, integrated QRP. This means tenants such as, but
not limited to, Marshall Space Flight Center, AAFES, and DECA, must participate in the installation
QRP. Marshall Space Flight Center, AAFES activities, and commissaries are permitted to sell their
recyclables outside the QRP and retain the proceeds. These organizations may choose to

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participate in the
installation QRP. If these organizations choose to have the QRP manage the handling and disposition of
recyclable materials, the QRP may recover the cost of recycling from the proceeds derived from those
participants. Regardless, all organizations at an installation must provide data on recycling and solid
waste generation to the Qualified Recycling Program Manager. This requirement allows the QRPM to calculate performance on the Solid Waste Annual Reporting to Headquarters, Installation Management Command in San Antonio, Texas for all activities on installation. This requirement may need to be included in memoranda of agreement and interservice support agreements

Resources

Sustainability

Consequences

Annual Review

Terry Hazle reviewed it on 8 September 11 and had the following comments:

Need goals and measureable targets for recycling.
What have we done to make people aware of the recycling program? What can we do?
What are the operational controls? Regulations?
What permits are required? Facility registration?
What monitoring are we required to do?
Do our scales need to be calibrated?
What are significant impacts associated with recycling?
How is recycling associated with recycling?
Who is responsible for doing what in the recycling program?
What are the consequences of not recycling?

Location

Top Three Issues

- Challenge the workforce about Green Procurement at all levels.
- Find better solutions to increase the diversion rate from an annual 3 to 4 percent as reported to the Solid Waste Annual Reporting (SWAR) database.

Top Three Successes

* Formed a Recycling Working Group Committee for 4th Quarter 2013.

* Continued program visibility thru media exposure (Redstone Rocket), RCRA mandatory training, and Enviromental Quality Control Committee in Fy 2013.

* Increase the diversion rate away from the landfill thru better monitoring of data from tenants.

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ID	Aspect	Subject Matter Expert(s)
30	**EMS**	Terry Hazle

Discussion

An Environmental Management System (EMS) is an aspect that can have a positive effect on the environment. Because of the need to define what an EMS is, how the EMS for Redstone Arsenal is put together, and the need to have an EMS, the decision has been made to include the EMS as a significant aspect of the Redstone Arsenal Environmental Management System. This decision was made by Terry Hazle on 12/21/2011

The EMS aspect management plan will be used to explain the contents of each of the different sections of the Aspect Management Plans

EMS has also been added so that we have a place to explain what each of the sections of the aspect management plan is and to use this to check to see if we are meeting all the requirements of section 4 (specifications) if the ISO 14001:2004 requirements.

4.1 General requirements

The organization shall establish, document, implement, maintain and continually improve an environmental management system in accordance with the requirements of this International Standard and determine how it will fulfil these requirements.

The organization shall define and document the scope of its environmental management system.

4.2 Environmental policy
Top management shall define the organization's environmental policy and ensure that, within the defined scope of its environmental management system, it
a) is appropriate to the nature, scale and environmental impacts of its activities, products and services,
b) includes a commitment to continual improvement and prevention of pollution,
c) includes a commitment to comply with applicable legal requirements and with other requirements to which the organization subscribes which relate to its environmental aspects,
d) provides the framework for setting and reviewing environmental objectives and targets,
e) is documented, implemented and maintained,
f) is communicated to all persons working for or on behalf of the organization, and
g) is available to the public.

4.3 Planning
4.3.1 Environmental aspects
The organization shall establish, implement and maintain a procedure(s)
a) to identify the environmental aspects of its activities, products and services within the defined scope of the environmental management system that it can control and those that it can influence taking into account planned or new developments, or new or modified activities, products and services, and
b) to determine those aspects that have or can have significant impact(s) on the environment (i.e. significant environmental aspects).
The organization shall document this information and keep it up to date.
The organization shall ensure that the significant environmental aspects are taken into account in establishing, implementing and maintaining its environmental management system.

4.4.3 Communication
With regard to its environmental aspects and environmental management system, the organization shall establish, implement and maintain a procedure(s) for
a) internal communication between the various levels and functions of the organization,
b) receiving, documenting and responding to relevant communication from external interested parties.
The organization shall decide whether to communicate externally about its significant environmental aspects, and shall document its decision. If the decision is to communicate, the organization shall establish and implement a method(s) for this external communication.

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4.4.4 Documentation
The environmental management system documentation shall include
a) the environmental policy, objectives and targets,
b) description of the scope of the environmental management system,
c) description of the main elements of the environmental management system and their interaction, and reference to related documents,
d) documents, including records, required by this International Standard, and
e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to its significant environmental aspects.

4.4.5 Control of documents
Documents required by the environmental management system and by this International Standard shall be controlled. Records are a special type of document and shall be controlled in accordance with the requirements given in 4.5.4.
The organization shall establish, implement and maintain a procedure(s) to
a) approve documents for adequacy prior to issue,
b) review and update as necessary and re-approve documents,
c) ensure that changes and the current revision status of documents are identified,
d) ensure that relevant versions of applicable documents are available at points of use,
e) ensure that documents remain legible and readily identifiable,
f) ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the environmental management system are identified and their distribution controlled, and
g) prevent the unintended use of obsolete documents and to apply suitable identification to them if they are retained for any purpose.

4.4.7 Emergency preparedness and response
The organization shall establish, implement and maintain a procedure(s) to identify potential emergency situations and potential accidents that can have an impact(s) on the environment and how it will respond to them.
The organization shall respond to actual emergency situations and accidents and prevent or mitigate associated adverse environmental impacts.
The organization shall periodically review and, where necessary, revise its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.
The organization shall also periodically test such procedures where practicable.

4.6 Management review
Top management shall review the organization's environmental management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental
policy and environmental objectives and targets. Records of the management reviews shall be retained.
Input to management reviews shall include
a) results of internal audits and evaluations of compliance with legal requirements and with other requirements to which the organization subscribes,
b) communication(s) from external interested parties, including complaints,
c) the environmental performance of the organization,
d) the extent to which objectives and targets have been met,
e) status of corrective and preventive actions,
f) follow-up actions from previous management reviews,
g) changing circumstances, including developments in legal and other requirements related to its environmental aspects, and
h) recommendations for improvement.
The outputs from management reviews shall include any decisions and actions related to possible changes to environmental policy, objectives, targets and other elements of the environmental management system, consistent with the commitment to continual improvement.

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Impacts or possible impacts

Goals

4.3.3 Objectives, targets and programme(s)
The organization shall establish, implement and maintain documented environmental objectives and targets, at relevant functions and levels within the organization.
The objectives and targets shall be measurable, where practicable, and consistent with the environmental policy, including the commitments to prevention of pollution, to compliance with applicable legal requirements and with other requirements to which the organization subscribes, and to continual improvement.
When establishing and reviewing its objectives and targets, an organization shall take into account the legal requirements and other requirements to which the organization subscribes, and its significant environmental aspects. It shall also consider its technological options, its financial, operational and business requirements, and the views of interested parties.
The organization shall establish, implement and maintain a programme(s) for achieving its objectives and targets. Programme(s) shall include
a) designation of responsibility for achieving objectives and targets at relevant functions and levels of the organization, and
b) the means and time-frame by which they are to be achieved.

Measurable Targets

See Goals

Letters of Instructions

Legal Requirements

4.3.2 Legal and other requirements
The organization shall establish, implement and maintain a procedure(s)
a) to identify and have access to the applicable legal requirements and other requirements to which the organization subscribes related to its environmental aspects, and
b) to determine how these requirements apply to its environmental aspects.
The organization shall ensure that these applicable legal requirements and other requirements to which the organization subscribes are taken into account in establishing, implementing and maintaining its environmental management system.

Training Requirements

4.4.2 Competence, training and awareness
The organization shall ensure that any person(s) performing tasks for it or on its behalf that have the potential to cause a significant environmental impact(s) identified by the organization is (are) competent on the basis of appropriate education, training or experience, and shall retain associated records.
The organization shall identify training needs associated with its environmental aspects and its environmental management system. It shall provide training or take other action to meet these needs, and shall retain associated records.
The organization shall establish, implement and maintain a procedure(s) to make persons working for it or on its behalf aware of
a) the importance of conformity with the environmental policy and procedures and with the requirements of the environmental management system,
b) the significant environmental aspects and related actual or potential impacts associated with their work, and the environmental benefits of improved personal performance,
c) their roles and responsibilities in achieving conformity with the requirements of the environmental management system, and
d) the potential consequences of departure from specified procedures.

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish,

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implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

Awareness

4.4.2 Competence, training and awareness
The organization shall ensure that any person(s) performing tasks for it or on its behalf that have the potential to cause a significant environmental impact(s) identified by the organization is (are) competent on the basis of appropriate education, training or experience, and shall retain associated records.
The organization shall identify training needs associated with its environmental aspects and its environmental management system. It shall provide training or take other action to meet these needs, and shall retain associated records.
The organization shall establish, implement and maintain a procedure(s) to make persons working for it or on its behalf aware of
a) the importance of conformity with the environmental policy and procedures and with the requirements of the environmental management system,
b) the significant environmental aspects and related actual or potential impacts associated with their work, and the environmental benefits of improved personal performance,
c) their roles and responsibilities in achieving conformity with the requirements of the environmental management system, and
d) the potential consequences of departure from specified procedures.

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

Communications

Operational Controls

4.4.6 Operational control
The organization shall identify and plan those operations that are associated with the identified significant environmental aspects consistent with its environmental policy, objectives and targets, in order to ensure that they are carried out under specified conditions, by
a) establishing, implementing and maintaining a documented procedure(s) to control situations where their absence could lead to deviation from the environmental policy, objectives and targets, and
b) stipulating the operating criteria in the procedure(s), and
c) establishing, implementing and maintaining procedures related to the identified significant environmental aspects of goods and services used by the organization and communicating applicable procedures and requirements to suppliers, including contractors.

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of

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legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

Required Permits

4.3.2 Legal and other requirements
The organization shall establish, implement and maintain a procedure(s)
a) to identify and have access to the applicable legal requirements and other requirements to which the organization subscribes related to its environmental aspects, and
b) to determine how these requirements apply to its environmental aspects.
The organization shall ensure that these applicable legal requirements and other requirements to which the organization subscribes are taken into account in establishing, implementing and maintaining its environmental management system.

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

Required Plans

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

4.5.3 Nonconformity, corrective action and preventive action
The organization shall establish, implement and maintain a procedure(s) for dealing with actual and potential nonconformity(ies) and for taking corrective action and preventive action. The procedure(s) shall define requirements for
a) identifying and correcting nonconformity(ies) and taking action(s) to mitigate their environmental impacts,
b) investigating nonconformity(ies), determining their cause(s) and taking actions in order to avoid their recurrence,
c) evaluating the need for action(s) to prevent nonconformity(ies) and implementing appropriate actions designed to avoid their occurrence,
d) recording the results of corrective action(s) and preventive action(s) taken, and
e) reviewing the effectiveness of corrective action(s) and preventive action(s) taken.
Actions taken shall be appropriate to the magnitude of the problems and the environmental impacts encountered.
The organization shall ensure that any necessary changes are made to environmental management system documentation.

Required Records

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).

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The organization shall keep records of the results of the periodic evaluations.

4.5.4 Control of records
The organization shall establish and maintain records as necessary to demonstrate conformity to the requirements of its environmental management system and of this International Standard, and the results achieved.
The organization shall establish, implement and maintain a procedure(s) for the identification, storage, protection, retrieval, retention and disposal of records.
Records shall be and remain legible, identifiable and traceable.

Monitoring/Measuring Requiremens

4.5.1 Monitoring and measurement
The organization shall establish, implement and maintain a procedure(s) to monitor and measure, on a regular basis, the key characteristics of its operations that can have a significant environmental impact. The procedure(s) shall include the documenting of information to monitor performance, applicable operational controls and conformity with the organization's environmental objectives and targets.
The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained and shall retain associated records.

4.5.2 Evaluation of compliance
4.5.2.1 Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.
4.5.2.2 The organization shall evaluate compliance with other requirements to which it subscribes. The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).
The organization shall keep records of the results of the periodic evaluations.

4.5.5 Internal audit
The organization shall ensure that internal audits of the environmental management system are conducted at planned intervals to
a) determine whether the environmental management system
1) conforms to planned arrangements for environmental management including the requirements of this International Standard, and
2) has been properly implemented and is maintained, and
b) provide information on the results of audits to management.
Audit programme(s) shall be planned, established, implemented and maintained by the organization, taking into consideration the environmental importance of the operation(s) concerned and the results of previous audits.
Audit procedure(s) shall be established, implemented and maintained that address the responsibilities and requirements for planning and conducting audits, reporting results and retaining associated records, the determination of audit criteria, scope, frequency and methods.
Selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process.

Calibration

The purpose of this section is to list all equipment that needs to be calibrate to meet the requirements of this aspect. At a minium the equipment that needs caibration to meet a legal monitoring requirement needs to be listed in this section. If there is no equipment needing calibration to meet a legal requirement that needs to be stated in this section. For andy equipment identified needing calibration a not should be entered for the last and next calibration. Do not delete dates for last calibration when updating this.

The requirement for this section is found in ISO14001 @

4.5.1 Monitoring and measurement
The organization shall establish, implement and maintain a procedure(s) to monitor and measure, on a regular basis, the key characteristics of its operations that can have a

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significant environmental impact. The procedure(s)shall include the documenting of information to monitor performance, applicable operational controls and conformity with the organization's environmental objectives and targets.

The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained and shall retain associated records.
And
4.5.1 Monitoring and measurement
The organization shall establish, implement and maintain a procedure(s) to monitor and measure, on a regular basis, the key characteristics of its operations that can have a significant environmental impact. The procedure(s) shall include the documenting of information to monitor performance, applicable operational controls and conformity with the organization's environmental objectives and targets.
The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained and shall retain associated records.

There is no equipment that needs to be calibrate for the EMS aspect itself.

What Significant Impacts Are

Responsible Person(s)

4.4.1 Resources, roles, responsibility and authority
Management shall ensure the availability of resources essential to establish, implement, maintain and improve the environmental management system. Resources include human resources and specialized skills, organizational infrastructure, technology and financial resources. Roles, responsibilities and authorities shall be defined, documented and communicated in order to facilitate effective environmental management.
The organization's top management shall appoint a specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for
a) ensuring that an environmental management system is established, implemented and maintained in accordance with the requirements of this International Standard,
b) reporting to top management on the performance of the environmental management system for review, including recommendations for improvement.

Resources

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b) reporting to top management on the performance of the environmental management system for review, including recommendations for improvement.

Sustainability

Consequences

4.4.2 Competence, training and awareness
The organization shall ensure that any person(s) performing tasks for it or on its behalf that have the potential to cause a significant environmental impact(s) identified by the

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organization is (are) competent on the basis of appropriate education, training or experience, and shall retain associated records.
The organization shall identify training needs associated with its environmental aspects and its environmental management system. It shall provide training or take other action to meet these needs, and shall retain associated records.
The organization shall establish, implement and maintain a procedure(s) to make persons working for it or on its behalf aware of
a) the importance of conformity with the environmental policy and procedures and with the requirements of the environmental management system,
b) the significant environmental aspects and related actual or potential impacts associated with their work, and the environmental benefits of improved personal performance,
c) their roles and responsibilities in achieving conformity with the requirements of the environmental management system, and
d) the potential consequences of departure from specified procedures.

Annual Review

4.6 Management review
Top management shall review the organization's environmental management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental policy and environmental objectives and targets. Records of the management reviews shall be retained.
Input to management reviews shall include
a) results of internal audits and evaluations of compliance with legal requirements and with other requirements to which the organization subscribes,
b) communication(s) from external interested parties, including complaints,
c) the environmental performance of the organization,
d) the extent to which objectives and targets have been met,
e) status of corrective and preventive actions,
f) follow-up actions from previous management reviews,
g) changing circumstances, including developments in legal and other requirements related to its environmental aspects, and
h) recommendations for improvement.
The outputs from management reviews shall include any decisions and actions related to possible changes to environmental policy, objectives, targets and other elements of the environmental management system,consistent with the commitment to continual improvement.

Location

To define the location of where the aspact occurs or the documentation of where the aspect occurs.

Top Three Issues

Top Three Successes

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