

Annual
Site Environmental Report
Calendar Year 2006



AMES LABORATORY

Iowa State University
Ames, Iowa 50011-3400

Prepared for the
U.S. Department of Energy
Under Contract No. W-7405-ENG-82

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- 1) Letter from IDPH, Closure of nine waste sites, January 11, 1996.
- 2) Letter from DOE-CH, Regarding the Iowa State College Dump Site, April 20, 1999.
- 3) Letter from IDPH, Closure of the Former Iowa State College Dump Site, September 17, 2001.
- 4) Letter from IDPH, Closure of the Fire Service Institute Training Area, February 26, 2002.

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- 1) EPA letter (NOV's), April 6, 1999.
- 2) EPA e-mail status of CDS and WHF EPA ID Numbers, July 8, 2003.
- 3) DOE-AMSO memorandum approving Laboratory's EMS, December 21, 2005.
- 4) EPA letter (RCRA Inspection), April 27, 2006.

1.0 EXECUTIVE SUMMARY

This report summarizes the environmental status of Ames Laboratory for calendar year 2006. It includes descriptions of the Laboratory site, its mission, the status of its compliance with applicable environmental regulations, its planning and activities to maintain compliance, and a comprehensive review of its environmental protection, surveillance and monitoring activities.

Ames Laboratory is located on the campus of Iowa State University (ISU) and occupies 11 buildings owned by the Department of Energy (DOE). See the Laboratory's Web page at www.external.ameslab.gov for locations and Laboratory overview. The Laboratory also leases space in ISU owned buildings.

In 2006, the Laboratory accumulated and disposed of waste under U.S. Environmental Protection Agency (EPA) issued generator numbers. All waste is handled accordingly to all applicable EPA, State, Local and DOE Orders. The Laboratory lowered its generator status from a Large Quantity Generator (LQG) to a Small Quantity Generator (SQG). EPA Region VII was notified of this change.

The Laboratory's RCRA hazardous waste management program was inspected by EPA Region VII in April 2006. There were no notices of violations. The inspector was impressed with the improvements of the Laboratory's waste management program over the past ten years.

The Laboratory was in compliance with all applicable federal, state, local and DOE regulations and orders in 2006.

There were no radiological air emissions or exposures to the general public due to Laboratory activities in 2006. See U.S. Department of Energy Air Emissions Annual Report in Appendix B.

Pollution awareness, waste minimization and recycling programs were implemented in 1990 and updated in 2003. Included in these efforts were battery and CRT recycling, waste white paper and green computer paper-recycling. Ames Laboratory also recycles/reuses salvageable metal, used oil, styrofoam peanuts, batteries, CRTs, fluorescent lamps and telephone books. .

Ames Laboratory reported to DOE-Ames Site Office (AMSO), through the Laboratory's Self Assessment Report, on its Affirmative Procurement Performance Measure. A performance level of "A" was achieved in 2006 for Integrated Safety, Health, and Environmental Protection.

The Laboratory underwent a voluntary Environmental Management Review (EMR) in 2003. Members of the Environmental Protection Agency (EPA) Region VII and Iowa Department of Natural Resources (IDNR) conducted the EMR in November 2003. The EMR was conducted as part of the process for developing and implementing an Environmental Management System (EMS) at the Laboratory. The final EMR report was received on June 19, 2003. Most of the recommendations were implemented to fulfill the EMS requirements for the ISO 14001:1996 standard. In 2004, the Laboratory "Self Declared" that it had fully integrated an EMS with its Integrated Safety

Management System (ISMS) and met the requirements of Executive Order 13148. In November of 2005 DOE-AMSO conducted a self-declaration assessment of the Laboratory's EMS.

The assessment found two nonconformities that the Laboratory promptly corrected, allowing the DOE-AMSO to accept the Laboratory's self-declaration (See EMS Assessment letter, December 21, 2005 in Appendix D). The integration of the EMS into the way the Laboratory does business allows the Laboratory to maintain its environmental compliance, prevent pollution and conserve energy.

2006 Ames Laboratory Site Environmental Report Feedback Form

This feedback form is provided to solicit public input on the development and improvement of future SER's. Public input is encouraged and appreciated. Remove and copy as needed. Attach additional pages as needed or send comments to kayser@ameslab.gov.

Return to: Ames Laboratory
Environment, Safety, Health & Assurance
G40 TASF, Iowa State University
Ames, IA 50011-3400
ATTN: Dan Kayser

1. What prompted your interest in environmental activities at Ames Laboratory?
2. In what ways can this report document and/or format be improved?
3. Do you have any questions on specific items or issues in this report?
4. Do you have any other comments?

2.0 INTRODUCTION

2.1 Site Description

Ames Laboratory is a U.S. DOE facility located on the campus of Iowa State University (ISU) at Ames, Iowa. See the Laboratory's Web page at www.external.ameslab.gov for locations and Laboratory overview. Ames is a government-owned, contractor-operated (GOCO) facility. ISU is the Laboratory's contractor. The Technical and Administrative Services Facility (TASF) houses most of the Laboratory's management offices. The buildings owned by the Department of Energy (DOE) are listed below.

<u>Building</u>	<u>Gross Square Feet</u>
Spedding Hall	107,630
Metals Development Building	69,663
Wilhelm Hall	56,541
TASF	46,991
Campus Warehouse Building	16,506
Mechanical Maintenance Building	8,540
Paint and Air Conditioning Shops	4,954
Construction Storage Shed	4,398
Storage Shed	2,100
Records Storage	1,679
Storage Shed	500
<hr/>	<hr/>
Total DOE Owned	327,102

In addition to the buildings owned by the DOE, Ames Laboratory leased a net total of 27,889 square feet of space from ISU in 2006. In 1987 the DOE transferred ownership of the buildings it owned at the Applied Science Complex (ASC) site to ISU. Ames Laboratory retained beneficial use of the Waste Handling Facility (WHF) and the High Pressure Test Cell at the ASC. The WHF housed the Alpha Facility, a laboratory that was designed to use small amounts of radionuclides. The Alpha Facility was gutted and surveyed for radioactive contamination. The WHF has no further use and has become a maintenance burden over the years. The WHF and the Alpha Facility were demolished in 2006 (see section 5.7.5). The ASC is located one-mile northwest of ISU's main campus.

The City of Ames, Iowa surrounds the ISU main campus. In 2006 the population of Ames was approximate 53,284, which includes the ISU student population of approximately 25,400. Ames is located in Story County, which has a population of approximately 80,204.

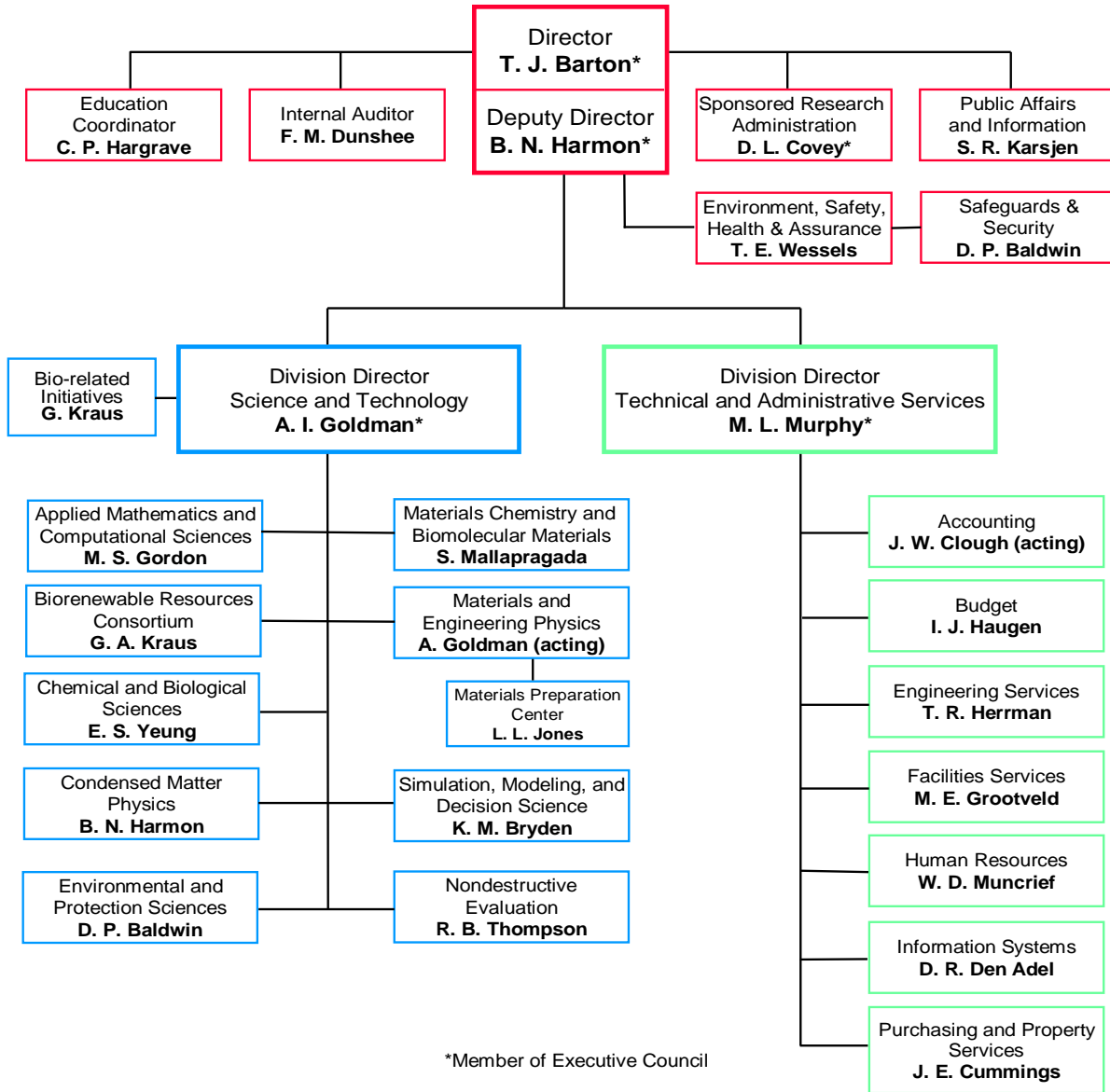
The climate is temperate continental, and is subject to wide temperature and precipitation ranges throughout the year. Mean monthly temperature varies from a low of minus 7.5 degrees Celsius (18.5°F) in January to a high of 23.8 degrees Celsius (74.8°F) in July. Average rainfall equivalent precipitation varies from 1.8 centimeters (0.7 inches) in January to 13.7 centimeters (5.4 inches) in June.

The region's topography is gently rolling with a slight overall gradient to the southeast. Under the shallow topsoil, the soils are glacial till with a depth of approximately 19.8 meters (65 feet). This material is underlain by predominantly limestone bedrock. In the central campus area, the depth to first groundwater is approximately 3.0 meters (10 feet). At the ASC site depth to groundwater averages approximately 5.5 meters (18 feet). Surface run-off from both areas flows into Squaw Creek, a tributary of the South Skunk River. The streams have a combined average daily flow of approximately 644 million liters (170 million gallons).

2.2 Organization and Administration

Iowa State University operates Ames Laboratory for the United States government under Contract Number W-7405-ENG-82 with the U.S. DOE. The DOE Office of Science, through the Ames Site Office, administers the contract. Ames Laboratory is a member of the Institute for Physical Research and Technology (IPRT), a network of scientific research centers at ISU. In 2006, the Laboratory employed a total of 611 people. 428 full and part time employees and 183 associate (non-payroll) employees. See Organizational Chart, Figure 2.2-1.

Ames Laboratory Organization



December 2006

Figure 2.2-1

2.3 Mission

The Laboratory's mission is to conduct fundamental research in the physical, chemical, materials, and mathematical sciences and physics, which underlie energy generating, conversion, transmission and storage technologies, environmental improvement, and other technical areas essential to national needs. These efforts will be maintained so as to contribute to the achievement of the Department of Energy's missions and goals; more specifically, to increase the general level of scientific knowledge and capability, to prepare engineering and physical sciences students for future scientific endeavors, and to initiate nascent technologies and practical applications arising from the Laboratory's scientific programs.

The Laboratory will approach all of its operations with the safety and health of all workers as a constant objective and with genuine concern for the environment. Ames Laboratory does not conduct classified research.

2.4 Purpose of Site Environmental Report

The primary purpose of this report is to summarize the performance of Ames Laboratory's environmental programs, present highlights of significant environmental activities, and confirm compliance with environmental regulations and requirements for calendar year 2006. This report is a working requirement of Department of Energy Order 231.1, *Environment, Safety, and Health Reporting*".

3.0 COMPLIANCE SUMMARY

3.1 Calendar Year 2006 Compliance Status

The Laboratory was in compliance with all applicable environmental regulations in 2006.

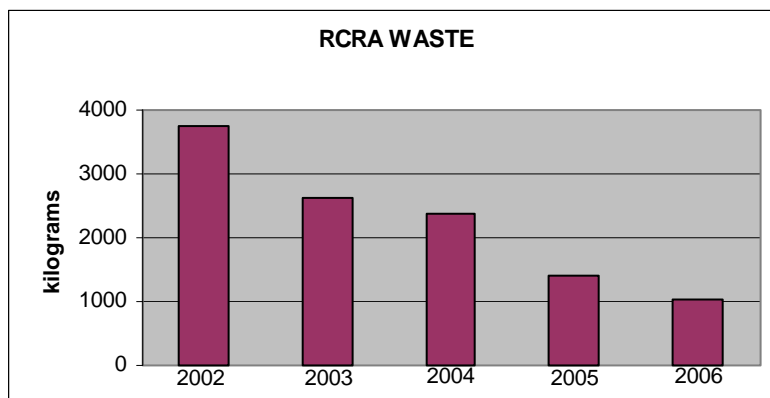
3.2 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

There were no sites regulated under CERCLA.

Proper public comment periods have been observed for former site restoration activities (See section 5.7). The community advisory group (CAG), formed in May 1994, was and is the primary vehicle for public input to these activities. The CAG met with Ames Laboratory and ISU representatives on February 23, 1998, to discuss corrective actions proposed for the Fire Service Institute Training Area (FSITA). The most recent interaction with CAG members include a letter regarding the Energy Employees Occupational Illness Compensation Program Act (EEOICP) and a letter regarding the Laboratory's support of the Special Exposure Cohort Petition for employees who worked at the Laboratory from 1942-1955. EEOICP's mission is to deliver benefits to eligible employees and former employees of the Department of Energy, its contractors and subcontractors or to certain survivors of such individuals, as provided in the EEOICP Act.

3.3 Resource Conservation and Recovery Act (RCRA)

Ames Laboratory is a government-owned, contractor-operated (GOCO) facility. All waste generated by Ames Laboratory under the contract with DOE is DOE waste. In 2006, DOE had one active RCRA site and two inactive sites. (See the summary table in section 3.17). Activities associated with the main campus EPA ID number were those of a large quantity generator. In calendar year 2006, 1,022 kg of hazardous waste was properly disposed of through a contracted vendor. The bar graph below shows a reduction in RCRA hazardous waste over the past five years.



All reporting requirements were met. The former Waste Handling Facility (WHF) and the former Chemical Disposal Site (CDS) have been designated by EPA as “non-generator” sites (See correspondence in APPENDIX D).

The WHF was demolished in 2006 (See section 5.7.5). The CDS waste removal was completed in 1995 (See section 5.7.1 and correspondences in APPENDIX A).

The Laboratory’s biennial report (aka: *Hazardous Waste Report*) is a report of RCRA waste removed from a facility that is required by the EPA every two years. The report was completed and submitted, to the EPA, in January 2006 for the 2005 calendar year. The report is required of all large quantity generators or if waste is treated, stored or disposed onsite. The next report is due March 1, 2008 for calendar year 2007.

The Laboratory disposed of wastes at an out of state EPA permitted facility. There were two shipments of RCRA waste and no shipments of low-level radioactive waste in 2006. No mixed waste was generated or disposed of in 2006.

The Laboratory had no underground storage tanks (UST’s) in 2006. The last UST (emergency generator diesel fuel) was removed in August 1995. It was replaced with an aboveground, double walled diesel tank with interstitial leak detection. There were no problems associated with the tank in 2006.

3.4 Federal Facilities Compliance Act (FFCA)

The FFCA is part of 42 USC 6901 and amends a part of RCRA. FFCA requires the preparation of site treatment plans for the handling of mixed wastes. EPA approved the Ames Laboratory Site Treatment Plan (STP) in January 1996.

Two waste streams were not included in the final STP because the Laboratory found process treatments that avoided creating mixed waste and, therefore, avoided the effort and expense of managing mixed wastes: 1) transuranic waste has been managed according to applicable state and federal regulations as well as applicable DOE orders. Transuranic solutions were neutralized and stabilized in the fall of 2000. The stabilized material (0.25 m³) was sent to Hanford as LLW in 2001; 2) contaminated lead was eliminated from the STP because in-process treatment prevents it from meeting the definition of mixed waste.

Any newly generated mixed waste will be handled and disposed of accordingly to EPA, state, local and DOE orders.

3.5 National Environmental Policy Act (NEPA)

The Laboratory had six categorical exclusion (CX) determinations in 2006 that involved research activities at offsite institutions. All other activities were covered under the Laboratory's "site-wide" categorical exclusion for "Indoor Bench-Scale Research Projects and Conventional Laboratory Operations" which was submitted and approved by DOE-AMSO. This exclusion is valid through September 2008. This "site-wide" CX eliminates unnecessary documentation but will still uphold the integrity of NEPA. Categorical exclusions are classes of actions that DOE has determined do not individually or cumulatively have a significant effect on the environment and do not require the preparation of either an environmental assessment or an environmental impact statement.

3.6 Clean Air Act (CAA) and National Emissions Standards for Hazardous Air Pollutants (NESHAPS)

U.S. EPA Region VII has delegated CAA authority to the State of Iowa Department of Natural Resources (IDNR). The IDNR issued an official ruling for Ames Laboratory on July 18, 1994, stating that no permitting and no monitoring is required for the Laboratory's fume hoods.

The Laboratory maintains two construction air permits which were issued by the IDNR in December 1996. These are for the paint booth and sand blaster. A paint booth in the Ames Laboratory Graphics department is exempt from permitting. (See correspondence in APPENDIX B and section 3.17 for a summary of permits).

The Laboratory was in compliance with all CAA requirements, including the NESHAP regulations for radionuclide emissions from DOE facilities. The Laboratory used small quantities of chemicals and radioactive materials for laboratory bench-top research and development activities in 2006. Any air emissions generated by Ames Laboratory research activities were de minimis. The Laboratory did not have any air emissions in 2006 that could have exposed the public to radioactivity (See correspondences in APPENDIX B).

3.7 Clean Water Act (CWA)

Ames Laboratory does not have any point sources of effluents requiring National Pollutant Discharge Elimination System (NPDES) permits. The Laboratory discharges all liquid wastes to the ISU sanitary sewer system, which discharges into the City of Ames sanitary sewer system. The City of Ames has an NPDES permit. The City of Ames has an agreement for wastewater pre-treatment with ISU, which includes Ames Laboratory's wastewater. Both the City of Ames and ISU sampled the university's wastewater effluent using EPA protocols and methods in 2006 as part of this agreement. Since existing DOE buildings are on land leased from ISU, the ISU storm-water permit (MS4s) covers Ames Laboratory activities. The Laboratory discharged approximately 18,238,628 liters (4,818,660 gallons) of wastewater to ISU's sanitary sewer system in 2006. This was 2.50 percent of the total discharged from ISU's campus buildings. The university discharged 726,750,204 liters (192,007,980 gallons) of wastewater to the City of Ames sewer system.

3.8 Safe Drinking Water Act (SDWA)

Drinking water for the Laboratory is supplied by the City of Ames public water system through the university's water mains. The Ames public water system is tested by the city to verify SDWA standards are being met. The Laboratory used 18,238,628 liters (4,818,660 gallons) of potable water in 2006, or less than 2.0 percent of the 1,124,563,224 liters (297,110,495 gallons) used by the university.

Ames Laboratory drinking fountains are sampled by Ames Laboratory Facility Services, however, fountains were not sampled for lead in 2006. Historical data shows no evidence of lead in drinking water. Drinking water will be sampled in 2007. Previous year results are summarized in Table 3.8-1.

Table 3.8-1

Drinking Fountain Analysis

Building Location	1999 Lead (mg/l)	2000 Lead (mg/l)	2001 Lead (mg/L)	2002 (mg/L)	2003 (mg/L)	2005 (mg/L)
Spedding Hall, 1 st floor west hallway		<0.002				
Spedding Hall, ground floor east hallway	< 0.002		<0.002	<0.005	<0.005	<0.005
Wilhelm Hall, 3 rd floor east hallway	< 0.002	< 0.002	< 0.002	<0.005	<0.005	<0.005
Metals Development, room 158	< 0.002	< 0.004	< 0.002	<0.005	<0.005	<0.005

* The regulatory limit for lead is 0.015 mg/l.

3.9 Superfund Amendments and Reauthorization Act (SARA) Title III and Iowa Administrative Code (IAC), Rule 567, Chapter 131, Spill Response

The Laboratory was not required to report under the Emergency Planning & Community Right to Know Act (EPCRA) Sections 302-303, 311-312,313 in 2005. The Laboratory did not store any chemicals in excess or near EPCRA threshold limits in 2006. The Laboratory does maintain memorandums of understanding (MOU) with the Iowa State University Department of Public Safety and the City of Ames Fire Department for emergency and hazardous material situations. Copies of MOU's are located in the "Ames Laboratory Emergency Plan". The Laboratory was not required to report under EPCRA Section 304 as there were no reportable releases.

Spills to the environment are reported to the Iowa Department of Natural Resources in accordance with the IAC, Rule 567, Chapter 131. Spills are cleaned up in accordance with the IAC, Rule 567, Chapter 133. There is no minimum reportable quantity under Chapter 131. There were no reportable environmental spills in 2006.

Reportable spills, releases and occurrences are entered in DOE's Occurrence Reporting and Processing System (ORPS) as prescribed in DOE Manual 231.1-2. The Laboratory also reports any "reportable" spills/releases to DOE-AMSO on a quarterly basis.

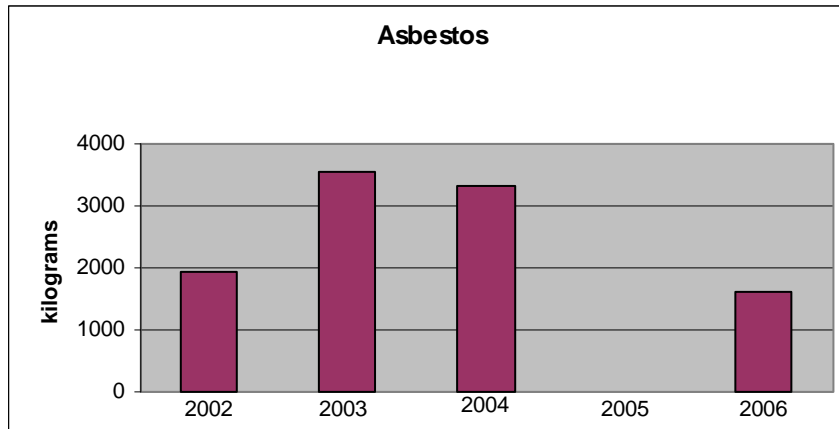
Table 3.9-1

Status of EPCRA Reporting

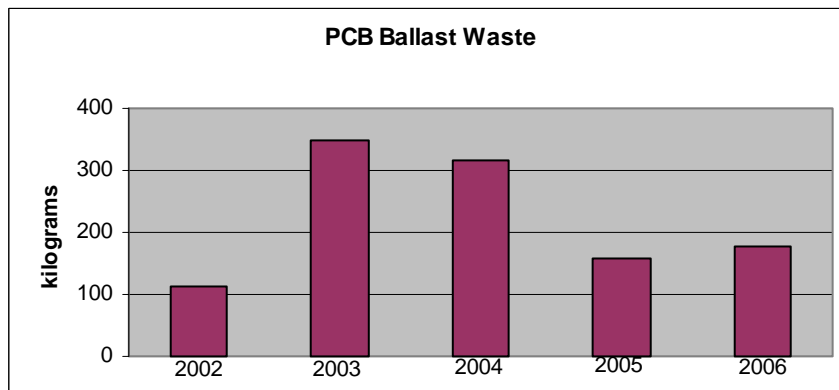
<i>EPCRA Section</i>	<i>Description of Reporting</i>	<i>Status</i>
EPCRA Sec. 302-303	Planning Notification	Not Required
EPCRA Sec. 304	EHS Release Notification	Not Required
EPCRA Sec. 311-312	MSDS/Chemical Inventory	Voluntarily Reporting/Not Required
EPCRA Sec. 313	TRI Reporting	Not Required

3.10 Toxic Substances Control Act (TSCA)

Approximately 1619 kg of asbestos containing material (ACM) was disposed of in 2006. Ames Laboratory ACM is disposed of in the Ames-Story Environmental Landfill. The landfill is permitted to accept ACM under IDNR issued permit number 85-SDP-13-91P. The Laboratory complies with the State of Iowa Solid Waste Disposal Rule #102.14 and 40 CFR 61, Subpart M (asbestos NESHAP) when disposing of ACM. The bar graph below shows ACM volumes over the past five years. ACM volumes are determined by the level of renovation activities (i.e. floor tile, fume hoods, and pipe insulation).



Approximately 177 kg of PCB ballasts were disposed in 2006.



3.11 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Ames Laboratory does not purchase or use pesticides regulated by FIFRA. Pesticide spraying is done in portions of buildings by a licensed applicator using approved chemicals.

3.12 Endangered Species Act (ESA)

No endangered species have been identified on or near Ames Laboratory facilities or Laboratory controlled areas.

3.13 National Historic Preservation Act (NHPA)

The State Historic Preservation Officer (SHPO) was contacted in 1997. As a result of this meeting the SHPO stated that there are no historic districts on the ISU Campus or in the City of Ames. As of September 16, 1997, there are nine structures on ISU's campus that are on the state historic register. None of these buildings are associated with Ames Laboratory activities.

DOE-owned buildings at the Ames Laboratory are on land leased to DOE by Iowa State University. None of the buildings at Ames Laboratory have been evaluated for eligibility for listing on the National Register of Historical Places. Buildings will be evaluated during the planning stage of projects involving demolition or renovation and DOE, in consultation with the SHPO, will determine eligibility for listing. Any adverse impact to an eligible building would be mitigated in consultation with the SHPO

The Ames Laboratory procedure for identifying hazards prior to disposition of excess materials requires that excess items be evaluated for historical significance.

3.14 Migratory Bird Treaty Act

There are over 200 bird species that may migrate through Ames, IA. However, there are no activities at the Ames Laboratory that affect migratory birds.

3.15 Executive Order 11988, "Floodplain Management"

All Laboratory facilities are well outside the 100-year flood line as mapped by the U.S. Geological Survey (USGS) and the Iowa Geological Survey Bureau (GSB). The Lab is in full compliance with 10 CFR 1022.

3.16 Executive Order 11990, "Protection of Wetlands"

No wetlands are affected by Ames Laboratory activities. The Lab is in full compliance with 10 CFR 1022.

3.17 Summary of Permits

In 2006, Ames Laboratory had two air emission source construction permits, it had no environmental discharge, operational, storage, treatment or disposal permits for gaseous, liquid or solid effluents. DOE held three waste generator identification numbers for Ames Laboratory in 2006, although two of the sites were inactive. In 2006 the Laboratory switched from a Large Quantity Generator (LQG) RCRA status to a Small Quantity Generator (SQG) status.

Table 3.17-1

DOE Air Emissions Source Construction Permit Numbers

Permit Number	Type	Ames Laboratory Facility/Area	Expiration
96-A-1282	Air	Ames Lab Paint Booth	None
96-A-1283	Air	Ames Lab Sand Blaster	None

Table 3.17-2

DOE RCRA Generator Identification Numbers

RCRA Generator ID #	Type	Ames Laboratory Facility/Area	Expiration
IA6890008950	SQG	Ames Lab #3-DOE (main campus)	None
* IAD984617605	CESQG	Ames Lab #1-DOE (Waste Handling Facility)	None
* IA0000365973	SQG	Ames Lab #2-DOE/ISU (chemical disposal site)	None

* Both sites have been designated by the EPA as "non-generators".

4.0 ENVIRONMENTAL PROGRAM

4.1 Environmental Management System

The Laboratory's Environmental Management System (EMS) is incorporated into the Laboratory's Integrated Management System (ISMS). The Laboratory's EMS web link is <http://www.external.ameslab.gov/esha/Worksmartstd/EMS.htm> which contains relevant policies and procedures to the Laboratory's EMS.

4.1.1 EMS Effectiveness

The Laboratory's EMS has been effective. Due to basic research at the Laboratory environmental aspects do not drastically change. However, with the integration into the Laboratory's Integrated Management System (ISMS) there are systems in place to adequately detect new environmental aspects and impacts. The Laboratory has an Environmental Management System Steering Group that consists of researchers, safety personnel, facilities personnel, transportation and procurement personnel. This group is tasked with recommending energy savings goals and the prevention of pollution for the Laboratory. These recommendations are tracked in the Laboratory's database (Ames Laboratory Corrective Action Tracking System – ALCATS). Energy usage was determined to be the significant aspect (largest impact on the environment) for the Laboratory. The Laboratory has taken measures (i.e. facility upgrades, education, reduced lighting at off peak hours) and continues to look at other areas of energy conservation. The Group has also been instrumental in developing new training aids to promote and maintain the Laboratory's EMS.

4.2 Pollution Awareness, Waste Minimization and Recycling Programs

Ames Laboratory's waste minimization plan was implemented in 1990. The plan was updated in 2003. The plan conforms to Executive Order 13101. Elements of the plan include:

- A statement of management support and commitment.
- A waste minimization policy for the Laboratory.
- Goals.
- Waste minimization and recycling activities.
- Employee awareness.
- Affirmative procurement program.

The Laboratory was engaged in waste minimization activities in 2006. These activities helped reduce the quantities of non-hazardous and hazardous wastes generated by the Laboratory. Examples include:

- Steel recycling.
- White paper and computer paper are recycled.
- Styrofoam peanut recycling.
- Chemical surplus redistribution.
- Telephone book recycling.
- Fluorescent bulb recycling.
- CRT recycling.
- Battery recycling.

All other non-hazardous waste generated by the Laboratory (e.g. cardboard, garbage, trash) was collected and transported to the City of Ames' Resource Recovery Plant for processing. Combustible waste is used as fuel in the city's electrical utility power plant. Scrap metal from uncontrolled areas is sent offsite for recycling. Ames Laboratory's Facility Services Group recovers R-12 refrigerants, except from vehicles, and R-22 refrigerants for recycling. Recovery equipment is registered with EPA Region VII under Number 608. Freon is recycled through the Laboratory's waste disposal vendor.

4.3 Performance Measures

For calendar year 2006, Ames Laboratory reported to DOE-AMSO through the Laboratory's Performance Evaluation and Measurement Plan on its affirmative procurement performance within a measure entitled, "provide Efficient and Effective Waste Management, Minimization and Pollution Prevention". The Laboratory strives to purchase EPA-designated items to the maximum extent practicable, and achieved a "B+" rating for its performance.

5.0 ENVIRONMENTAL RADIOLOGICAL PROGRAM

5.1 DOE Order 5400.5, "Radiation Protection of the Public and the Environment"

Ames Laboratory has prepared guidance documents, which are based on the environmental radiation release criteria specified in DOE Order 5400.5. There were no detectable or reportable radiological releases to the environment in 2006 (See U.S. Department of Energy Air Emissions Annual Report, Calendar Year 2006 in Appendix B).

5.2 DOE Order 435.1, "Radioactive Waste Management"

The majority of the Laboratory's radioactive waste is generated through renovation activities that occur in DOE buildings. These buildings were contaminated by past activities. All waste generated is low-level waste. The Laboratory has written procedures to manage these radioactive materials.

5.3 Property Release

In accordance with the Secretary of Energy's memorandum, dated July 13, 2000, which suspended the unrestricted release for recycling of metal from radiological areas, as defined by 10 CFR 835.2, within DOE facilities, the Laboratory will either stock pile metals that could be recycled and wait for further guidance or dispose as radioactive waste, or release the item if it can be safely used for its originally intended purpose.

5.4 Radiation Emissions and Doses

There were no point source releases from the Ames Laboratory complex in 2006. Diffuse source emissions were limited to low-level waste activities and renovation activities. Emissions from these activities were minimized or eliminated by engineering devices/structures, when necessary (e.g. containment cells with HEPA filtration).

Using the guidance in 40 CFR 61.94, the annual radionuclide NESHAPS report was prepared. According to the guidance, and based on the isotope inventory in curies per year used at the Laboratory, air emissions were not required to be monitored. IDNR and IDPH do not require permits or monitoring for laboratory fume hoods under Chapter 20 IAC 567 22.1(2) (1). However, Appendix D to 40 CFR Part 61 does provide a method for estimating the radionuclide emissions for a year, for reporting purposes, based on the amount of radionuclides in curies used at a facility. The required parameters were used to calculate potential dose equivalent to the public due to estimated radionuclide emissions from the Laboratory (See correspondences in APPENDIX B).

5.5 Unplanned Releases

There were no unplanned or accidental radiological releases from Ames Laboratory in 2006.

5.6 Environmental Monitoring

Liquid aqueous waste (laundry machine water), is no longer generated at the Waste Handling Facility (WHF). The WHF was demolished in 2006. The WHF was located one mile northwest of ISU's main campus near the Applied Science Complex (ASC).

Ames Laboratory performed no sampling of storm or sanitary sewer water in 2005. The City of Ames samples twice each year and ISU (permittee) samples quarterly. The Chemical Disposal Site ground water was sampled. Section 7.0 discusses groundwater.

5.7 Areas of Concern

Ames Laboratory, DOE, and ISU have addressed all known contaminated sites in or near the City of Ames. There are no known areas of concern.

5.7.1 Chemical Disposal Site (CDS)

The Chemical Disposal Site (CDS) was located north of Ontario Street on Scholl Road, east of Iowa State University's Applied Sciences Complex in Ames, Iowa. A chain-link fence surrounds the approximately 80,000 square feet site. The site and the surrounding area are owned by ISU.

The site was used by Ames Laboratory for the disposal of radioactive materials and hazardous chemicals from 1957 to 1966. Nine unlined pits, used to bury radiological and chemical waste contained in steel pails, drums, and plywood boxes, were located at the southeast corner of the CDS's fenced area.

DOE remediated the CDS in 1994, and ISU completed characterization in 1998. Based on the characterization report, the Iowa Department of Public Health released the CDS for unrestricted future use in October 1998 (See Appendix A, Letter to Iowa State University from IDPH, October 15, 1998).

In April, 1999, the license agreement between the Department of Energy and Iowa State University was allowed to expire. ISU accepted responsibility for closure of the well and restoration activities associated with the well closure.

In June 1999, Iowa State University received a U.S. Department of Energy Notice of Financial Assistance Award for the Ames Laboratory Chemical Disposal Site: Ground Water Monitoring Project. Groundwater Sampling was scheduled to be performed on an annual basis until 2002. ISU continued to perform additional sampling at the CDS since 2002.

Data (past six years) from Table 5.7-1 indicates there is no threat to Squaw Creek or the public water supply. ISU will continue to monitor four wells for an indefinite period of time. All other wells have been abandoned (See correspondences in APPENDIX A.)

Table 5.7-1

Chemical Disposal Site Groundwater Analysis

Gross Alpha

Gross Beta

Well	Location	Gross Alpha						Gross Beta					
		April 01	May 02	June 03	Aug 04	Aug 05	Sept 06	April 01	May 02	June 03	Aug 04	Aug 05	Sept 06
4A	Background Well	3.5	<6.0	< 2.40	< 4.53	< 6.13	< 4.06	< 3.0	< 3.0	5.80	6.01	< 4.95	6.36
4B	Background Well	< 3.0	<5.0	< 2.55	< 4.24	< 5.38	< 4.14	5.6	18.0	4.18	5.21	6.28	4.76
Davidson Hall	Background Well	< 4.0	<7.0	-	-	-		< 4.0	< 4.0	-	-	-	
Lynch Farm	Background Well	< 4.0	7.8	-	-	-		13.0	20.0	-	-	-	
Beef Nutrition	Background Well	< 4.0	<7.0	< 3.68	-	-		6.2	9.8	9.62		-	
Skunk	Surface Water	-	<6.0	-	-	-		-	7.6	-	-	-	
Squaw Creek	Surface Water	4.0	-	< 2.97	-	-		4.1	-	6.39	-	-	
SW 1	Surface Water	< 6.0	-	< 2.99	-	-		6.1	-	13.0	-	-	
SW 2	Surface Water	< 4.0	-	< 2.43	-	-		11.0	-	12.7	-	-	
SW 3	Surface Water	< 5.0	<9.0	< 4.06	-	-		5.5	7.1	9.25	-	-	
8A	Site Well	< 3.0	< 7.0	< 2.65	< 4.50	< 6.73	< 5.62	6.3	6.3	6.76	7.43	4.57	8.68
8B	Site Well	< 4.0	< 8.0	< 4.32	< 5.66	< 7.12	< 5.57	4.4	7.9	6.19	4.99	4.41	5.86
7A	Site Well	17.0	< 10	< 3.63	-	-		4.9	18	7.61	-	-	
7B	Site Well	< 10.0	< 10	< 11.9	-	-		14.0	30	11.8	-	-	
10A	Site Well	110	710	91.90	-	-		140	700	153	-	-	
10A FD	Site Well	260	520	229	-	-		260	680	394	-	-	
10B	Site Well	1000	520	78.1	-	-		500	710	179	-	-	
11A	Site Well	710	-	47.8	-	-		900	-	98.6	-	-	
11B	Site Well	< 6.0	< 9.0	< 5.67	-	-		8.0	12.0	9.26	-	-	

Results are in pCi/L.

5.7.2 Inactive Waste Sites (IWS)

The regulators have released a total of 12 IWS's (See Correspondence in Appendix C). The status of the sites released follows.

<u>Site</u>	<u>Release Status</u>	<u>Date Released</u>
Old Sewage Plant	Unrestricted use	1995
Grand Avenue Underpass	Unrestricted use	1996
Ames Municipal Cemetery	Unrestricted use	1996
Applied Sciences Complex	Unrestricted use	1996
Block House	Unrestricted use	1996
Little Ankeny Debris	Unrestricted use	1996
Annex I	Approved for current use	1996
Annex II	Approved for current use	1996
Ames Municipal Airport	Approved for current use	1996
Chemical Disposal Site	Unrestricted use	1998
Former Iowa State College Dump Site	Unrestricted use	2001
Fire Service Institute Training Area	Unrestricted use	2002

5.7.3 Former Iowa State College Dump Site

Another area of concern was a five-acre tract at 13th Street and Stange Road in Ames. It has since been released. Manhattan Project and Ames Laboratory wastes were disposed there in the early 1940's. In 1946, 250 tons of uranium extraction wastes were removed from the site for processing.

It was determined the radiological waste portion of the site would be sampled to determine if it posed a threat to human health or the environment. Sampling was conducted in August 1995. The samples were below action levels for thorium, uranium and their decay products, indicating no threat to human health or the environment. DOE sent results to IDPH in September 1995, indicating that DOE considered the radiological investigation closed. IDPH determined the site met the radiological standard for unrestricted use (See September 17, 2001 correspondence in Appendix C).

5.7.4 Fire Service Institute Training Area

This site is on the ISU campus, and under ISU control and responsibility. It is on the northeast corner of the intersection of Haber Road and the Chicago Northwestern Railroad ISU conducted a radiological survey of the site in April 1995 and found seven small areas of activity above background levels. The University fenced those areas to minimize human contact. Soil samples collected in July and October 1995 detected some thorium contamination. The sample ranged from 14.9 to 662.9 pCi/g Th-232. Limited non-radiological sampling was also conducted. The samples were analyzed for TCLP metals, volatiles and pesticides. The results were within the regulatory limits. ISU issued a summary of their site sampling activities on November 22, 1996.

Chase Environmental Group (CEG), Inc, under contract with ISU, conducted radiological surveys and soil sampling on November 6-11, 1997. The survey was performed to determine the radionuclides involved, and to determine the depth of contamination. The Survey Report was published May 7, 1998. CEG finished remediation activities in August 1999. The site met clean-up standards set by the Iowa Department of Public Health (IDPH). As a result of the remedial activity, 250 B-25 boxes representing approximately 24,000 cubic feet of thorium-contaminated soil was generated. In December of 2000, 225 B-25 boxes were shipped to Texas Ecologist, Inc. in Robstown, Texas, for disposal. The waste was shipped as non-hazardous industrial waste (soil contained less than 51pCi/gm thorium). The remaining boxes (25) were shipped off site in December 2002 to Envirocare of Utah. On February 26, 2002 the IDPH concurred with ISU that the site met the standards for “unrestricted” use (See Appendix C). Because some of the thorium contamination could have come from Atomic Energy Commissions activities at Ames Laboratory, DOE issued a grant to ISU for \$350,000 in September 2000 for the clean up and disposal of contaminated soil from the Fire Service Institute Training Area.

5.7.5 Waste Handling Facility (WHF)

The WHF was located one mile northwest of ISU's main campus near the Applied Sciences Complex (ASC). The WHF was originally built to process waste from the Laboratory's research reactor. The reactor was decommissioned in 1978. Since that time the WHF was used to store and process radiological contaminated material for disposal. Maintaining the WHF and the energy usage required to heat and cool the building was a cost burden. Therefore, the WHF was demolished in February 2006. All identified contaminants were removed prior to the demolition, according to all applicable state/federal regulations and DOE guidelines.

6.0 ENVIRONMENTAL NON-RADIOLOGICAL PROGRAM

6.1 Emissions Monitoring

The Laboratory has two air permits that require mass balance monitoring. An annual log is required for each air permit. The log is monitored and reviewed to verify the Laboratory is not exceeding its permitted limits.

The Laboratory does not perform any other non-radiological monitoring (i.e. air, water or soil sampling).

7.0 GROUNDWATER MONITORING AND PROTECTION

The Laboratory does not routinely monitor groundwater. As the land owner, ISU monitors the former Chemical Disposal Site as part of an agreement with the Iowa Department of Public Health (See section 5.7.1). There are no current Ames Laboratory activities that pose a hazard to groundwater or surface water. The Laboratory has no underground storage tanks. Three DOE owned monitoring wells were abandoned June 2005.

Currently, Iowa State University is not required to monitor groundwater on the main campus.

The CDS was monitored as prescribed by the IDNR and IDPH. Only the CDS wells were sampled in 2006 (See table 5-7.1).

8.0 QUALITY ASSURANCE PROGRAMS

Radioactive sources and solutions that are used for calibration of radiation-detection instrumentation are obtained with quantitative calibration directly traceable to the National Institute of Standards and Technology. Ames Laboratory's quality assurance effort relied on established U.S. EPA, IDNR, IDPH, and DOE regulations, standards and methods. This applies to both radioactive and non-radioactive environmental sampling and analyses.

Ames Laboratory's air quality assurance procedure consists of maintaining an exhaust hood inventory, maintaining a radiological material balance, tracking chemicals, and waste collection and management. These measures determine if the Laboratory has a source in need of monitoring or permitting, in accordance with IDNR guidance. The Laboratory used the COMPLY modeling program to produce the annual NESHAP report (See Appendix B).

In 2006, the Laboratory followed its Readiness Review (RR) Procedure for new or significantly modified research activities. This procedure is for risk identification, categorization, and ES&H review of activities. Another purpose of the RR is to prevent and/or control releases of hazardous materials to the environment. It was developed to ensure that an appropriate level of rigor, commensurate to the risk associated with an activity's hazards, is applied to the activity's ES&H review. Fifty two readiness reviews were approved in 2006. Approved activities are reviewed every five years.

Line management directs Laboratory Group/Section leaders to be responsible for assuring that measuring and test equipment is of proper type, accuracy, and tolerance to accomplish the specified requirements.

9.0 REFERENCES

1. Ames City Manager's Office, demographic information.
2. Ames Laboratory Site Environmental Reports.
3. City of Ames and ISU Pretreatment Agreements #3593-3 and #4093-3.
4. DOE Order 231.1, "Environment, Safety and Health Reporting."
5. DOE Order 5400.5, "Radiation Protection of the Public and the Environment."
6. DOE Order 474.1A, "Control and Accountability of Nuclear Materials."
7. Executive Order 13148, "Greening the Government Through Leadership in Environmental Management."
8. Executive Order 13101, "Federal Acquisition, Recycling and Waste Prevention."
9. Characterization Report for the Ames Laboratory Chemical Disposal Site, Iowa State University, September 1998.
10. IATA Dangerous Goods Regulations
11. Iowa Administration Code, Rule 567, Chapters 20-24 and 28, "Air Quality."
12. Iowa Administration Code, Rule 567, Chapter 60, "Wastewater Treatment and Disposal: Definitions, Rules of Practice."
13. Iowa Administration Code, Rule 567, Chapter 61, "Water Quality Standards."
14. Iowa Administration Code, Rule 567, Chapter 100, 101, 109, 118, 119, "Solid Waste Management and Disposal."
15. Iowa Administration Code, Rule 567, Chapter 131, "Notification of Hazardous Conditions."
16. Iowa Administration Code, Rule 567, Chapter 133, "Determining Cleanup Actions and Responsible Parties."
17. Iowa Administration Code, Rule 567, Chapter 140 and 141, "Hazardous Waste."
18. 10 CFR Part 1021, "National Environmental Policy Act Implementation Procedures."
19. 10 CFR Part 835, "Occupational Radiation Protection."
20. 29 CFR Part 1910.120, "Hazardous Waste Operations and Emergency Response."

21. 40 CFR Part 63, "National Emission Standards for Hazardous Air Pollutants for Source Categories."
22. 40 CFR Part 82, "Protection of Stratospheric Ozone."
23. 40 CFR Part 112, "Oil Prevention; Spill Prevention, Controls and Countermeasures."
24. 40 CFR Part 131, "Water Quality Standards."
25. 40 CFR Part 141, "National Primary Drinking Water Regulations."
26. 40 CFR Parts 260-264 (subpart S), 265 and 268, "Hazardous Waste Implementing Rules."
27. 40 CFR Part 279, "Standards for the Management of Used Oil."
28. 40 CFR Part 300, "National Oil and Hazardous Substances Pollution Contingency Plan."
29. 40 CFR Part 302, "Designation, Reportable Quantities and Notification."
30. 40 CFR Part 355, "Emergency Planning and Notification."
31. 40 CFR Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing Distribution in Commerce, and Use Prohibitions."
32. Consent Agreement and Consent Order, executed February 27th, 1996.

10.0 LIST OF ACRONYMS

ASC: Applied Sciences Complex of Iowa State University.

ALCATs: Ames Laboratory Corrective Action Tracking System.

AMSO: Ames Site Office

Bq: Becquerel, one disintegration per second.

CAA: Clean Air Act and Amendments.

CAG: Community Advisory Group for Ames Laboratory environmental activities.

CDS: Chemical Disposal Site

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act.

CESQG: conditionally exempt small quantity generator.

CFR: Code of Federal Regulations.

CG: concentration guide, DOE derived.

CH: Chicago Operations Office of the U.S. Department of Energy.

Ci: Curie, 3.7E10 disintegration's per second.

CWA: Clean Water Act.

CX: categorical exclusion, a class of activities determined to have no environmental impact.

DOE: U.S. Department of Energy.

EA: environmental assessment.

EIS: environmental impact statement.

EMR: environmental management review.

EMS: environmental management system.

EPA: U.S. Environmental Protection Agency.

EPCRA: Emergency Planning and Community Right to Know Act.

ESA: Endangered Species Act.

ESH&A: Environment, Safety, Health and Assurance office of Ames Laboratory.

FFCA: Federal Facilities Compliance Act.

FIFRA: Federal Insecticide, Fungicide and Rodenticide Act.

FS: feasibility study.

FSP: field sampling plan.

GOCO: a government owned, contractor operated facility.

HEPA: high efficiency particulate air, a filter element or filtration system.

HQ: Headquarters of U.S. Department of Energy.

IAC: Iowa Administration Code.

IDNR: Iowa Department of Natural Resources.

IDPH: Iowa Department of Public Health.

IPRT: Institute for Physical Research and Technology, ISU.

ISMS: Integrated Safety Management System.

ISU: Iowa State University.

IWS: inactive waste site.

LDR: land disposal restriction.

LQG: large quantity generator.

MCL: maximum contaminant level.

mg/L: milligrams per liter; equivalent to ppm.

mrem: millirem.

MS4s: Municipal Separate Storm Sewer Systems

mSv: millisievert, 10^{-3} Sieverts.

NEPA: National Environmental Policy Act.

NESHAP: National Emission Standards for Hazardous Air Pollutants.

NHPA: National Historic Preservation Act.

NOV: notice of violation.

NPDES: National Pollutant Discharge Elimination System.

NRC: Nuclear Regulatory Commission.

ODS: ozone depleting substance.

PCB: polychlorinated biphenyls.

pCi: picocurie, 10^{-12} Curies.

PIDS: performance indicator database system.

QA: quality assurance.

QAP: Quality Assessment Program, DOE.

RCRA: Resource Conservation Recovery Act.

Rem: Roentgen equivalent man, radiation dose.

RESRAD: residual radiation model for sites.

RI: remedial investigation.

RPP: Radiological Protection Plan, for Ames Laboratory.

SARA: Superfund Amendments and Reauthorization Act.

SDWA: Safe Drinking Water Act.

SER: Site Environmental Report.

TASF: Technical and Administrative Support Facility, the Ames Laboratory office building.

TCLP: Toxicity Characteristic Leaching Procedure

TPQ: threshold-planning quantity.

TRU: transuranic waste.

TSCA: Toxic Substances Control Act.

WAS: work authorization system of Ames Laboratory.

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APPENDIX A

Chemical Disposal Site (CDS) Correspondences

- 1) Letter to IDPH requesting release of the CDS, September 30, 1998.
- 2) Letter from IDPH granting “unrestricted” release of the CDS, October 15, 1998.
- 3) Letter from IDPH to Edward J. Stanek, II, Ph.D., status of CDS, October 16, 1998.
- 4) Letter from ISU to DOE-Ames Group, October 22, 1998.

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Environmental Health and Safety
118 Agronomy Lab
Ames, Iowa 50011-3200
515 294-5359
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September 30, 1998

Mr. Donald A. Flater
Chief, Bureau of Radiological Health
Iowa Department of Public Health
Lucas State Office Building
Des Moines, IA 50319-0075

Dear Mr. Flater:

Enclosed are 3 copies of the "Characterization Report for the Ames Laboratory Chemical Disposal Site - Iowa State University", dated September, 1998. This report reflects the latest work at the Chemical Disposal Site (CDS) which evolved from our meeting with IDPH on August 28, 1998. At that meeting we made the decision to remove any remaining surface soil radiation levels that were more than twice background. That work was accomplished and the affected areas were resurveyed on 9-1-98 to confirm that they were at background levels (IDPH personnel were present for the survey).

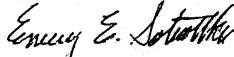
As a result of the above efforts, we believe the CDS site now meets the criteria for unrestricted release. Moreover, the Jones/McMahon study of groundwater movement at the CDS has been released, and confirms the assessment that the underground water plume has reached a steady state at the site. The down-gradient concentrations are expected to decrease over the coming years with the judgement that there is no potential threat to either Squaw Creek or the public water supply.

Therefore, after IDPH review of the enclosed report, Iowa State University is requesting consideration of the following action:

1. Release of the CDS on an unrestricted basis.
2. Reduce the groundwater sampling frequency to once per year for the remainder of the 5 year schedule.
3. Allow closure of monitoring wells MW-9A and MW-9B because of their deteriorating condition. (This has already been verbally granted by IDPH but we would appreciate having this in writing).

We appreciate the assistance and cooperation of the IDPH on the CDS project and look forward to a successful completion. We have enclosed enough copies of the "CDS Characterization Report" so you can provide them to the EPA offices involved in this project. When we hear back from the IDPH, we will provide appropriate copies to the Ames Lab, DOE and IDNR.

Sincerely,


Emery E. Sobottka
Director

enclosure

cc Warren Madden
Paul Tanaka

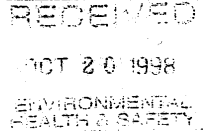


TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

October 15, 1998

Emery Sobottka
Iowa State University
118 Agronomy Laboratory
Ames, Iowa 50011-3200



Dear Mr. Sobottka:

This correspondence refers to the "Characterization Report for the Ames Laboratory Chemical Disposal Site—Iowa State University." You submitted that report to us under cover of your letter dated September 30, 1998.

We have read and reviewed the report and analyzed the data. We agree with your conclusions and recommendations.

The site, known as the Ames Laboratory Chemical Disposal Site, meets the standards for unrestricted use. Additionally, we concur with your recommendation that the groundwater sampling frequency be reduced to annual. This sampling will continue until 2002.

If you have any questions or comments, please call Dan McGhee or me at (515)281-7007.

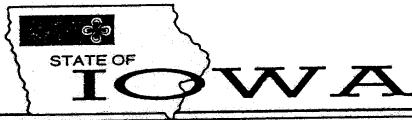
Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health

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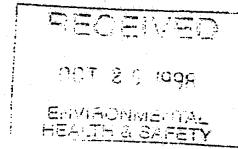


TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

October 16, 1998

Edward J. Stanek, II, Ph.D.
2015 Grand Avenue
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Dear Dr. Stanek:

This correspondence refers to the chemical Disposal Site (CDS) in Ames, Iowa. This area had been used as a disposal site by Ames Laboratory, a contractor for the U.S. Department of Energy (DOE). As you know, the DOE remediated this site in 1994. They then published the results and made recommendations for the future use of the land.

The Iowa Code designates the Iowa Dept. of Public Health (IDPH) as the state's radiation control agency. Additionally, Iowa State University (ISU) holds an Iowa Radioactive Materials license. As a result, IDPH became involved, as an overseeing agency, with the CDS project in 1994.

In August 1996, and again in December 1997, IDPH went on record with DOE saying that it could neither agree with nor concur in the data or the recommendations as presented. Our stance was that a complete characterization of the CDS had not been conducted and that, therefore, the conclusions came from data that had no statistical relevance.

In the spring of 1997 ISU initiated a complete characterization study of the CDS. We have kept you apprised of the progress of that project.

On Friday, October 9, 1998, ISU submitted its final report. In that report, ISU concludes that the CDS meets the standards for unrestricted use and recommends that annual samples from the groundwater monitoring wells be continued, on an annual basis, until 2002 to confirm the results of the study. The U.S. Environmental Protection Agency accepts this monitoring regimen.

We have reviewed the ISU data and report. We agree with the conclusions and the recommendations. We have issued a letter to ISU stating that the CDS meets the standards for unrestricted use. That letter will also contain our concurrence to reduce the groundwater monitoring frequency to annually and to continue this monitoring until 2002.

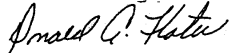
LUCAS STATE OFFICE BUILDING / 321 E. 12TH ST. / DES MOINES, IOWA 50319-0075
DEAF RELAY (HEARING OR SPEECH IMPAIRED) 1-800-735-2942 / INTERNET: [HTTP://IDPH.STATE.IA.US/](http://idph.state.ia.us/)

FAMILY & COMM. HEALTH	HEALTH PROTECTION	PLANNING & ADMINISTRATION	SUBSTANCE ABUSE & HEALTH PROMOTION	DIRECTOR'S OFFICE
			515-281-3641	515-281-5604

Page 2
Stanek, Edward
October 16, 1998

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,



Donald A. Flater, Chief
Bureau of Radiological Health
515-281-3478
515-242-6284 – FAX
dflater@idph.state.ia.us

DAF/ir

cc: Emery Sobottka, ISU
Joe Obr, IDNR

J:\ram\chemdisp\stanekfinal.doc

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Environmental Health and Safety
118 Agronomy Lab
Ames, Iowa 50011-3200
515 294-5359
FAX 515 294-9357

October 22, 1998

Mr. James Buchar
Ames Group
Department of Energy
Chicago Operations Office
9800 South Cass Ave
Argonne, IL 60439

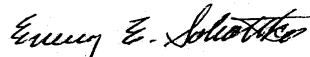
Dear Mr. Buchar:

The additional sampling and testing that we have been conducting at the Ames Laboratory Chemical Disposal Site (CDS) has culminated in the Iowa Department of Public Health (IDPH) granting ISU unconditional release of the CDS site. In addition, the IDPH has also granted our request to reduce groundwater well water sampling frequency from one per quarter to once per year for the remainder of the sampling period (until year 2002). Enclosed are documents which describe CDS activities:

1. The final Characterization Report for the CDS.
2. A letter from ISU to IDPH (dated September 30, 1998) which requests unrestricted closure and reduces groundwater sampling frequency at the CDS.
3. Two letters from IDPH (dated October 15, 1998 and October 16, 1998) which grant ISU unrestricted release of the CDS and reduced groundwater sampling at the CDS until the year 2002.

After you have had the opportunity to review these documents I would like to continue our discussion about coordinating a joint press release. A lot of people, departments, state and federal agencies, etc., have had a hand in completing this successful project and we may want to consider some recognition of that fact.

Sincerely,



Emery E. Sobottka
Director

enclosure

cc Tom Barton, Ames Lab
Tom Wessels, Ames Lab
Joe Obr, IDNR
Warren Madden (#3 enclosure only)
Paul Tanaka (#3 enclosure only)

OCT 22 1998

APPENDIX B

Air Permit Correspondences

- 1) Letter from IDNR exempting laboratory fume hoods from permitting, July 18, 1994.
- 2) Letter from Jacobs Engineering Group Inc. exempting graphics paint spray booth from permitting, July 16, 1997.
- 3) Letter from IDNR exempting graphite lathe hood exhaust from permitting, February 6, 1998.
- 4) U.S. Department of Energy Air Emissions Annual Report, Calendar Year 2006.



TERRY E. BRANSTAD, GOVERNOR

COPY

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

July 18, 1994 :

CERTIFIED

Ms. Lowell K. Mathison:
Environment, Safety & Health Group
Ames laboratory
Iowa State University
115 Spedding
Ames, IA 50011

Dear Mr. Mathison,

This letter is to inform you that the 144 chemical fume hoods and associated 34 exhaust points described in your letters dated April 14th and June 28th of 1994 are exempted from both air construction permit and Title V permitting provisions.

If you have any questions regarding the above, please call me at (515) 281-8852.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Hamlin".

Peter Hamlin, chief
Air Quality Bureau



JACOBS ENGINEERING GROUP INC.

8208 MELROSE DRIVE, SUITE 210, LENEXA, KANSAS 66214
TELEPHONE (913) 492-9218 • FAX (913) 492-6198

July 16, 1997

Mr. Walter P. Waters
Iowa State University
Ames Laboratory
G40 TASF
Ames, IA 50011

Mr. Waters,

Jacobs Engineering has been contracted by the Iowa Department of Natural Resources to review Iowa State University's application for an air construction permit for a paint spray booth (S23). The project number assigned is 96-456.

According to 567 Iowa Administrative Code (IAC) 22.8(1)c, the paint spray booth is exempt from the permitting process if more than one gallon per day but less than three gallons per day of spray material is sprayed. The emissions must be vented through a stack that is at least 22 feet tall and daily records of the material sprayed must be kept for eighteen (18) months from the date to which the records apply. In order formally be exempt from the permitting process, a written statement must be submitted according to 567 IAC 22.8(1)e which reads:

"I certify that all paint booths at the facility and listed below are in compliance with all applicable requirements of rule 567 IAC 22.8(1). I understand this equipment shall be deemed permitted under the terms of 567 IAC 22.8(1) only if all applicable requirements of 567 IAC 22.8(1) are met. This certification is based on information and belief formed after reasonable inquiry; the statements and information in the document are true, accurate, and complete."

This certification must be signed by, for municipal, state, county, or other public facilities, the principal executive officer or the ranking elected official.

This certification must be submitted to:

Mr. Pete Hamlin, Air Quality Chief
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Urbandale, IA 50322

Sincerely,

Barbara Seufferling
Jacobs Engineering Group, Inc.



COPY

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

CERTIFIED MAIL

February 6, 1998

ATTN: Walter P. Waters
Ames Laboratory
Iowa State University
Ames, Iowa 50011-3020

RE: Construction permit exemption request for graphite lathe hood exhaust
Facility No. 85-01-057

Dear Mr. Waters:

Your request for a construction permit exemption for the above referenced source has been received. Based on the information you have provided your request has been approved. You should be aware that any exemption you qualify for does not establish any federally enforceable emission limits. This means that when determining applicability for the various programs you may be subject to, our bureau would assume the maximum potential emissions from this source.

If you have any questions, you may contact me at the address or telephone numbers listed below.

Sincerely,

Clark W. Ott
Environmental Specialist - Compliance Assistance Section
Air Quality Bureau
515-281-4899

cc: FO5, w/ attachments

ames lab.doc

7900 HICKMAN ROAD, SUITE 1 / URBANDALE, IOWA 50322 / 515-242-5100 / FAX 515-242-5094

**U.S. Department of Energy
Air Emissions Annual Report
Calendar Year 2006**

SECTION I

Facility Information

Site Name: Ames Laboratory, Iowa State University

Operations Office: Chicago Operations

Address: 9800 South Cass Avenue
Argonne, IL 60439

Contact: Mike Saar Phone: 630-252-2245

Site Operator: Iowa State University

Site Address: G40 TASF, Iowa State University
Ames, IA 50011

Contact: Dan Kayser Phone: (515) 294-2153

Site Description:

The Ames Laboratory is located on the campus of Iowa State University (ISU) in Ames, Iowa. The Ames Laboratory was operated by ISU for the DOE under contract No. W-7405-ENG-82 in 2006. There are nine buildings owned by the DOE. The Ames Laboratory conducts basic and intermediate applied research in physical, mathematical, and engineering sciences that underlie energy technologies and other areas of national importance.

SECTION II

Methods for Dose Assessment/Air Emissions Data

Methods used for evaluating doses from the air emissions.

Very small amounts of radionuclides were used in CY 2006. Radionuclides were used in solution (reference standards) or in solid form (sealed sources); consequently there were no radioactive air emissions and no exposures to the general public.

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. (See, 18 U.S.C. 1001).

Name: Dr. Tom Barton

Title: Director, Ames Laboratory

Signature: 

Date: 2/6/7

APPENDIX C

Inactive Waste Sites Correspondences

- 1) Letter from IDPH, Closure of nine waste sites, January 11, 1996.
- 2) Letter from DOE-CH, Regarding the Iowa State College Dump Site, April 20, 1999.
- 3) Letter from IDPH, Closure of the Former Iowa State College Dump Site, September 17, 2001.
- 4) Letter from IDPH, Closure of the Fire Service Institute Training Area, February 26, 2002.



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

January 11, 1996

Warren R. Madden
Vice President for Business and Finance
Iowa State University
125 Beardshear Hall
Ames, Iowa 50011-2038

Dear Mr. Madden:

Reference is made to your letter of January 5, 1996 in which you request our concurrence on the status of nine inactive waste sites which we possibly contaminated with radioactive materials as a result of the operation of Ames Laboratory as a DOE contractor in the past. Listed below are the sites by name and our conclusions as to the status of the site regarding closure.

1. Ames Old Waste Water Treatment Facility (WWTF): Met criteria for unrestricted use per Department letters to the city of Ames dated June 16, 1994 and February 17, 1995.
2. Grand Avenue Under Pass: Based on the data provided by DOE, ISU and data collected by this Department this area meets the criteria for unrestricted use. In fact, there is information which indicates that this area never was subjected to the spreading of contaminated sludge from the WWTF.
3. Ames Municipal Cemetery: Based on the data provided by DOE, ISU and data collected by this Department this area meets the criteria for unrestricted use. In fact, there is information which indicates that this area never was subjected to the spreading of contaminated sludge from the WWTF.
4. Applied Science Center: Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.
5. Block House Area : Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.
6. Little Ankeny Debris Site: Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.
7. Annex I: Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.
8. Annex II: : Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.

LUCAS STATE OFFICE BUILDING / DES MOINES, IOWA 50319-0075 / 515-281-5787
FAX # (515) 281-4958 / TDD-DEAF SERVICES #(515) 242-6156

Page 2
Madden, Warren R.
January 11, 1996

9. Ames Municipal Airport: Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.

Based on the above, it is my opinion that we concur with the University's decision to bring the nine sites to closure with the special provisions placed on Annex I, II and the Airport. I would like to take this opportunity to thank you, the ISU Staff and the Ames Laboratory Staff who have assisted in working through the long laborious process of reading the conclusions. We certainly look forward to working with all of you in the future. If you have question regarding the above, please do not hesitate to contact me.

Sincerely,



Donald A. Flater, Chief
Bureau of Radiological Health
(515) 281-3478

cc: E. Sobottka, ISU
Tom Newman, City of Ames
Dr. Tom Barton, Ames Laboratory

j:\rad-admin\madden.doc



Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

April 20, 1999

Dr. Aniefiok D. Inyang, Director
Environmental Health and Safety
118 Agronomy Laboratory
Iowa State University
Ames, Iowa 50011-3200

Dear Dr. Inyang:

SUBJECT: IOWA STATE COLLEGE DUMP SITE

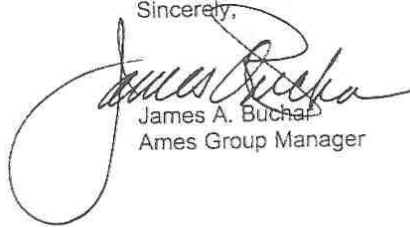
References: 1. Letter, Taboas to Sobottka, dated January 30, 1996
2. Letter, Sobottka to Taboas, dated February 28, 1996

It has recently been brought to my attention that an old issue remains open relative to the Iowa State's College Dump Site. As I can best determine the issue arose when the Department of Energy (DOE) in reviewing the University's "Review and Assessment of the Former Iowa State College Dump Site" report provided some comments (Reference 1) for the University's consideration. As indicated in Reference 2, the University adopted most of the suggested changes. However, one statement as made regarding the availability of information about the disposal of beakers and containers at the site, which raised a concern with your predecessor. As can be seen from Reference 2, Mr. Sobottka was not aware of and did not have any evidence of anything other than uranium being disposed of at the site. Mr. Sobottka's letter requested that DOE make available any information we may have as to the origin or type of materials disposed of at the site and how we became aware of this information.

In trying to respond to this open issue, we have conducted a review internally of the statement previously made in our Reference 1 letter and we are not able to provide any documentation as requested. Our statement at the time was based on informal discussion with an Ames Laboratory employee (now retired) and a cursory review, over time, of some College Dump Site related documents, none of which were ever in our possession.

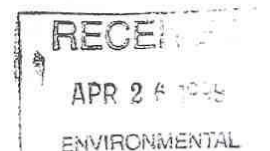
It is our position that without having any specific knowledge or records, other than as mentioned above, relative to the College Dump Site, we withdraw the comment in question and recommend that the report be finalized and the issue closed.

Sincerely,



James A. Buchan
Ames Group Manager

Enclosures:
Reference Letters





STATE OF IOWA

THOMAS J. VILSACK
GOVERNOR

SALLY J. PEDERSON
LT. GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
STEPHEN C. GLEASON, D.O., DIRECTOR

September 17, 2001

David Inyang, Ph.D., RSO
Iowa State University
118 Agronomy Lab.
Ames, Iowa 50011

Dear Dr. Inyang:

This correspondence refers to your letter to me dated August 22, 2001. In that letter you enclosed a report entitled, "Review and Assessment of the Former Iowa State College Dump Site." This report detailed the actions taken to assess the radiological hazard at that site. Your letter requested that we review and comment on the report.

The report references and analyzes the results of soil sampling at the former dumpsite. We have reviewed this data and your conclusions. We agree that the data does show that the former Iowa State College Dump Site meets the standards for unrestricted use.

We wish to remind you that our conclusions speak only to radiological standards and do not address heavy metals or organic compounds.

If you have any questions, please contact Dan McGhee at 515-725-0305 or me.

Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health
(515) 281-3478

401 SW 7th STREET, SUITE D / DES MOINES, IOWA 50309-4611
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DIRECTOR'S OFFICE 515-281-5605 FAX/515-281-4958	EXECUTIVE STAFF 515-281-5604 FAX/515-281-4958	DIV. OF ADMINISTRATION & REGULATORY AFFAIRS 515-281-5784 FAX/515-281-4958	DIV. OF ENVIRONMENTAL HEALTH 515-281-5784 FAX/515-281-4958
DIV. OF FAMILY & COMMUNITY HEALTH 515-281-3931 FAX/515-242-6384	DIV. OF HEALTH PROMOTION, PREVENTION & ADDICTIVE BEHAVIORS 515-281-3641 FAX/515-281-4535	DIV. OF TOBACCO USE PREVENTION & CONTROL 515-281-6225 FAX/515-281-4535	



STATE OF IOWA

THOMAS J. VILSACK
GOVERNOR

SALLY J. PEDERSON
LT. GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
STEPHEN C. GLEASON, D.O., DIRECTOR

February 26, 2002

David Inyang, Ph.D.
Director, Environmental Health and Safety
Iowa State University
118 Agronomy Lab
Ames, Iowa 50011-3200

RE: Release of site for unrestricted use

Dear Dr. Inyang:

This correspondence refers to your letter, dated February 20, 2002, to me. In that letter you transmitted the "Final Status Survey Report for Fire Service Institute Training Area Iowa State University." You also requested "the site be released for unrestricted use."

We have reviewed the report and agree with your conclusion that the site meets the standards for unrestricted use. You may refer to these standards in the Iowa Administrative Code 641-40.29(136C). We cannot, however, "release" this site because it was never restricted. We reiterate, though, that the data demonstrates compliance with unrestricted use.

If you have any questions, please contact Dan McGhee at 515-725-0305 or me.

Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health
515-281-3478
515-725-0318 - FAX
dflater@idph.state.ia.us

DAF/rk

RELEASED
FEB 29 2002
DIV. OF ENVIRONMENTAL
HEALTH & SAFETY

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DIRECTOR'S OFFICE
515-281-5605
FAX/515-281-4958

DIV. OF ADMINISTRATION
515-281-5604
FAX/515-281-4958

DIV. OF COMMUNITY HEALTH
515-281-6535
FAX/515-242-6384

DIV. OF HEALTH PROTECTION & ENVIRONMENTAL HEALTH
515-281-7726
FAX/515-281-4529

DIV. OF HEALTH PROMOTION, PREVENTION & ADDICTIVE BEHAVIORS
515-281-3641
FAX/515-281-4535

DIV. OF TOBACCO USE PREVENTION & CONTROL
515-281-6225
FAX/515-281-6475

Bureau of Radiological Health 401 SW 7th Street, Suite D; Des Moines, IA 50309 Internet Address idph.state.ia.us/pa/rh.htm

APPENDIX D

EPA and DOE Correspondences

- 1) EPA letter (NOV's), April 6, 1999.
- 2) EPA e-mail status of CDS and WHF EPA ID Numbers, July 8, 2003.
- 3) DOE-AMSO memorandum approving Laboratory's EMS, December 21, 2005.
- 4) EPA letter (RCRA Inspection), April 27, 2006.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

APR 06 1999

CERTIFIED MAIL

Return Receipt Requested

Article Number: P 165 405 793

Dan Kayser, Environmental Specialist
Ames Laboratory
G40 TASF
Ames, IA 50011

Dear Mr. Kayser:

RE: Ames Laboratory #3
Ames, IA
RCRA I.D. No. IA6890008950

On January 19-20, 1999, a representative of the U. S. Environmental Protection Agency (EPA) inspected your facility. The inspection was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA). A copy of that inspection report is enclosed.

A Notice of Violation (NOV) was issued to your company during the inspection. I have reviewed your February 1, 1999, response to the NOV and determined that it adequately addresses the violations listed in the NOV. Therefore, no further submittals are required at this time. Please note that EPA reserves its right to pursue appropriate enforcement actions, including penalties, for violations discovered as a result of this inspection.

I would like to remind you that your facility is responsible for maintaining compliance with all applicable hazardous waste regulations. If there are any questions regarding this matter, please contact me at (913) 551-7136.

Sincerely,

Kendra Kennell
RCRA Enforcement and State Programs Branch
Air, RCRA, and Toxics Division

Enclosure

cc: Joseph Obr, Iowa Dept. of Natural Resources

APR 08 1999



Date: Tue, 08 Jul 2003 14:58:47 -0500
From: Urban.Trevor@epamail.epa.gov
Subject: Ames Laboratory
To: kayser@ameslab.gov
X-Mailer: Lotus Notes Release 5.0.9a January 7, 2002
X-MIMETrack: Serialize by Router on EPAHUB11/USEPA/US(Release 5.0.9a |January 7, 2002) at 07/08/2003 03:58:48 PM

I hope this takes care of the issue. Contact me at 913-551-7133 if you have any questions. Thanks for your patients.

----- Forwarded by Trevor Urban/ENSV/R7/USEPA/US on 07/08/03 02:56 PM

Colleen Thomas

To: Trevor

Urban/ENSV/R7/USEPA/US@EPA

07/01/03 04:07 PM cc:

Subject: Ames Laboratory

Trevor,

RCRAInfo is finally working. I made the changes to the Ames Laboratory sites and they are both marked as Non-Generators. Unfortunately, there's no good/easy way to mark a facility as Inactive in RCRAInfo, but at least they're in there as non-generators. If you need anything else done to these sites, let me know.

Colleen Thomas
Tri-Cor Industries, Inc.
@EPA Region VII
913/551-7182



Department of Energy

Ames Site Office
9800 South Cass Avenue
Argonne, Illinois 60439

DEC 21 2005

Dr. Raymond L. Orbach, Director
Office of Science
SC-1 FORS

SUBJECT: ENVIRONMENTAL MANAGEMENT SYSTEM IMPLEMENTATION

Pursuant to DOE O 450.1, "Environmental Protection Program", paragraph 5d.(1), I am submitting this memorandum to report that Ames Laboratory fully conforms to the Environmental Management System (EMS) requirements of DOE O 450.1.

This declaration is based on a second party assessment of the EMS. The assessment was conducted using the self-declaration procedure described in attachment 2 of DOE G 450.1A and was conducted as a component of implementing DOE O 226, "Implementation of Department of Energy Oversight Policy."

The requirements of DOE O 450.1, as reflected in the contract requirements document, are incorporated into the site contract as part of the Work Smart Standards.

The site contractor has updated its approved Integrated Safety Management System (ISMS) Description to include the EMS requirements of DOE O 450.1. I have confirmed this as part of the self-declaration procedure described above.

I have ensured, through the annual ISM review process pursuant to DEAR 970.5223-1(e), that the contractor's Environment, Safety and Health (ES&H) performance objectives, performance measures, and commitments are incorporated into an ISMS/EMS and include appropriate environmental elements based on the environmental risks, impacts of activities at the site, and established Departmental pollution prevention/energy efficiency goals.

Documentation supporting these determinations is available for review.

If you should have any questions please contact Mike Saar, of the Ames Site Office, at (630) 252-2245.

A handwritten signature in blue ink that reads "Roxanne Purucker".

Roxanne Purucker, Manager
Ames Site Office

cc: Don Erbschloe, SC-3, FORS
Leah Dever, SC-31, GTN
Sat Goel, SC-31.1, GTN



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

Tom Barton
Director
Ames Laboratory #3, DOE
G40 TASF Iowa State University
Ames, Iowa 50011

19 JUN 2006

Dear Mr. Barton:

RE: Ames Laboratory #3, DOE
Ames, Iowa
RCRA ID No. IA6890008950

On April 27, 2006, a representative of the U. S. Environmental Protection Agency (EPA) inspected your facility. The inspection was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA). A copy of that inspection report is enclosed.

I have reviewed the inspection report and determined that no violations of RCRA were documented. Therefore, no further action concerning this matter is necessary at this time. Please note that EPA reserves its enforcement authorities, including assessment of penalties, for violations that occur at any time.

I would like to remind you that your facility is responsible for maintaining compliance with all applicable hazardous waste regulations. If there are any questions regarding this matter, please contact James Terry working under a grant at EPA at (913) 551-7958.

Sincerely,

A handwritten signature in purple ink, appearing to read "Edwin G. Buckner".

Edwin G. Buckner, P.E.
Compliance Officer
RCRA Enforcement and State Programs Branch

Enclosure

cc: Cal Lundberg
IDNR