

Policy and Scope

The USDA-ARS Northern Plains Agricultural Research Laboratory (NPARL) in Sidney, MT conducts research on soil and water stewardship and the biological and cultural management of insects, pathogens and weeds within production systems that enhance profitability and environmental quality. In keeping with this stewardship emphasis, NPARL established its Environmental Management System (EMS) in October 2005 and updates it annually in accordance with Executive Orders 13423 and 13514, along with the International Standard Organization 14001 requirements.

Responsibilities

NPARL Unit Research Leaders have the ultimate responsibility for implementation, maintenance and monitoring of the lab's EMS plan, and shall provide leadership in, and support for EMS compliance in their units and in the lab as a whole. The Location EMS Manager and EMS Coordinator will monitor for compliance with the objectives of the EMS and provide EMS training for staff.

The EMS Committee will provide guidance in implementing tasks and will update the EMS program in response to changing regulations or directives. The Committee will meet annually to review and revise the EMS, and at other times as appropriate.

Supervisors/worksites coordinators have the responsibility to ensure that their workers are trained on and follow the policies of the EMS.

Individual employees are responsible for following the directives and objectives of the EMS in their day-to-day work activities.

All levels of administration will strive to maintain the quality of the EMS by a continual process of "plan, do, check, and improve."

Standard Operating Procedures

The following specific measures, organized into six broad categories, will be undertaken where possible to address environmental and health and safety issues arising from operations at NPARL. All Departmental guidance, P&P's, FAR and Executive Order requirements will be implemented. Throughout, we will make every effort to reclaim, recycle or reuse items wherever possible.

Heat, Electricity & Water Conservation

- We shall continue the practice of relamping existing fluorescent bulbs with new more energy efficient (green tip) bulbs and non-PCB energy efficient ballasts. Including in bio chambers.
- We will use power factor correction capacitors, variable speed drives, energy efficient motors, more efficient roof insulation, and in-floor heating (in new buildings) as well as caulking leaks to increase energy efficiency.
- We will purchase new energy efficient units and make improvements to existing units when replacing or renovating growth chambers.
- We will purchase more energy efficient units when replacing freezers, incubators, ovens, or refrigerators.
- We will encourage employees to consolidate autoclave waste to reduce the number of days the equipment is in use, generally to twice a week.
- Employees will be encouraged to turn off electrically powered equipment when leaving for the day.
- HVAC filters will be replaced on a monthly basis or as needed to lower energy usage.
- The HVAC will be set at 68 F in winter and 75 F in summer. Tech building program controlled thermostat is set for 68 F in winter and 78 F in summer.
- Underground sprinklers will be set on timers and rain gauge to auto-shut off to conserve water and energy. In addition all employees are directed to report any running toilets or leaking faucets or sprinklers to maintenance personnel for immediate repair to conserve water.
- Employees will be encouraged to shut off lab equipment (fume hoods, laminar flow hoods, biological safety cabinets) when not in use and to lower sashes on newer equipment to activate its energy saving mode.
- Lights will have motion sensors that will shut them off automatically when no movement is detected for 15 minutes. Employees will be encouraged to shut off hallway lights when extra lighting is not needed.
- We will purchase 100% E-PEAT (Silver or better) registered computers, flat screen monitors and other electronic products. For products not registered by EPEAT we will purchase Energy Star products and

enable energy saving features.

- Employees will be encouraged to shut monitors off if gone for a week or more.
- Where feasible NPARL maintains computer workstations with shared monitors to save energy and reduce e-waste.
- We will strive to build "Green Buildings" when feasible for new construction. Definition of a green building includes: a sustainable structure that is designed, built, renovated, operated or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment.
- We have annual goals to decrease energy usage by 2-5% and long term goals to install heat recovery system for all existing buildings when it becomes economically feasible. Containment facility has heat recovery.
- NPARL research is designed to maximize efficiency of applications of water and agrochemicals to closely match plant needs and minimize any negative environmental impacts, which is supported by detailed monitoring programs.
- We will recycle paper, magazines, phone books, newspapers, etc. We use a center 45 miles away and haul every two weeks at no cost to the government. Since 2005 We've kept 35,386 pounds of paper out of the local landfill.
- Refrigerants will be reclaimed and recycled from non-working or obsolete refrigeration units. The reclaimed refrigerant will then be reused in existing units requiring the same refrigerants.
- Obsolete or non-working refrigerators, freezers and refrigeration equipment will be brought to the local landfill for recycling.
- We will recycle cardboard through the local Richland Opportunities Inc. (ROI) Recycling Program. No poundage available.
- Nickel-cadmium, lithium, and mercury containing batteries will be placed in the E-waste container for recycling.
- Alkaline batteries will be returned to vendors for

Recycling

recycling under the "Big Green Box" program. Since 2004 we've kept 209 pounds out of the local landfill.

- Vehicle batteries will be transferred to a local commercial vendor for recycling.
- Used vehicle oil will be transferred to a local farm equipment supplier to be reused in an EPA approved oil burning furnace.
- Used fluorescent bulbs containing mercury will be recycled, high pressure sodium lamps and mercury vapor halogen lights. Since 2006, we've kept 620 pounds out of the local landfill.
- Estimated 100 pounds of aluminum cans will be donated for recycling to local Boy Scout troops or to ROI, the funds from which are used to help with their recycling and other programs. Since 2005, we've kept 900 lbs out of the local landfill.
- Pop can tops are donated to Ronald McDonald house for support of kidney dialysis programs.
- #1 Plastic Bottles are recycled. Since 2010, we've recycled 113 pounds.
- All outdated electronic equipment (including computers, monitors, and components) will:
 - a. Have data storage devices purged of information and data according to DOD 5220.22-M sanitization requirements.
 - b. Be placed on the government surplus property list and then donated to schools, or other Federal or state agencies. "E-erase your E-waste" brochures will be included with all electronic equipment that is donated or purchased from NPARL to help educate the public about local recycling options for electronics.
 - c. Be recycled via a contracted recycling firm specializing in electronic waste. (Note: NPARL held its first e-cycling event - open to the community - in June 2005. To date that community event has collected more than 308,726 or 154 tons. of e-waste for recycling.)
 - d. Since 2005 NPARL has kept 10,231 lbs or 5.1 tons of e-waste out of local landfills, including 3661 lbs of Lead, 0.05 lbs of mercury and 724 lbs of plastic.

Procurement

- Credit card holders will purchase environmentally preferred products and follow all ARS P&P's and FAR requirements.

- We will purchase items made of recycled material whenever practical, including such things as office paper, printer cartridges, tissue paper, and toilet paper.
- When in need of uncommon chemicals, employees will be encouraged to determine whether the compounds are available elsewhere on site before purchasing.
- We will purchase Energy STAR electronics – and ensure that the energy-saving features are switched on – and other green products wherever practical.
- Employees are encouraged to use alternative fuels such as E85 and bio diesel where available, in all flexi fuel vehicles.
- Green cleaning products will be used.

Environmental Practices

- Ozone-depleting chemicals such as R-11 or R-12 (Chlorofluorocarbon) will be replaced with environmentally acceptable refrigerants such as R-410A, R-401A, R-402A and R-134A (Hydrochlorofluorocarbon).
- Lab generators will be maintained to prevent unwanted air effluent.
- We will use non-hazardous ice melting compounds on sidewalks and parking lot surfaces.
- We use environmental coolants where possible in the HVAC and other equipment requiring a coolant.
- North and South buildings have occupancy sensors installed in all labs and offices.
- Light ballasts containing PCB's are removed as they fail and are disposed of properly to prevent any harm to human health or the environment.
- All biological products (ex: plants, soil, containers, etc.) will be autoclaved to prevent any adverse impact on the environment.
- Employees are encouraged to use teleconferencing and carpooling when possible to reduce energy use and expense.
- Employees will be encouraged to limit non-essential travel involving USDA fleet vehicles or employee-owned vehicles.

Hazardous Chemical Waste Reduction

- Researchers will be educated and reminded to purchase only needed quantities of chemicals.
- We will encourage the replacement of existing chemicals with less hazardous chemicals when possible.
- We will convert from alkyd to latex-based paints, where practical.
- We will convert to biodegradable solvents where possible.
- We will use less solvent and cleanser where practical when rinsing and cleaning equipment.
- Researchers will be encouraged to transfer excess chemicals to other researchers rather than dispose of them as hazardous waste.
- We will reduce pesticide use by mixing only needed quantities or by converting to less hazardous pesticides. We will employ bio-control methods before pesticides, where possible.

Miscellaneous Related Activities

- We will provide information on proper handling of asbestos, lead paint, and waste building products and will require proper and environmentally friendly disposal of these same products.
- Existing asbestos tiles will be treated with special care and will be removed when funding is available. In the meantime, all employees will be made aware of the location of asbestos floor tiles located in North Building #1 including hallways, offices and all labs and will be encouraged to report any tiles showing wear to safety personnel for removal to avoid the introduction of airborne fibers into the work environment.
- We will limit and monitor the types and quantities of hazardous substances being disposed of in sanitary sewer and the storm sewer.
- We will continue to recycle or reuse products whenever possible.
- All biological products will be autoclaved to prevent any type of impact to the environment.
- We will use electronic file record keeping when practical to replace paper copies, and encourage double-sided printing and copying when paper copies are necessary. All public printers are set automatically for double-sided printing.
- Employees will be encouraged to adopt healthy and energy-saving practices such as riding bicycles or walking to work. (Note: Several NPARL employees

already do this, riding their bikes in the summer months and walking in winter.)

- We will encourage employee participation in the “Adopt a Highway Program,” under which employees pick up garbage along a 2-mile section of highway twice a year. This is done on a volunteer basis and the employees perform the clean up of the highway on their own time. NPARL employees have participated in this program for several years.
- We encourage employees to practice environmental safety and conservation at work and home by providing informational resources including this pamphlet outlining our EMS plan and a list of web sites with additional energy saving and recycling tip.

For More Information

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Helpful Web Sites

www.federalelectronicschallenge.net
www.epa.gov/wastewise/
www.epa.gov/rcc/plugin/reuse.htm
www.energy.gov/engine/content.do
www.buildinggreen.com
www.epeat.net/
www.mygreenelectronics.org
www.energystar.gov
www.energyhog.org (Fun consumer webpage)
www.energysavers.gov/ (Consumers)
www.eere.energy.gov/consumer
www.energysavers.gov/homeowners.html

Additional information is also available on the NPARL public drive at: P:\Safety\EMS



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What Can...



**USDA-ARS
Northern Plains
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Sidney, MT

**Environmental
Management
System Plan**

Do To Protect Our Environment?