

Activity: Laboratory Research

| Aspects | Impacts | Ranking |
|--|--|---------|
| Purchasing Hazardous Chemicals | Depletion of natural resources in the following way: (a) Energy use for storage requirements (i.e., use of electricity for low-temperature refrigeration or ventilation). | H, L |
| | Generation of hazardous waste by the following activities: (a) Duplicate purchasing of hazardous chemicals already on location inventory; | L, L |
| | (b) Large-scale purchasing of unusable quantities of chemical; and, | L, L |
| | (c) Chemical is not used, resulting in chemical entering hazardous waste stream. | L, L |
| Use of Hazardous Chemicals | Contamination of land, water, and air. | L, M |
| | Depletion of natural resources in the following ways: (a) Energy utilized in laboratory manipulations (i.e., use of electricity for laboratory equipment, fume hood operation, etc.). | L, L |
| | (b) Use of water, plastic ware, glassware, and paper; and, | M, L |
| | (c) Increased chemical consumption due to use of old methodologies rather than employing the use of newer techniques. | L, L |
| | Generation of hazardous wastes and the cost for disposal. | M, L |
| | Chemical release or spills and the cost for HAZMAT or emergency spill response team clean-up and disposal. | L, L |
| Use of Radioactive Materials | Air emissions | L, L |
| | Depletion of natural resources | L, L |
| | Generation of radioactive or hazardous wastes. | L, L |
| | Contamination of facilities, land, water, and air. | L, L |
| Wastewater Discharges from Location Activities | Radioactive material releases or spills and the cost for HAZMAT or emergency spill response team clean-up and disposal. | L, L |
| Wastewater Discharges from Location Activities | Potential impacts at treatment plant from laboratory sinks and building floor drains. | M, M |

Activity: Field Research

| Aspects | Impacts | Ranking |
|---|--|----------------|
| Application of Agricultural Pesticides | Pesticide rinsate generation (container and spray equipment cleaning) and spills | M, L |
| | Contamination to surrounding land, surface or ground water, and air (pesticide drift). | M, L |
| | Pesticide toxicity to wildlife. | M, L |
| | Generation of hazardous and universal waste (unused/expired pesticide products) and cost for waste disposal. | H, L |
| | Human health threat in the event of a spill or incorrect application. | L, L |
| | Air emissions. | M, L |
| Field Plot Maintenance | Depletion of natural resources (i.e., fossil fuels used in tractors, vehicles, or other equipment). | H, L |
| | Contamination of land, water, and air. | L, L |
| | Air emissions. | M, L |
| Use of Water for Research Purposes (Irrigation) | Depletion of natural resources (surface or ground water usage). | M, L |
| | Depletion of natural resources (use of fossil fuel or electricity for pumping). | M, L |
| | Contamination of land and water (nutrient run-off). | L, L |

Activity: Facility Construction Projects

| Aspects | Impacts | Ranking |
|-------------------------------------|--|----------------|
| Construction of New Facilities | Depletion of natural resources (construction materials, fossil fuels). | M, L |
| | Land and waterway contamination (run-off from construction sites). | L, L |
| | Generation of solid waste. | M, L |
| Construction in Existing Facilities | Depletion of natural resources (construction materials, fossil fuels). | M, L |
| | Generation of hazardous waste (PCB, asbestos, and mercury containing materials). | L, L |
| | Generation of solid waste. | L, L |

Activity: Facility Operations

| Aspects | Impacts | Ranking |
|---|---|---------|
| Office: Use of Electronic Equipment (including computers, fax and copy machines | Depletion of natural resources. | L, L |
| | Generation of recyclable waste (electronic waste, lead acid batteries, toner cartridges, paper). | M, L |
| | Cost for disposal of universal waste. | H, L |
| Paper Usage | Depletion of natural resources (deforestation, use of landfill space). | L, L |
| Generation of Waste from Facility | Generation of hazardous waste (spent solvents, used oils, pesticides, paints, mercury containing equipment). | H, M |
| | Generation of universal waste (fluorescent lamps, PCB containing lamp ballasts, electronic equipment, batteries). | H, L |
| | Ozone depletion (repair of older refrigeration equipment containing ozone depleting refrigerants). | L, M |
| | Generation of solid waste (paper, cardboard, aluminum, excess furniture, other equipment). | H, L |
| | Cost for disposal. | H, L |
| Temperature Control of Buildings | Ozone Depletion (release of refrigerant). | H, M |
| | Depletion of fossil fuels. | H, L |
| | Extreme temperatures affect the operation of certain laboratory and electronic equipment. | L, L |
| Grounds Maintenance | Depletion of natural resources (pesticide, fertilizer, and water use). | L, L |
| | Depletion of natural resources (fossil fuels for equipment operation). | L, L |
| | Pesticide rinsate generation (container and spray equipment cleaning) and spills. | M, L |
| | Contamination to surrounding land, surface or ground water, and air (pesticide drift). | M, L |
| | Pesticide toxicity to wildlife. | M, L |

Activity: Facility Operations

| Aspects | Impacts | Ranking |
|--------------------------|--|----------------|
| Motor Vehicle Activities | Generation of used oil, contaminated rags, used antifreeze, tires, and batteries. | H, L |
| | Generation of hazardous waste (parts cleaners, solvent degreasers). | H, L |
| | Contamination of land and waterways (fuel storage, fuel transfer operations, vehicle washing). | L, L |
| | Air emissions. | M, L |
| | Depletion of natural resources (fossil fuels, lubricants, and tires). | H, M |
| | Storage tank management. | L, M |
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| Custodial Operations: | Depletion of natural resources (chemicals, fossil fuels, etc.). | L, L |
| Use of Cleaning Products | Contamination of land. | L, L |
| Paper Usage | | |
| Water Usage | | |
| Generation of Waste | | |
| Energy Usage | | |

Executive Order 13514

Federal Leadership in Environmental, Energy, and Economic Performance

- Signed: October 5, 2009
- Federal Register page and date: 74 FR 52117, October 8, 2009
- See: EO 13423, January 24, 2007

Executive Order 13423

Strengthening Federal Environmental, Energy, and Transportation Management

- Signed: January 24, 2007
- Federal Register page and date: 72 FR 3919, January 26, 2007
- Amends: EO 13327, February 4, 2004
- Revokes: EO 13101, September 14, 1998; EO 13123, June 3, 1999; EO 13134, August 12, 1999; EO 13148, April 21, 2000; EO 13149, April 21, 2000
- See: EO 13432, May 14, 2007; EO 13514, October 5, 2009
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See The National Archives website under the Federal Register for more information:
<http://www.archives.gov/federal-register/executive-orders/2009-obama.html#13514>