Pollution Prevention Plan

for

Birch Hill Dam

June 1996

US Army Corps
of Engineers
New England Division

POLLUTION PREVENTION PLAN

LOCATION:

BIRCH HILL DAM
ROYALSTON, MASSACHUSETTS

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POLLUTION PREVENTION PLAN

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POLLUTION PREVENTION PLAN

1. INTRODUCTION

a. Background Information. Executive Order (EO) 12856, "Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements," was signed by the President on 3 August 1993 to challenge the Federal Government to become a leader in pollution prevention, and be a good neighbor by providing local and State authorities with information concerning Federal Government use of toxic and hazardous chemicals and extremely hazardous substances.

The EO extends the coverage of the 1986 law "Emergency Planning and Community Right-to-Know Act" (EPCRA - 40 CFR 372) to Federal facilities. Private industry has been responding to the 1986 law since its inception, and the Federal community is now doing the same.

The requirements of EO 12856, and other related Environmental Executive Orders, were incorporated into a Comprehensive Pollution Prevention Strategy and signed by the Secretary of Defense on 11 August 1994. This strategy is effected across all the Departments, including the Department of Army, and the Corps of Engineers. EO 12856 applies to all Departments of Defense, Department of the Army, and Corps of Engineers facilities within the territory of the United States; in effect, all Corps of Engineers civil works facilities and projects.

The Director of Civil Works, issued a statement regarding the Corps policy for pollution prevention on 10 August 1995. He cited the environmental ethic and stewardship which are so much an integral part of the civil works community, and called upon the Corps family to embrace and implement all aspects of the President's EO.

One primary product of the EO is a Pollution Prevention Plan (P2 Plan) for "covered" Corps of Engineers civil works facilities and projects. Initially, projects and facilities reporting under any of the several sections of EPCRA are considered as "covered facilities," and have prepared plans leading to the reduction of pollution for their operations. Eventually, all facilities of any significant size will have a P2 Plan as a framework for pollution prevention and sound environmental practices.

Pollution prevention has as its focus the elimination or modification of activities to achieve a more desirable

environmental end result. Pollution prevention includes any practice which reduces the amount of hazardous substances, pollutants, or contaminants entering the waste stream or otherwise released into the environment, prior to recycling, treatment, or disposal, and any practice which reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants. The Corps of Engineers early efforts at pollution prevention were sometimes referred to as "waste minimization."

b. Pollution Prevention Strategy for the Corps of Engineers. The Corps of Engineers welcomes the President's vision as expressed in EO 12856 that . . . "Federal facilities will set the example for the rest of the country and become the leader in applying pollution prevention to daily operations, purchasing decisions, and policies . . . " The Corps reaffirms its obligations as a responsible neighbor in communities where our civil works facilities and projects are located. Pollution prevention at Corps facilities will not only reduce the amount of potentially harmful substances that are released, it will provide a safer environment for visitors, contractors, and employees, and a safer environment for communities near Corps facilities. Pollution prevention has the additional benefit of conserving our valuable and finite natural resources, and will prevent costly cleanup of facilities, waters, and lands. Corps participation in community right-to-know efforts will ensure that we are responsive to community needs and that our facilities appreciate their responsibility as part of the community.

The U.S. Environmental Protection Agency (EPA) recommends the following seven step process for pollution prevention.

- Develop Pollution Prevention Goals.
- Obtain Management Commitment.
- Establish a Pollution Prevention Team.
- Develop a Baseline.
- Conduct Pollution Prevention Opportunity Assessments.
- Develop Criteria and Rank Activities/Opportunities.
- Conduct a Management Review.

This document addresses the complete process, with a focus on what management needs to finalize a comprehensive pollution prevention program.

Pollution prevention opportunity assessments lead to identification of techniques and technologies to reduce waste generation. Pollution prevention opportunity assessments are

achieved through in-house efforts, contracts with environmental firms, use of personnel from other Corps offices, with EPA or other regulators, or through combinations of these elements.

2. APPENDICES/DEFINITIONS

Appendices are provided to the project under separate cover.

Definitions of terms and acronyms used in this plan are listed in the Glossary in Appendix M.

3. PURPOSE AND OBJECTIVES

Birch Hill Dam will fully support the Corps of Engineers pollution prevention policy and goals through the following specific objectives. By 1 July 1996, the facility will: (a) identify specific waste generating processes and develop a baseline inventory of major categories of wastes produced, and (b) prioritize waste problems and/or inefficiencies at this facility.

By 31 December 1996, Birch Hill Dam will develop a strategy using the Pollution Prevention Opportunity Assessments and other technical sources to reduce the use of hazardous materials, minimize production of hazardous and other wastes, and eliminate pollutant emissions to the environment to the maximum extent technologically and economically feasible.

The Birch Hill Dam P2 Plan provides a strategy and list of action items to integrate pollution prevention into all activities and processes. The plan provides a process for development and implementation of a facilitywide, multimedia P2 Plan that will enable this facility to meet all pollution prevention plans and goals. The result will be more efficient operations, and a cleaner and safer working environment.

4. CORPS OF ENGINEERS PHILOSOPHY AND POLICY ON POLLUTION PREVENTION

As previously noted, pollution prevention is a "source reduction" approach to creating a better environment. It reaches beyond the end-of-pipe or end-of-stack solutions to avoid the generation of waste or environmental releases, and stresses the management of all environmental media (air, land, water) together. The Corps subscribes to a hierarchy of options for managing waste. Source reduction is the most desirable, then recycling, treatment, and disposal complete

the hierarchy. These will be discussed in greater detail in this plan.

Pollution prevention can be achieved through a number of activities: process efficiency improvement, material substitution, inventory control, preventive maintenance, and improved housekeeping. Often these activities will require capital investments to implement. The basic cost of these pollution prevention actions may be significant; however, the savings or cost avoidance over a reasonable investment period due to reduced energy, materials, labor, compliance costs, or environmental consequences, make them cost effective. This "life-cycle" cost estimating is the recommended approach to implementing pollution prevention measures.

5. CORPS OF ENGINEERS GOALS IN POLLUTION PREVENTION

EO 12856 sets a goal of 50 percent reduction of toxic chemicals by 31 December 1999. The goal applies to the agency (Department of Army) in its use of toxic chemicals (facilities covered by section 313 of EPCRA). Birch Hill Dam does not meet the requirements of section 313 (TRI) pollutants and does not report against the 50 percent reduction goal.

New England Division (NED) has set a target of 25 to 50 percent reduction of a river basin's waste stream by 31 December 1999. This goal is the sum total percent reduction at each water control project within the respective river basin. The baseline year for calculating the reduction of a river basin's waste stream is 1994. This year was chosen as a baseline to reflect the pollution prevention measures/waste reduction activities that were carried out prior to issuance of this plan.

Page 6 is a worksheet designed to facilitate tracking the project's waste reduction. Total volume and percent reduction of each waste category should be calculated each year. Percent reduction is calculated using the baseline year (1994). This worksheet allows Birch Hill Dam personnel to track the reduction of certain wastes and observe if they are on target for reaching their waste reduction goals.

Another goal for NED's water control projects is to reduce all hazardous substances/wastes to levels below reportable quantities/limits. The reportable quantities/limits observed shall be the more restrictive of those set by the State or Federal Government.

Also, all chemical/oil storage tanks at each project shall have an approved secondary containment structure. An approved structure shall follow Federal Regulation 40 CFR 112.7 (see Appendix L) and the Corps of Engineers EM 385-1-1, section 09.B.27(d). Check the SPCCP/SCP for Birch Hill Dam, available at the project, for additional information on secondary containment.

Following is a table summarizing the goals concerning pollution prevention. These goals are also listed in Appendix F, Birch Hill's Pollution Prevention Strategy Sheet, in the event subsequent goals need to be added.

BIRCH HILL DAM'S POLLUTION PREVENTION STRATEGY		
Goal	Established By	Target Date
Contribute to the 25 to 50% reduction of the total waste stream within the Lower Connecticut River Basin.	NED	1999
Reduce all hazardous substances/wastes located at Birch Hill Dam to quantities below reportable quantities/limits that are set by the MA DEP.	NED	1999
Provide approved secondary containment structures for all chemical/oil storage tanks located at Birch Hill Dam.	NED	1999

6. ASSUMPTIONS

a. This plan is in effect and implemented continuously.

b. The Lower Connecticut River Basin Manager is responsible for pollution prevention at Birch Hill Dam.

7. PROJECT DESCRIPTION AND LOCATION

Birch Hill Dam is located on the Millers River 27.3 miles above its junction with the Connecticut River. The dam and reservoir are located in the towns of Royalston, Winchendon, and Templeton in Worcester County, Massachusetts (see figure 1, Appendix A for location map).

The Millers River channel downstream of Birch Hill Dam flows through the following seven communities within north-central Massachusetts: South Royalston, Athol, Orange

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Birch Hill Dam Waste Reduction Worksheet

Material	1994 (Baseline Year) Total Volume	1995 Total Volume	1995 % Reduction	1996 Total Volume	1996 % Reduction	1997 Total Volume	1997 % Reduction	1998 Total Volume	1998 % Reduction	1999 Total Volume	1999 % Reduction
Hazardous Wastes											
Petroleum, Oil, and Lubricants (POLs)	66.5 gal	68 gal		67 gal	1.5%						
Paints and Allied Products	70 gal	56.5 gal	19.3%	55.5 gal	1.8%						
Chemicals and Solvents	31 gal	23 gal	25.8%	22.5 gal	2.2%						
Asbestos	0	0		0							
Treated Wood	0	0		0							
Equipment/Vehicle Maintenance Wastes	5.5 gal	25 gal		7 gal	72%						
Other											
Non-Hazardous Wastes											
Recyclable Wastes	31 cf	31 cf		37 cf							
Compostable Wastes	0			0							
Non-recyclable Wastes	112 cf	112 cf		112 cf							
Construction and Demolition	0										
White Metal Goods	0										
Tires	0										
Other											

Wendell Depot, Erving, Farley, and Millers Falls in downstream order.

Birch Hill Dam is a single purpose flood control project, built and operated by the Corps of Engineers. Construction was initiated in June 1940 and completed in February 1942. Birch Hill Dam reduces flood levels at the downstream communities, and in conjunction with the other 15 flood control dams in the basin, aids in reducing flood levels along the Connecticut River. The project is 1 of 2 flood control projects constructed by the Corps in the Millers River watershed. A reservoir map is shown in figure 4, Appendix A.

Important physical components of the project consist of a rolled earth dam with a dumped rock shell, chute spillway composed of three concrete ogee weirs, outlet works, and a storage for flood control. The dam embankment is approximately 1,400 feet in length with a 56-foot maximum height above streambed, and a top of dam elevation of 864 feet above mean sea level; see figure 3, Appendix A for the general dam layout.

The Birch Hill Dam spillway consists of three ogee weirs with a total length of 1,190 feet. The main spillway has a length of 810 feet, and is located on a natural saddle about 1,900 feet northwest of the dam. One auxiliary spillway is located in a natural saddle about 2,200 feet northwest of the dam, and the other, 30 feet long, is located in an abandoned railroad cut about 2,400 feet northwest of the dam.

The reservoir has a storage capacity of 49,900 acre-feet, equivalent to 5.3 inches of runoff from its 175-square mile drainage area. When filled to spillway crest, a 3,200-acre lake is created with a maximum depth of 37 feet.

The Birch Hill Dam project lands have a total of 4,396 acres owned in fee. It is comprised of the 82-acre Lake Dennison, 200-acre Lake Dennison camping areas, and 4,112 acres of upland forest. The lake's recreation area, with facilities for boating, fishing, swimming, camping, and related outdoor sports, is operated and administered by the Massachusetts Department of Natural Resources, Division of Forests and Parks. The remaining reservoir area is managed by the Massachusetts Division of Fisheries and Game for public hunting and fishing.

8. ROLES AND RESPONSIBILITIES

a. Commander

(1) Exercise overall control of Division facilities, NED personnel, and contractor personnel who manage pollution-generating activities.

(2) Support programs and budgets for personnel, materials, equipment, and training required to implement pollution prevention strategies.

(3) Ensure coordination between various Division elements regarding the compliance of contractors and other pollution prevention partners.

b. Director of Operations

(1) Exercise overall control of NED's flood control facilities, Corps personnel, including those of the contractor, that manage or contribute to pollution generating activities.

(2) Ensure that pollution prevention measures accomplish acceptable reduction levels.

(3) Support programs and budgets for personnel, materials, equipment, and training required to implement pollution prevention strategies.

c. Environmental Compliance Coordinator

(1) Review and approve P2 Plan, revisions, and amendments.

(2) Integrate pollution prevention in the Division's Comprehensive Environmental Stewardship program and oversee field office staff concerning pollution prevention methods.

(3) Coordinate development of pollution prevention opportunity assessments and preparation of field office P2 Plans. Review plans for effectiveness and compliance with environmental regulations. Coordinate review of plans by internal Division elements and those outside NED.

(4) Prioritize funding for pollution prevention activities and equipment.

(5) Prompt periodic reviews and evaluations of P2 Plans to monitor the performance of pollution prevention projects (reviews will be conducted according to the schedule

determined most appropriate [ERGO, etc.], or as significant waste stream changes occur). The periodic reviews will include whether more effective prevention and control applications are available for use in the facility's P2 program.

(6) Advise Director of Operations when the P2 Plan is not in compliance with regulatory requirements.

d. Chief, Environmental Engineering and Hydraulics Branch

(1) Supervise production and review of P2 Plan for conformance and compliance with applicable Federal, State, and local regulations.

(2) Execute periodic technical reviews of P2 Plan.

e. Lower Connecticut River Basin Manager

(1) Exercise overall control of Birch Hill Dam personnel who are involved in waste generating activities.

(2) Ensure that pollution prevention is accomplished to acceptable levels.

(3) Coordinate with non-Corps elements (e.g., contractors, State and local regulators, etc.) regarding compliance of contractors and waste generators.

(4) Maintain the P2 Plan on file at Birch Hill Dam.

(5) Program and budget for personnel, materials, equipment, and training required for implementing pollution prevention strategies.

(6) Revise and resubmit the P2 Plan whenever there is a significant change in facility design, construction, operation, or maintenance which affects the facility's waste streams.

(7) Manage preparation and amendments of the Birch Hill P2 Plan.

(8) Review deficiencies and initiatives to improve pollution prevention in the first month of each quarter and follow through to completion.

(9) Ensure that all waste streams at the project are addressed in the P2 Plan.

(10) Perform periodic management actions to verify compliance with the P2 Plan in areas within Birch Hill Dam responsibility. Maintain informal documentation to support inspections and any subsequent program revision.

(11) Prepare and update baselines for hazardous material use and waste generation.

(12) Perform periodic visual surveillance of areas under Birch Hill Dam's responsibility to verify compliance with this plan.

(13) Maintain any special equipment and material used for pollution prevention at the project.

(14) Investigate potential pollution prevention opportunities as changes in waste streams occur.

(15) Coordinate Birch Hill Dam's pollution prevention training programs.

9. FUNCTIONS AND ACTIVITIES

a. Routine Activities. Typical activities at buildings and grounds at Birch Hill Dam include maintenance of flood control facilities, mowing embankments and grounds, debris and sediment removal from the reservoir, and repair of mechanical equipment and structures. These activities require the handling and storage of oil, and other petroleum and chemical products.

These activities are normally contracted out to commercial companies (contractors) who perform the work. Any waste oil generated (e.g., from the use of chain saws, engines, etc.) during their work is disposed of by the contractor. In the case of a contractor's noncompliance with safety and environmental standards, Corps officials have the option of stopping his work and/or seeking compensation from him for expenses incurred in fulfilling safety or environmental obligations.

In situations where waste oil is generated by Birch Hill Dam personnel (e.g., emergency oil change on a Corps-owned vehicle or piece of equipment), a licensed contractor for hazardous material removal is contacted, and the waste oil is removed.

Birch Hill Dam is registered as a small quantity generator of waste oil with the Environmental Protection Agency (EPA). This registration, as a small quantity generator, addresses the issue of generating, handling, and

disposing waste oil by Birch Hill Dam personnel. The project's EPA small quantity generator ID number is MA960009813. The recommended procedure for project personnel to follow when generating waste oil is outlined in the Spill Prevention, Control, and Countermeasure Plan/Spill Contingency Plan (SPCCP/SCP) for Birch Hill Dam, which is available on site.

b. Leased Areas. Several tracts of land are leased out at Birch Hill Dam. Pollution prevention for lessee facilities and activities on Corps lands are the responsibility of the "lessee," also referred to as the "lease area operator." Where leased areas are mandated by Federal or State Regulations to have and maintain a pollution prevention plan, the lessee will comply with appropriate pollution prevention requirements and State and Federal Regulations.

c. Oil Tanks. Petroleum product storage tanks are listed in Appendix B, "Oil Storage Tank Inventory," which includes tank number, location, capacity, installation date, type, material of construction, fuel-type stored in tank, purpose of fuel or usage, and whether the tank has secondary containment, leak detection, or cathodic protection. Locations of these tanks are shown on figure 5 in Appendix A.

d. Paint Locker. Oil, petroleum products, and chemicals are stored in a paint locker in the utility building. This locker is vented by gravity through a chimney leading to the utility building roof. The paint locker has a 3-inch high concrete berm at its entrance that acts as secondary containment. Three 45-gallon flammable storage cabinets, are located in the paint locker. Less than 25 gallons of gasoline and diesel fuel are kept in each of these cabinets which have no open airways to the paint locker and, therefore, have no ventilation. A copy of Birch Hill Dam's current chemical inventory is kept in the project office. In Appendix C of this plan, space is provided for the Lower Connecticut River Basin Manager to place a copy of the chemical inventory. Material Safety Data Sheets (MSDS) for materials on site are kept in a file cabinet in the utility building. If an MSDS for a product is not available, one for a similar product will be used.

Items on the current inventory are not considered hazardous as defined under 40 CFR 355.20. This CFR excludes a chemical from being classified as being hazardous if it is "used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public." All chemicals at Birch Hill Dam can be defined as such.

Under 40 CFR 302, some products on the Birch Hill Dam inventory are considered to be made up of hazardous substances; however, these products are not considered hazardous because the amount of hazardous substance(s) in the product is under the reportable quantity (RQ).

Under Massachusetts Regulations that govern hazardous materials (310 CMR 4), the only petroleum products at the Birch Hill project at or over the RQ are oils, gasoline, and diesel fuel. A list of these products is shown in Appendix D1. Some products listed are under the RQ, but in a worst case scenario where all petroleum products were to spill, the total amount would be above the RQ. Reportable quantities for hazardous substances determined by the Massachusetts Department of Environmental Protection are listed in Appendix D2. Space is provided in Appendix D3 to list hazardous substances and their RQs, as defined and tabulated under 40 CFR 302.

The paint locker's secondary containment is designed to contain the total quantity spilled of all petroleum products, including oil, gasoline, and diesel fuel. However, since the wall/floor joints are not sealed, there is a potential for spills beyond secondary containment from the paint locker. Therefore, this is not an approved secondary containment, as defined under 29 CFR 1910.106(d)(4). Also, the ventilation system in the paint locker is not an approved system, as defined under NFPA 30, chapter 4-4.1.6 and under EM 385-1-1, section 09.B.24. The ventilation system does not provide an approved component of a P2 Plan.

e. Waste Streams. Areas at the project where waste streams may be generated are listed below. Also included are the type of waste streams that may be produced.

(1) Areas for receiving material (e.g., utility building and gate house) generate wastes such as packaging materials, damaged containers, spill residue, and fuel oil transfer line leakage.

(2) Storage areas (e.g., paint locker and oil storage tanks) may generate wastes in the form of tank bottoms, off-specification and excess materials, spill residue, leaking pumps, valves, pipes, and damaged or empty containers.

(3) Areas where vehicles and equipment are serviced and stored can produce wastes such as solvents, cleaning agents, lubricants, scrap metal, caustics, and acids.

Appendix E contains a list of specific processes that may occur at the project, and associated wastes generated by these processes.

10. JURISDICTION

The Massachusetts Department of Environmental Protection (DEP), Central Region Office (telephone: 508:792-7653), and the U.S. Environmental Protection Agency, Region I, Boston, Massachusetts (telephone: 617-223-7265), are the State and Federal agencies coordinating with Birch Hill Dam personnel regarding pollution prevention.

11. ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (ERGO) PROGRAM

Birch Hill Dam complies with Corps policy and is assessed for environmental compliance by an external team every five years. An environmental compliance assessment of the project was conducted by an interdisciplinary team of New England Division environmental professionals (external team) in May 1992. The assessment was conducted as part of the Corps ERGO program, which establishes the use of environmental compliance assessments to ensure compliance with all applicable Federal, State, local, Department of Defense (DOD), and U.S. Army laws and regulations. This facility's next external assessment is scheduled for 1997.

Each year Birch Hill Dam performs a self-assessment of the project's environmental compliance status.

12. SCOPE OF POLLUTION PREVENTION PLAN

The P2 Plan applies to all activities at the project.

Concession, outgrant, and lease area activities are not considered in the Birch Hill Dam P2 Plan; however, all non-Corps activities will be encouraged to implement similar pollution prevention strategies.

13. UPDATE FREQUENCY

The Birch Hill Dam P2 Plan should be updated every five years during the same year as the ERGO external assessment. The next update is scheduled for 1997.

Scheduling of P2 Plan updates the same time as ERGO assessments leads to improved coordination, preventing duplication of work. The P2 Plan update will address changes in policy and procedures, product substitutions, process changes, and other pertinent information. The review and

updating will include a summary of goals met and revised objectives.

14. TRAINING

To implement a successful pollution prevention program, communication and training are crucial to convey up-to-date information, and to foster a pollution prevention ethic that is supported by the entire facility staff. Since 1993 the Corps has provided information and guidance to Division Environmental Compliance Coordinators (ECCs) on compliance with EO 12856 and other Pollution Prevention Executive Orders and Policy Directives. Headquarters, Environmental Compliance Branch of Operations, Construction and Readiness Division, (CECW-OA) will continue providing information on policy and regulations through the Division ECC, who will forward information to each basin. While there are no specific requirements for pollution prevention training, all facility staff will receive pollution prevention awareness and energy efficiency training. This training may take place during biweekly safety meetings. Technical information on pollution prevention strategies and training opportunities may be obtained from sources outside the Corps such as State EPA Pollution Prevention Coordinators. Additional sources of pollution prevention information can be found in Appendix I.

15. PUBLIC INFORMATION

Executive Order 12856 requires projects and facilities to provide the public with access to their pollution prevention plans and programs. In compliance with this EO, these plans will be maintained onsite for review by the public, EPA, and State regulators; a copy will be provided to regulatory agencies upon request.

16. COORDINATION WITH CONTRACTING AND LOGISTICS DIRECTORATES

In order to comply with pollution prevention requirements, changes in purchasing materials or contracting for services may be necessary. Executive Order 12873 requires that Federal agencies procure products that are environmentally preferable or made with recycled materials. Executive Order 12843 requires that Federal agencies maximize use of alternatives to ozone-depleting substances. Executive Order 12845 requires that new computer purchases meet "Energy Star" efficiency requirements. New requirements will continue to be developed. Technical specifications and General Services Administration (GSA) contracts may not all be up-to-date on these requirements.

The Lower Connecticut River Basin Manager will coordinate closely with the Division Contracting and/or Logistic staff to ensure that all future purchases and disposal actions are not only in compliance with specific requirements, but also support the project and agency goals for pollution prevention.

17. IMPLEMENTATION GUIDANCE

Following are guidelines for management of wastes at the Birch Hill project:

a. Waste should be reduced at the source whenever possible.

b. If it is determined that a waste can be recycled, it should be done to the fullest extent possible.

c. Wherever possible and economically practical, non-toxic/hazardous replacements for hazardous materials should be used.

d. Storage, disposal, and recycling of wastes should comply with all appropriate Federal, State, local, and U.S. Army Regulations/requirements.

e. Hazardous waste should be safely controlled, accounted for with an audit trail and chain of custody, and handled in accordance with legal requirements.

For specific management practices of hazardous and non-hazardous wastes, refer to appropriate Federal, State, and local regulations/guidelines.

18. IMPLEMENTATION PLANS

a. Recycling. A comprehensive recycling program should be established at Birch Hill Dam. All wastes should be identified as recyclable or nonrecyclable. To determine which materials are recyclable, refer to the Massachusetts Recycling Services Directory in Appendix H. A list of materials and activities at the project that produce the materials considered recyclable by the MA DEP is listed in Appendix G.

The recycling program shall include wastes generated by public use at Birch Hill Dam. A separate recycling plan that addresses the minimization and recycling of wastes generated by the public may be necessary.

The Recycling Services Directory lists vendors who accept, collect, or purchase recyclable materials in Massachusetts and adjoining States. The recycling program developed at the project should utilize vendors in the directory. All nonrecyclable waste should be disposed of properly.

b. Hazardous and Nonhazardous Wastes. All wastes should be segregated and identified as hazardous or nonhazardous. Waste definitions are shown in Appendix M.

Hazardous and nonhazardous wastes have different disposal requirements (see State Regulations for specific requirements); segregation of wastes will streamline the disposal process.

c. Substitute Products. Project personnel shall purchase and use alternative, nontoxic products in place of hazardous materials where feasible. Substances such as ethylene-glycol antifreeze should be replaced with propylene-glycol antifreeze. Liquid-cell batteries in project vehicles should be replaced with batteries that have a gel-type substance in their cells.

The Defense Logistics Agency (DLA) provides catalogs listing products and their respective alternatives. To order these catalogs or request information on alternative products call DLA at 1-800-345-6333. Appendix J contains a list of various centers within the DLA supplying information on alternative products.

d. Purchasing of Products. Purchase of paints, pesticides, and other hazardous substances should be kept to a minimum, or on an "as needed" basis. Any residual quantity should be disposed of in compliance with Federal and State Regulations.

e. Material Safety Data Sheets (MSDS). MSDS for all inventory products should be kept on file at the project. For products no longer on site, the respective MSDS should be removed from the file. An accurate inventory of products used, location, and quantities on hand shall be kept at the project to assist in managing of MSDS.

f. Paints and Thinners. Presently there is a large supply of paints, stains, and thinners at the project. The Basin Manager will devise a plan for reducing and disposing the surplus in accordance with all appropriate regulations and in an environmentally safe manner. The plan shall establish a specific reduction goal (percentage reduced and by what year).

Paints, stains, and thinners will no longer be "stockpiled" at the project, and will be purchased on an "as needed" basis. Also, where feasible and economically practicable, water-based paints shall be used in replacement of those oil-based.

g. Hazardous Waste Disposal. All hazardous waste should be disposed of through a licensed hauler and sent to a licensed facility. A hazardous waste manifest will accompany all materials, and appropriate record keeping will be maintained. Only project personnel authorized by the Division Commander may sign/execute the manifests. This authorization must be in writing and stating the employee is within the scope of work when executing these documents. All records pertaining to hazardous waste shall be maintained at the project office for three years.